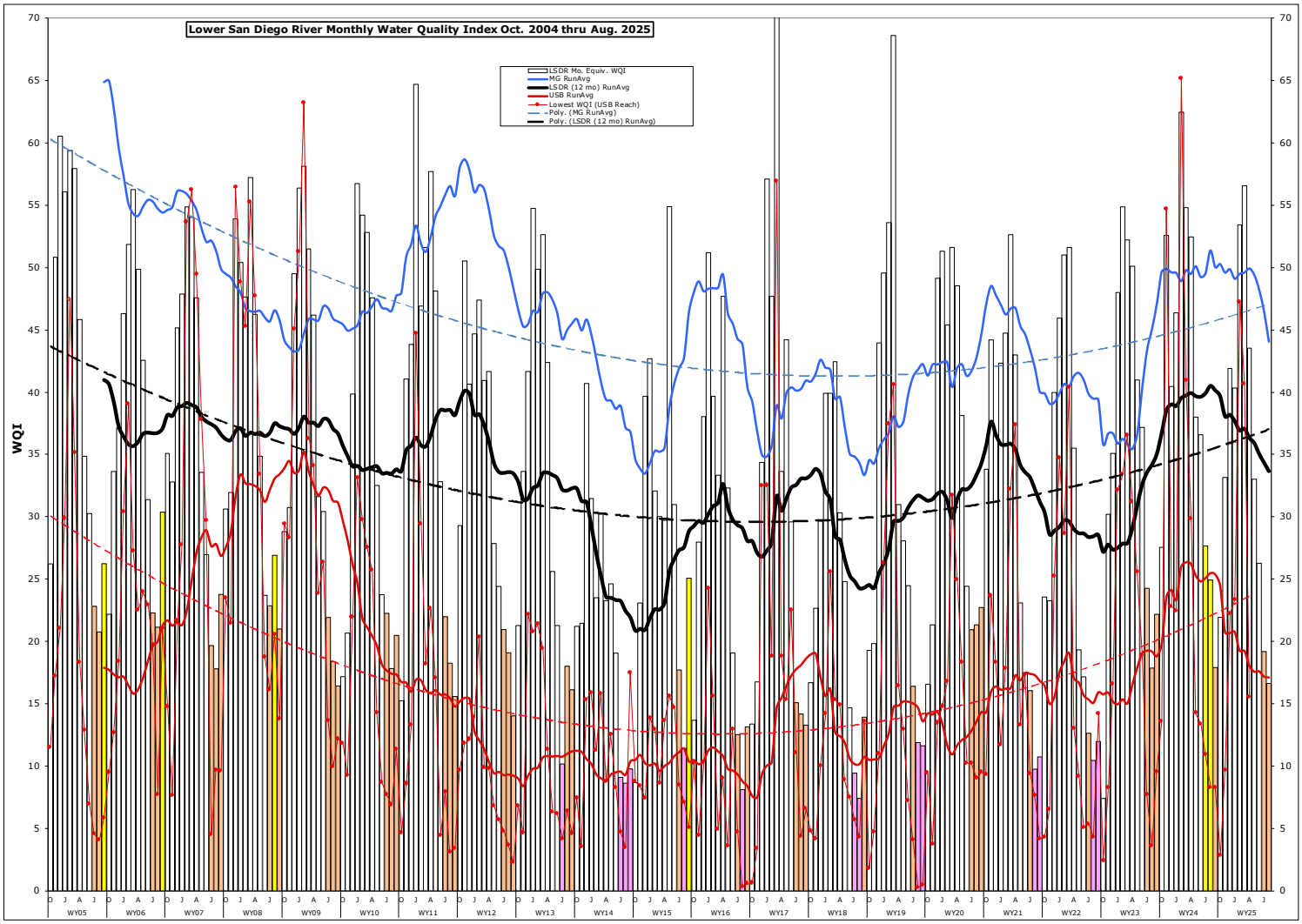
Monthly WQM Report

Lower San Diego River - August 2025



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 past two months. The overall index for August of 17 is down 2 points from last month, at 33% below a year ago and one point (2%) above the 21-yr Aug. norm of 16 (E-Poor).

