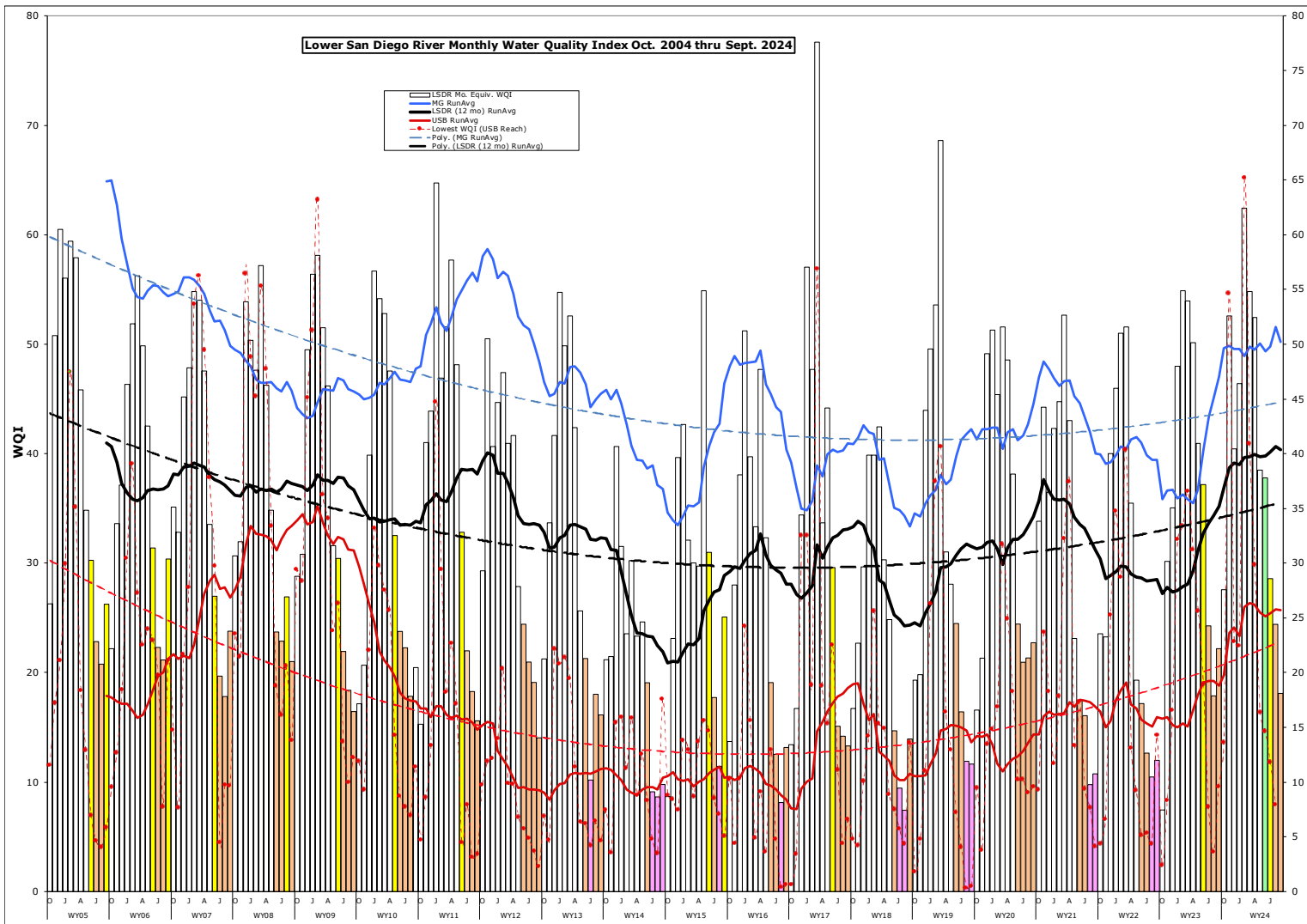


# Monthly WQM Report

## Lower San Diego River - September 2024



## Lower SDR Water Quality Monitoring Data Summary

**Table 1** presents a summary of water quality data monitored by the SDRPF RiverWatch Team within the Lower San Diego River (LSDR) watershed over the last two months. This month's overall index of 18 is six points below last month, four points less than a year ago and the same as the 20-yr September norm.