Table 1 - July'25/Aug.'25 WQM Data Summary							
	West - MV	Mid - MG	East - SB	LSDR	Variance From		
[Site #s]	[1-7] July/Aug	[8-10] July/Aug	[11-15] July/Aug	[1-15] July/Aug	Last Mo. (7/'25)	Last Yr. (8/'24)	21-yr Avg. (Aug.)
Temperature, oC	23.3/23.4	21.4/21.9	22.3/22.4	22.5/22.6	1%	-7%	-3%
Sp.Cond., mS/cm	3.38/3.44	1.95/1.98	2.24/2.23	2.67/2.70	1%	13%	-7%
DO, mg/L	3.06/2.77	4.83/3.88	3.57/3.85	3.48/3.27	-6%	-22%	-4%
DO, % of Sat.	36/33	56/45	42/45	41/38			
pH	7.62/7.59	7.70/7.46	7.65/7.64	7.62/7.62	-0.1%	-1.4%	-1.0%
3-day ADF, cfs	1.9/1.5	1.2/1.2	1.1/1.1	1.5/1.3	-11%	-49%	13%
WQ Index	22/19	22/15	17/18	19/17	-13%	-33%	2%
Letter Grade	E/E	E/E	E/E	E/E			
July/August	Poor/ Poor	Poor/ Poor	Poor/ Poor	Poor/ Poor	**Index down 2 points from last month**		

Negative variance (declines from norms) and DO deficits (DO < 5.0 mg/L or 52% of Sat) expressed in red.

LSDR **water temperatures** rose 0.1oC (1% up) from last month to 7% below last Aug. and 3% less than the 21-yr monthly norm of 23.3 oC. The overall **specific conductance** of 2.70 mS/cm is up 1% above last month, 13% more than a year ago and 7% below the 21-yr norm of 2.90 mS/cm. The overall **dissolved oxygen** level of 3.27 mg/L (38%Sat.) is 6% below last month, 22% less than last Aug. and 4% under the 21-yr norm of 3.42 mg/L (40%Sat). **Streamflow** over the antecedent 3-days of 1.3 cfs is 11% below last month, 49% less than a year ago and 13% above the 21-yr norm of 1.2 cfs. This month's overall LSDR **water quality index** (WQI) of 17 (E Marginal) is 13% (2points) less than last month, 33% below a year ago Aug. and only one point (2%) above the 21-yr norm of 16 (E Poor).

Monthly WQI values occurring over the past two years 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.

Table 2 - WQI Values, Average Daily Flow and Monthly Rainfall (July '23 - Aug. '25)							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMRF,in
July'23	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**
Sept.	17 (E)	35 (D)	22 (E)	22 (E)	T	26	1.75
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.	45 (C)	50 (B-)	31 (D)	40 (C)	T	15	0.46
Jan.	50(B-)	58 (B)	36 (D)	46 (C)	WW	13	2.07
Feb.	58(B)	64(B)	65(B)	62(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-)	31 (D)	38 (C-)	T	16	0.03
June	40 (C)	51 (B-)	30 (D)	38 (C-)	DW	7.6	0.01
July'24	27 (D)	43 (C)	25 (D)	28 (D)	DW	3.8	0.00
Aug.	**22 (E)**	**44 (C)**	**22 (E)**	**25 (E+)**	**DW**	**2.9**	**0.00**
Sept.	18 (E)	19 (E)	20 (E)	18 (E)	DW	1.6	0.01
Oct.	17 (E)	42 (C)	24 (E+)	25 (D-)	DW	1.2	0.01
Nov.	34 (D)	49 (C+)	23 (E+)	33 (D)	T	2.2	0.08
Dec.	45 (C)	53(B-)	33 (D)	42 (C)	DW	3.7	0.05
Jan.	44 (C)	49 (C+)	32 (D)	40 (C)	DW	3.8	0.00
Feb.	49 (C+)	68 (B)	50 (B-)	53 (B-)	WW	27	1.00
March	59 (B)	68 (B)	48 (C+)	57 (B)	WW	55	2.40
April	45 (C)	65 (B)	33 (D)	44 (C)	T	16	0.08
May	38 (C-)	48 (C+)	23 (E+)	33 (D)	DW	6.4	0.2
June	27 (D)	35 (D)	24 (E+)	26 (D-)	DW	3.0	0.00
July'25	22 (E)	22 (E)	17 (E)	19 (E)	DW	1.4	0.00
Aug	**19 (E)**	**15 (E)**	**18 (E)**	**17 (E)**	**DW**	**1.3**	**0.01**

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 (21-yr) trends. This month's overall value of 17 is the 11th time over the last two decades (21 yrs) that the Aug. index has been at grade level E (Poor).