<b>Table 1 - September/August '24 WQM Data Summary</b>							
	West - MV	Mid - MG	East - SB	LSDR			
[Site #s]	[1-7] Sept/Aug	[8-10] Sept/Aug	[11-15] Sept/Aug	[1-15] Sept/Aug	Last Mo. (8/'24)	Last Yr. (9/'23)	20-yr Avg. (Sept.)
Temperature, oC	24.3/25.0	21.5/23.1	22.6/24.1	23.0/24.2	-5%	5%	7%
Sp.Cond., mS/cm	3.39/3.24	1.91/1.86	1.86/2.12	2.57/2.40	7%	30%	-11%
DO, mg/L	2.29/3.16	4.50/7.07	3.87/3.88	3.27/4.15	-22%	-4%	-3%
DO, % of Sat.	28/38	51/83	45/47	38/50			
pH	7.76/7.78	7.77/7.99	7.77/7.70	7.71/7.73	-0.2%	2.6%	0.0%
3-day ADF, cfs	2.4/2.5	1.4/2.2	1.3/2.2	1.7/2.3	-24%	-60%	5%
WQ Index	19/22	19/43	19/21	18/24	-26%	-18%	1%
Sept/Aug	E/E	E/C	E/E	E/E+			
Sept/Aug	Poor/ Poor	Poor/ Fair	Poor/ Poor	Poor/ Poor	<b>Index down 6 points from last month</b>		

Negative variance (declines from norms) and DO depletion (DO < 5.0 mg/L or 50% of Sat) expressed in red.

LSDR **water temperatures** declined 1.2oC (-5%) from last month, but remained 5% above last year and 7% above the 20-yr Sept. norm of 21.5oC. The overall **specific conductance** of 2.57 mS/cm constitutes a 7% increase from last month, to 30% greater than last year remaining 11% less than the 20-yr norm of 2.88 mS/cm. The overall **dissolved oxygen** level of 3.27 mg/L (38%Sat.) is 22% less than last month, 4% below last Sept., and 3% less than the 20-yr norm of 3.45 mg/L (39%Sat). **Streamflow** over the antecedent 3-days of 1.75 cfs is 24% less than last month and 60% below a year ago, remaining 5% more than the 20-yr norm of 1.66 cfs. This month's overall LSDR **water quality index** (WQI) of 18(E) is six points below last month and four points less than a year ago at the 20-yr Sept. norm of 16(E).

Monthly WQI values occurring over the past 25 months of RiverWatch record for the three main sections of the lower river system, the overall LSDR average, plus 30-day antecedent average daily streamflow (ADF) and total monthly rainfall (MRF) values, are expressed in **Table 2** on the next page.

<b>Table 2 - WQI Values, Average Daily Flow and Monthly Rainfall (Aug '22 - Sept. '24)</b>							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMR,F,in
Aug.	15 (E)	2 (F-)	8 (F)	10 (F)	DW	0.4	0.00
<b>Sept.'22</b>	<b>8 (F)</b>	<b>11 (F+)</b>	<b>16 (E)</b>	<b>12 (F+)</b>	<b>DW</b>	<b>2.0</b>	<b>0.64</b>
Oct.	9 (F)	3 (F-)	7 (F)	7 (F)	T	0.9	0.03
Nov.	25 (D-)	59 (B)	24 (E+)	32 (D)	WW	17	1.16
Dec. '22	32 (D)	53 (B-)	30 (D)	35 (D)	WW	18	0.93
Jan. '23	49 (C+)	58 (B)	42 (C)	48 (C+)	WW	190	3.48
Feb.	56 (B)	71 (B)	47 (C)	55 (B)	WW	36	2.76
March	58 (B)	57 (B)	52 (B-)	55 (B)	WW	132	4.86
April	52 (B-)	65 (B)	43 (C)	50 (B-)	WW	77	0.54
May	40 (C)	47 (C+)	39 (C)	41 (C)	T	19	0.12
June	33 (D)	59 (B)	33 (D)	37 (D+)	T	18	0.03
July	19 (E)	39 (C-)	23 (E)	24 (E+)	DW	4.9	0.00
Aug	20 (E)	22 (E)	15 (E)	18 (E)	DW	3.1	0.10
<b>Sept '23</b>	<b>17 (E)</b>	<b>35 (D)</b>	<b>22 (E)</b>	<b>22 (E)</b>	<b>T</b>	<b>26</b>	<b>1.75</b>
Oct.	31(D)	34 (D)	21 (E)	28 (D)	DW	4.2	0.01
Nov.	49 (C+)	59 (B)	51 (B-)	53 (B-)	T	28	0.15
Dec. '23	45 (C)	50 (B-)	31 (D)	40 (C)	T	15	0.46
Jan.'24	50(B-)	58 (B)	36 (D)	46 (C)	WW	13	2.07
Feb.	58(B)	64(B)	65(B)	63(B)	WW	202	6.12
March	55(B)	67(B)	48(C+)	55(B)	WW	46	1.62
April	60(B)	61(B)	40(C)	52(B)	WW	62	1.92
May	40 (C)	54 (B-)	32 (D)	39 (C-)	T	16	0.03
June	40 (C)	51 (B-)	30 (D)	38 (C-)	DW	8	0.01
July	27 (D)	44 (C)	26 (D)	29 (D)	DW	4.9	0.00
Aug.	22 (E)	43 (C)	21 (E)	24 (E+)	DW	3.1	0.00
<b>Sept '24</b>	<b>19 (E)</b>	<b>19 (E)</b>	<b>19 (E)</b>	<b>18 (E)</b>	<b>DW</b>	<b>1.7</b>	<b>0.00</b>