WQI values extending from Sept.'04 thru Aug. '25 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 watershed. The current running average WQI of 33.7 is one point (1.4%) above the long-range norm of 33.2. The running average low for Aug. of 22 (32% below norm) occured in 2014. The previous highest running average WQI for the month of 40.5 (22% above norm) occured last year (2024). All three sections of the lower river exhibited declines in water quality this month compared to last; least decline in the index was monitored in the Mission Gorge section.

Monthly and 12-mo. running average WQI values for the typically 'poorest" (Upper Santee Basin) and typically "best" (Mission Gorge) reaches of the lower watershed are presented in **Chart 2**. Although water quality measurably improved over this past year; low flow and resurgent growth of aquatic plants with subsequent decomposition associated with accrual of organics, especially in deeper ponded portions of the river, are considered the natural causes of declines in water quality. The greatest downward trends (red-dashed line) over time have been associated with the lowest quality reach (Upper Santee Basin) encompasing Mast Park East (#13E) and Magnolia Ave.(#14) sites. The Mission Gorge (blue line) section extending from Old Mission Dam through Mission Trails continues to demonstrate the least flux in index values.

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 bold black shown on Chart 5) are lower than last month (middle bar) at all but 3 sites. Last month one site was Fair(C), 4 Marginal(D), 7 Poor (E) and 4 Very Poor(F). Whereas this month: 0 sites were Fair, 3 Marginal, 8 Poor, and 5 Very Poor. The greatest declines in index values this month are found in the Upper Santee Basin reach. Over the past three months, the index has declined from D- (Low Marginal) to E (Poor) in both July and August.

Index values are expected to remain low over the next several months based on below normal streamflow and DO levels which occur in concert with elevated water temperatures and salinity levels (i.e., SpC/TDS) due to lack of significant precipitation and high evaporatranspiration rates. This summer's (June-August) results are considerably lower than in the previous two water years (WYs 23-24). The watershed as well as all of Southern California is experincing official droubt conditions.
(JCK 10/21/25)

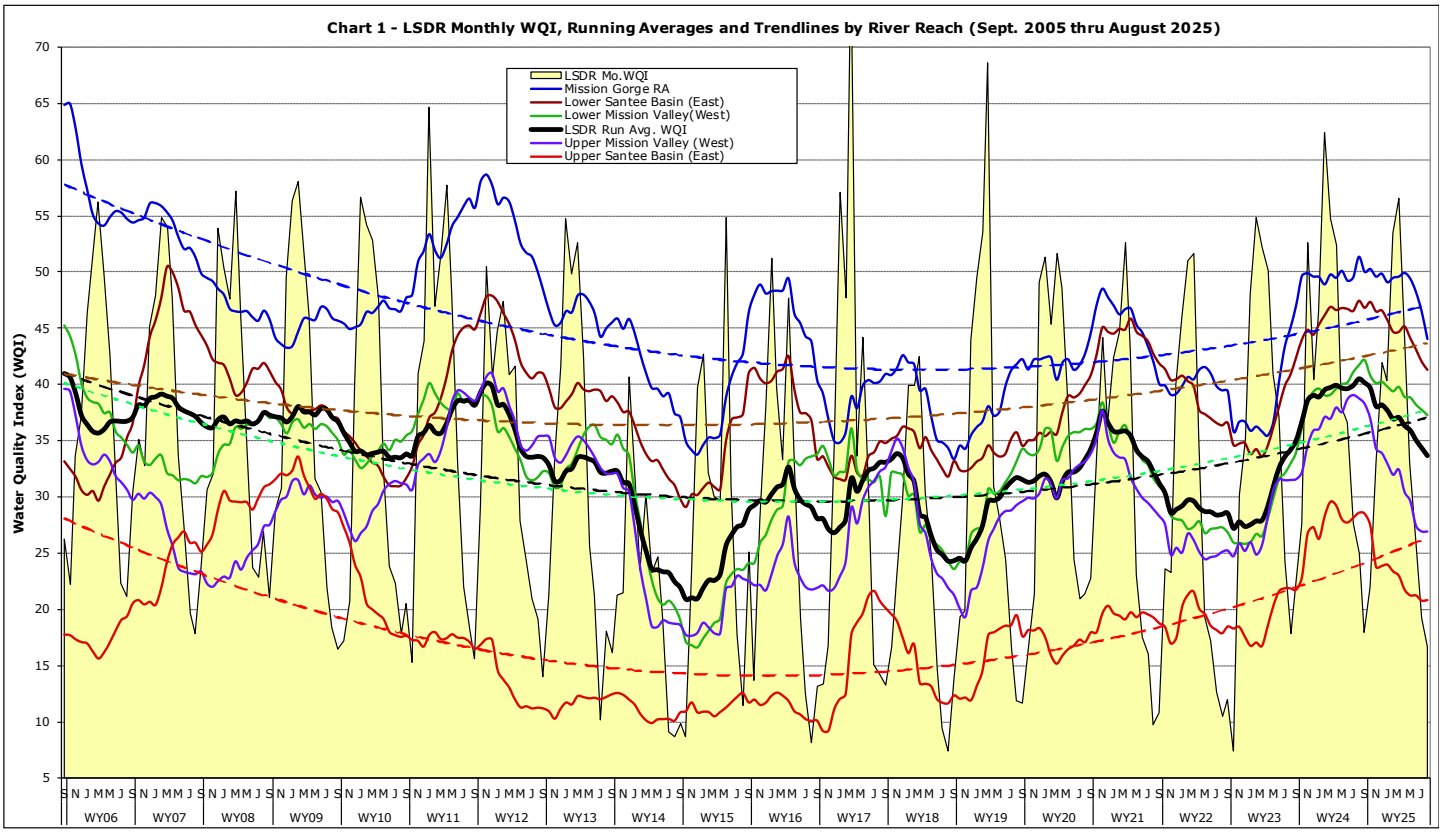


Chart 1 - LSDR Monthly WQI, Running Averages and Trendlines by River Reach (Sept. 2005 thru August 2025)
LSDR Mo.WQI
Mission Gorge RA
Lower Santee Basin (East)
Lower Mission Valley(West)
LSDR Run Avg. WQI
Upper Mission Valley (West)
Upper Santee Basin (East)
Water Quality Index (WQI)
WY06
WY07
WY08
WY09
WY10
WY11
WY12
WY13
WY14
WY15
WY16
WY17
WY18
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WY20
WY21
WY22
WY23
WY24
WY25