The **cover page** of this report presents monthly WQI values and range (high/low) for the Lower San Diego River watershed over the past 20 years. Each year's values are expressed as color-shaded bars; blue (50 or >) A-B/Good, green (38-49) C/Fair, yellow (25-37) D/Marginal, brown (13-24) E/Poor, and pink (12 or <) F/Very Poor. Running average index values for the LSDR (distance weighted averages of all sites) are shown as a heavy black line. Running averages for the consistently highest (best) quality section of the river (Mission Gorge) are shown as a 'blue' line while the consistently lowest (poorest) reach (Upper Santee Basin) is shown in 'red'. The dashed lines represent overall (20-yr) trends. This month's value of 18 is the 14th time in the last 20 years the index has been at grade level E (Poor) for September.

WQI values extending from Sept.'04 thru Sept. '24 are presented in **Chart 1** (next page) together with 12-mo. running averages for each of the five reaches and overall (i.e., LSDR) for the entire lower river system. The current running average WQI of 40 is 22% above the 20-yr norm of 33. The running average low for Sept. of 22 (34% below norm) occurred in 2014. The previous highest running average WQI for Sept. of 41 (23% above norm) occurred in 2004. The greatest decline in water quality this month occurred in the Mission Gorge Section (Sites 8, 9 and 10).