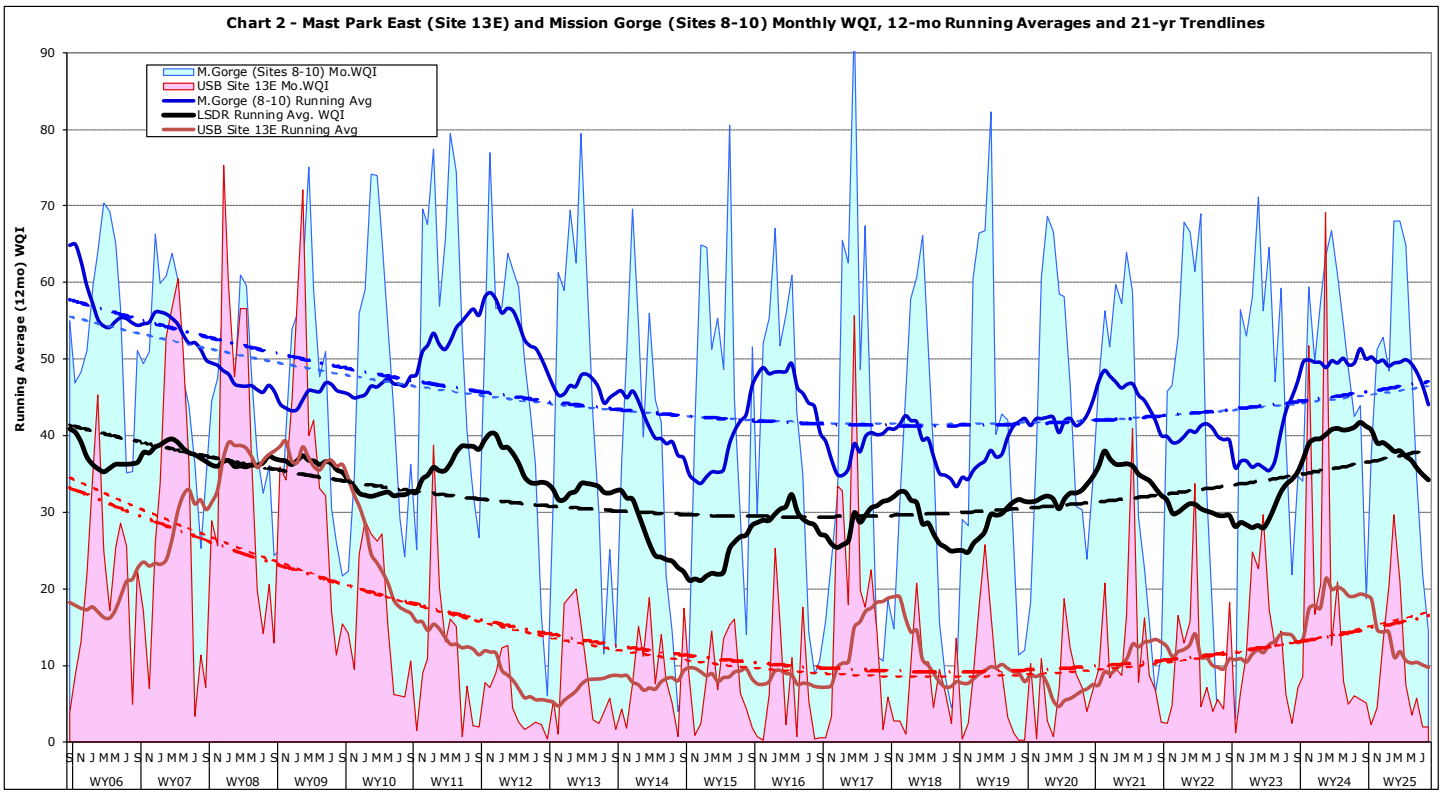
Chart 2 - Mast Park East (Site 13E) and Mission Gorge (Sites 8-10) Monthly WQI, 12-mo Running Averages and 21-yr Trendlines
M.Gorge (Sites 8-10) Mo.WQI
USB Site 13E Mo.WQI
M.Gorge (8-10) Running Avg
LSDR Running Avg. WQI
USB Site 13E Running Avg
Running Average (12mo) WQI
WY06
WY07
WY08
WY09
WY10
WY11
WY12
WY13
WY14
WY15
WY16
WY17
WY18
WY19
WY20
WY21
WY22
WY23
WY24
WY25