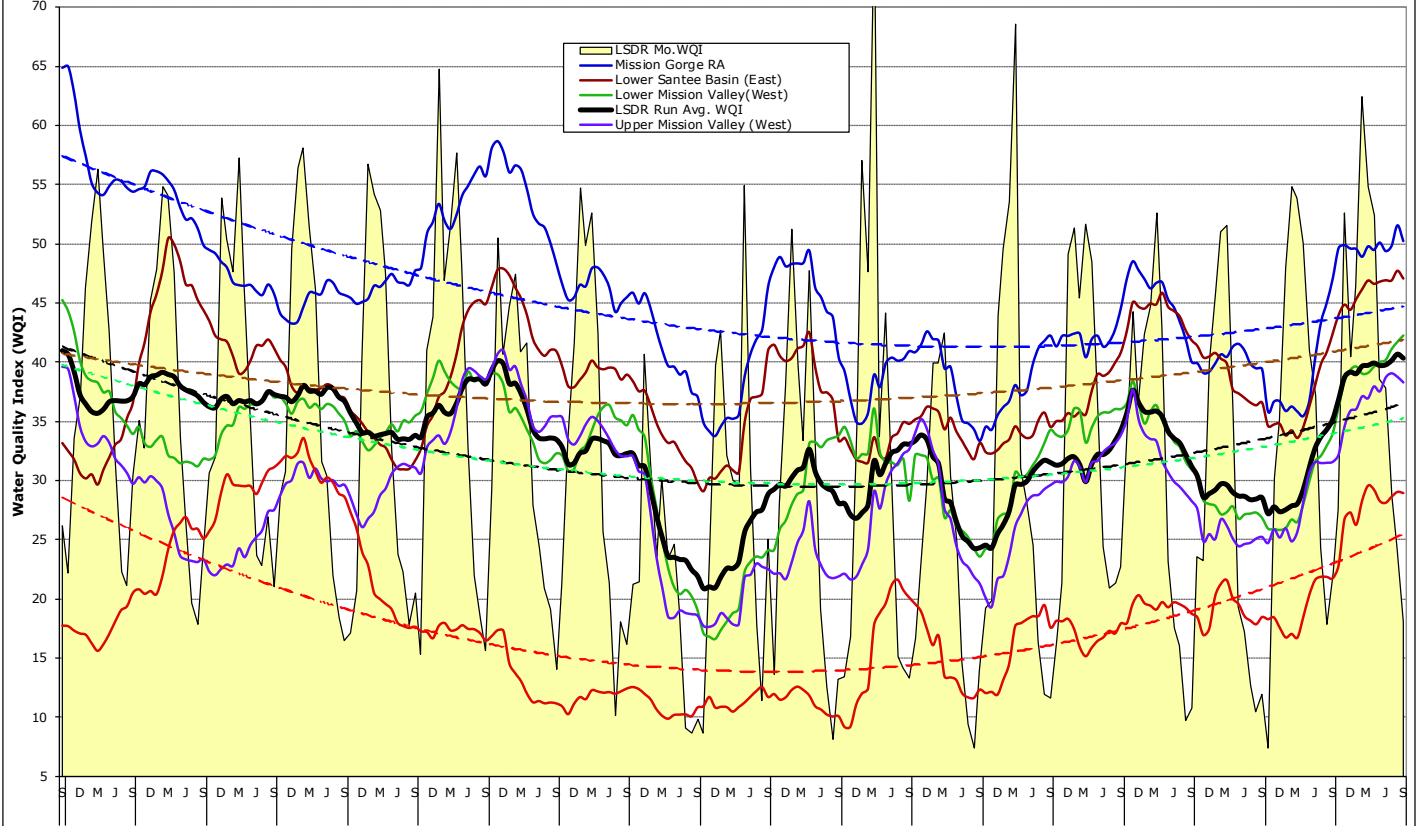
Monthly and 12-mo. running average WQI values for the 'poorest' (Upper Santee Basin) and "best" (Mission Gorge) reaches of the lower watershed are presented in **Chart 2**. Although water quality has measurably improved during much of this past year, resurgent growth of aquatic plants and subsequent decomposition associated with accrual of organics, especially in deeper ponded portions of the river, are considered the basic natural causes of deteriorating water quality. The greatest downward trend (**red-dashed line**) over time is associated with the poorest quality reach (Upper Santee Basin) encompassing Mast Park East (#13E) and Magnolia Ave. (#14) sites. The Mission Gorge (**blue line**) section from Old Mission Dam through Mission Trails continues to demonstrate the least decline in index values over the 20-yr monitoring period. The lowest quality Mission Valley site is located at the outlet from Kaiser Ponds (Site 6) at the San Diego Mission Rd. crossing.

Spatial WQI values determined over the last three months, expressed in order of location upstream, are shown in **Charts 3, 4 and 5** on page 6. This month's results (color bars w/values in black shown on Chart 5) are all below last month. This month 40% of the sites (6 of 15) are VeryPoor(F), five (33%) Poor(E), three (20%) Marginal(D) and only one Good (B). Last month only 20% were Very Poor, 33% Poor, four (27%) Marginal and three (20%) Fair. The highest index value for this month of 52 (B) was at entrance to the estuary (Site 1) while the lowest value of two (F) was monitored at the outlet of Kaiser Ponds (Site 6).

Next month's index values are expected remain comparable to September unless streamflow improves and DO levels increase. October index values typically climb into the Marginal (D) range representing slightly better conditions than experienced this month.

9/15/24 (JCK)

**Chart 1 - LSDR Monthly WQI, Running Averages and Trendlines by River Reach (Sept. 2005 thru Sept 2024)**



**Chart 2 - Mast Park East (Site 13E) and Mission Gorge (Sites 8&10) Monthly WQI, 12-mo Running Averages and 20-yr Trendlines**