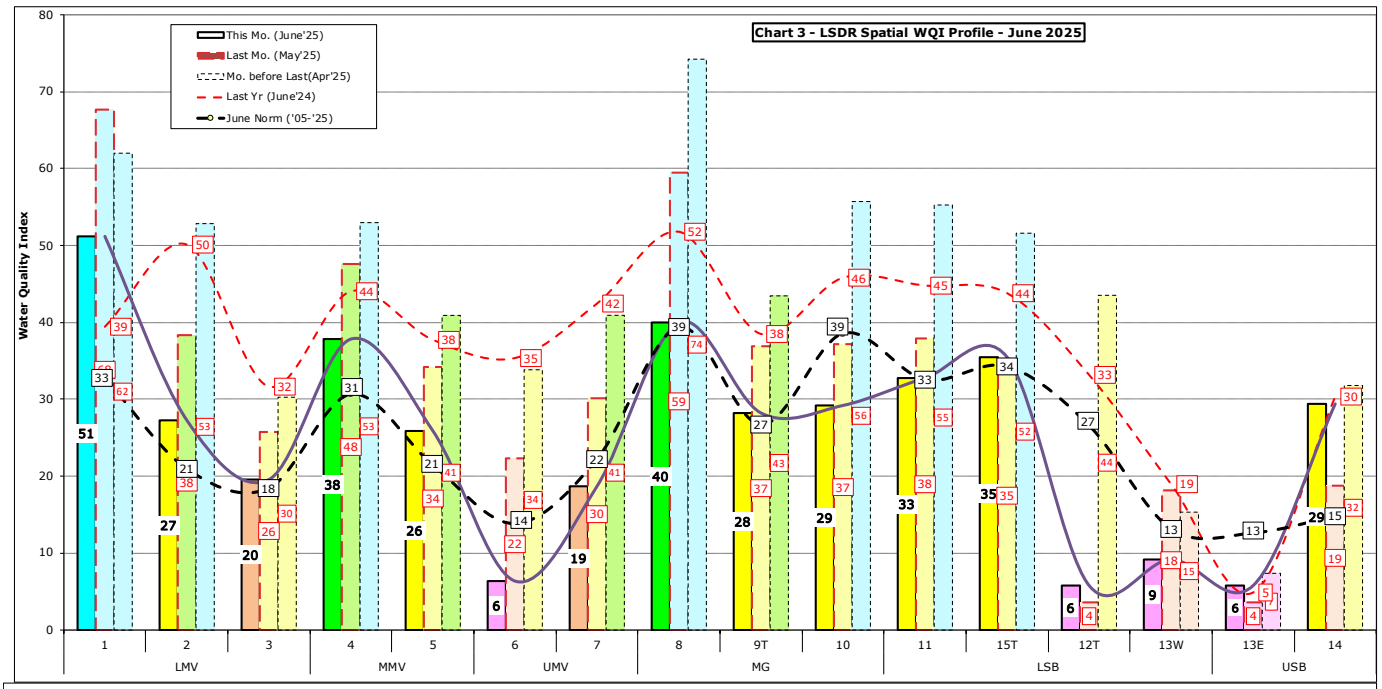
Chart 3 - LSDR Spatial WQI Profile - June 2025
This Mo. (June'25)
Last Mo. (May'25)
Mo. before Last(Apr'25)
Last Yr (June'24)
June Norm ('05-'25)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB

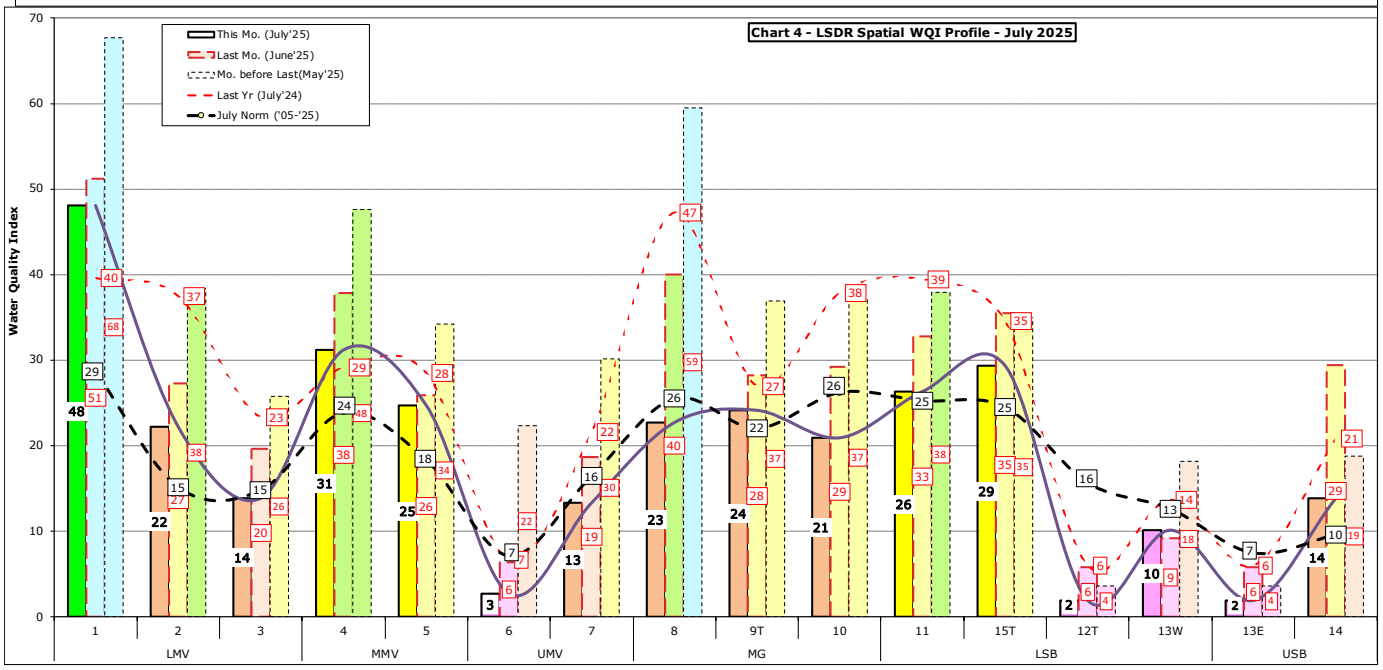
Chart 4 - LSDR Spatial WQI Profile - July 2025
This Mo. (July'25)
Last Mo. (June'25)
Mo. before Last(May'25)
Last Yr (July'24)
July Norm ('05-'25)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB

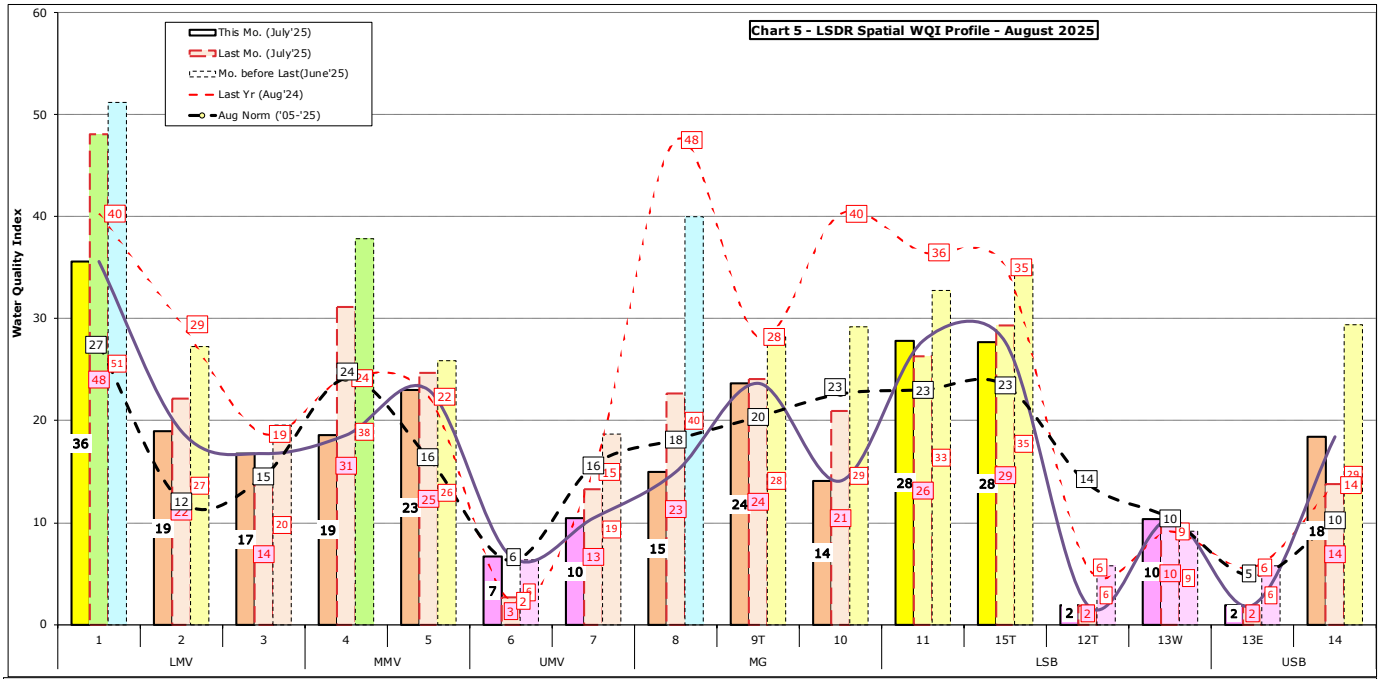
Chart 5 - LSDR Spatial WQI Profile - August 2025
This Mo. (July'25)
Last Mo. (July'25)
Mo. before Last(June'25)
Last Yr (Aug'24)
Aug Norm ('05-'25)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB