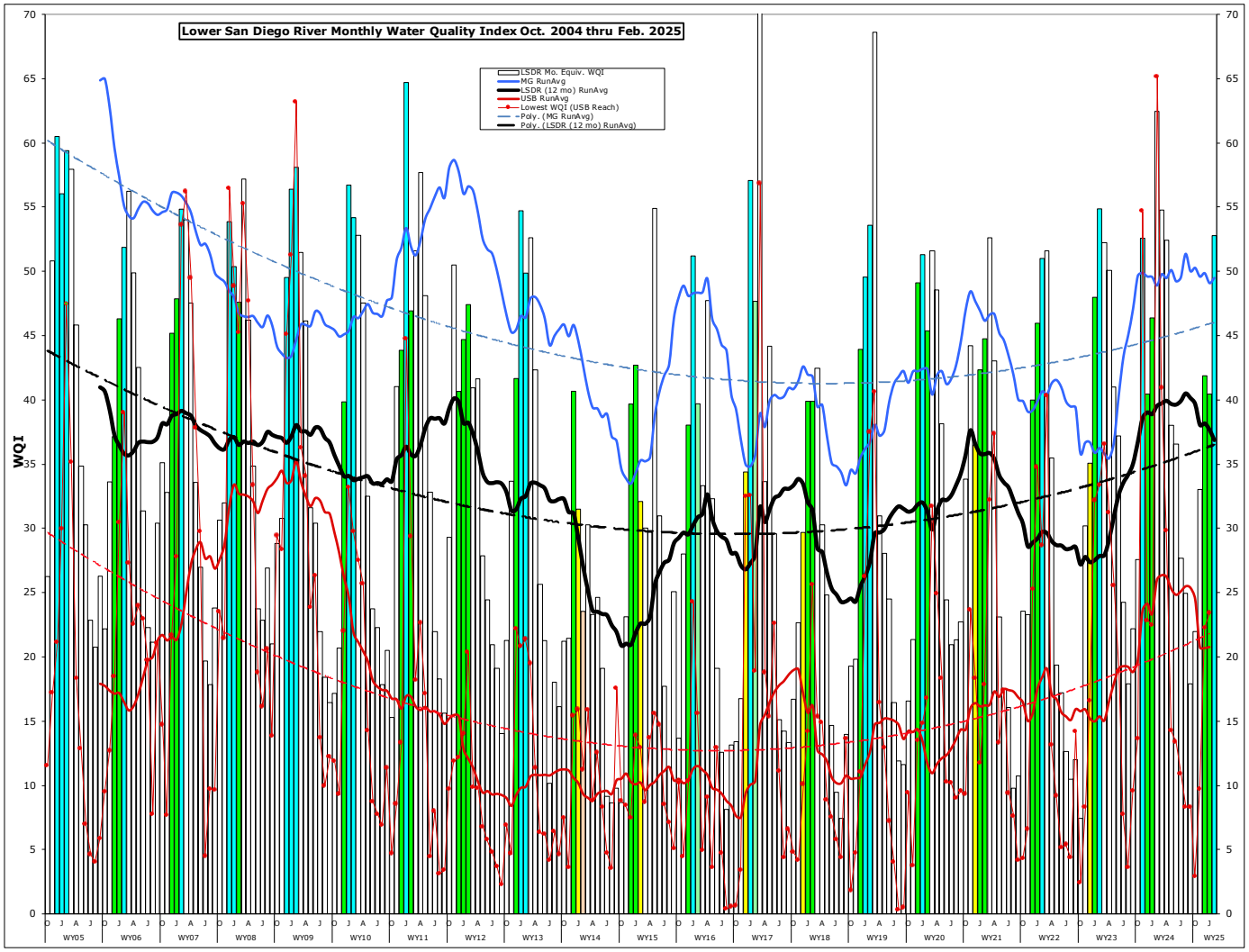
Monthly WQM Report

Lower San Diego River - February 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 last two months. This month's overall index of 53 (B-) is up 13 points from last month, at nine points less than a year ago but five points (10%) above the 21-yr February norm of 48.

Table 1 - Jan.'25/Feb.'25 WQM Data Summary							
	West - MV	Mid - MG	East - SB	LSDR	Variance From		
[Site #s]	[1-7] Jan/Feb	[8-10] Jan/Feb	[11-15] Jan/Feb	[1-15] Jan/Feb	Last Mo. (1/'25)	Last Yr. (2/'24)	21-yr Avg. (Feb)
Temperature, oC	10.2/15.1	7.4/13.4	9.4/14.8	10.5/15.4	57%	5%	6%
Sp.Cond., mS/cm	3.36/1.38	2.01/1.53	2.14/1.71	2.55/1.65	-35%	59%	-2%
DO, mg/L	8.27/6.35	10.9/9.67	6.98/7.92	8.23/7.42	-5%	-8%	4%
DO, % of Sat.	75/63	92/93	61/79	72/73			
pH	7.81/7.52	8.11/8.09	7.68/7.79	7.73/7.63	-1.3%	-0.9%	-2.2%
3-day ADF, cfs	5.7/46	4.4/16	4.2/10	4.8/26	435%	-59%	-55%
WQ Index	44/49	49/68	32/50	40/53	32%	-14%	10%
Jan/Dec	C/C+	C+/B	D/B-	C/B-			
Jan/Dec	Fair/ Fair	Fair/ Good	Marginal/ Good	Fair/ Good	**Index up 13 points from last month**		

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

LSDR **water temperatures** rose 4.9oC (57%) from last month to 0.7oC above last Feb. and 0.9oC greater than the 21-yr norm of 13.7oC. The overall **specific conductance** of 1.65 mS/cm is 35% less than last month remaining 59% greater than last Feb. but 2% below the 20-yr norm of 1.68 mS/cm. The overall **dissolved oxygen** level of 7.42 mg/L (73%Sat.) is 5% less than last month, 8% less than last Feb. but 4% above the 21-yr norm of 7.24 mg/L (69%Sat). **Streamflow** over the antecedent 3-days of 26 cfs is 435% more than last month but remains 59% lass than a year ago and 55% below the 21-yr norm of 58 cfs. This month's overall LSDR **water quality index** (WQI) of 53 (B-) is 32% greater than last month, 9 points (-14%) below last Feb. and 5 points above the 21-yr norm of 48 (C+).

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 (Jab. '23 - Feb. '25)							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMRF,in
Jan. '23	49 (C+)	58 (B)	42 (C)	48 (C+)	WW	190	3.48
Feb. 23	**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
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.'24	50(B-)	58 (B)	36 (D)	46 (C)	WW	13	2.07
Feb. 24	**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	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.25	44 (C)	49 (C+)	32 (D)	40 (C)	DW	3.8	0.00
Feb. 25	**49 (C+)**	**68 (B)**	**50 (B-)**	**53 (B-)**	**WW**	**24**	**1.00**

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 value of 53 is the 11th time over the last two decades that the index has reached grade level B (Good).

WQI values extending from Sept.'04 thru Feb. '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 36.9 is 11% above the norm of 33.2. The running average low for Feb. of 23 (32% below norm) occured in 2015. The previous highest running average WQI for the month of 38.2 (15% above norm) occured in 2012. Two of the three sections of the lower reiver showed improvements in water quality this month compared to last, while slight declines in index values were found in the Mission Vally section.

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 localized poor 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 from Old Mission Dam through Mission Trails continues to demonstrate the least flux in index values over the monitoring period.

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 greater than last month at 12 out of 16 sites. This month only two sites are Marginal(D), six Fair (C) and remaining eight Good(B). Last month one was Poor, five Marginal(D), seven Fair('C) and only three Good(B). The December 2024 index values were also very similar to last month. The greatest increase in index values in February occur in the Santee Basin and Mission Gorge sections of the lower river system.

Index values over the next and last month of winter are expected to remain in the same general range of Good based on increased average daily streamflow, elevated DO levels, average water temps and slightlty lower Specific Conductance values (i.e., less dissolved solids). March water quality index values are commonly found in the C to B range based on rainfall. Streamflow can be expeced to rise with the arrival of more wet weather. In contrast, measurable increases in lower river water quality index values are not anticipated should there be little or no precipition in March. The probability of more storms over the next 30 or so days, however, is quite high.

(JCK) 2/24/25

Chart 1 - LSDR Monthly WQI, Running Averages and Trendlines by River Reach (Sept. 2005 thru Feb. 2025)

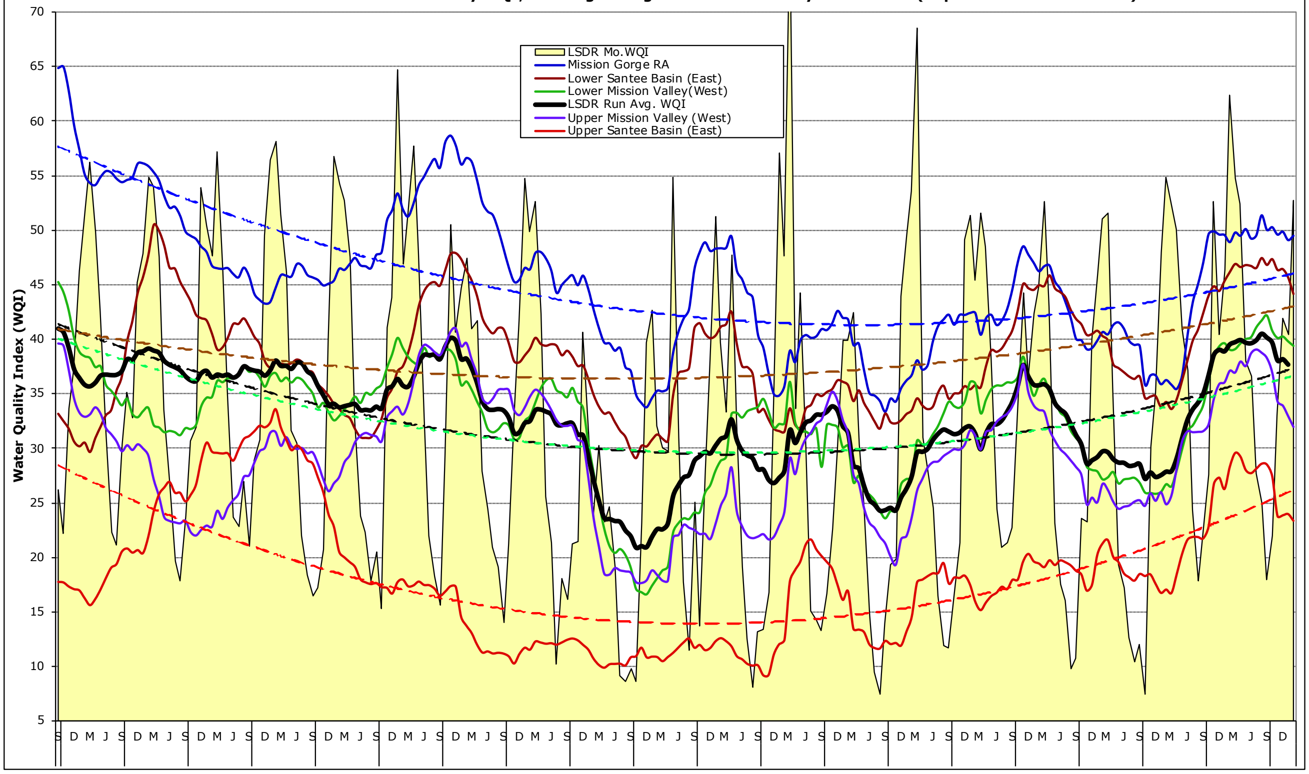
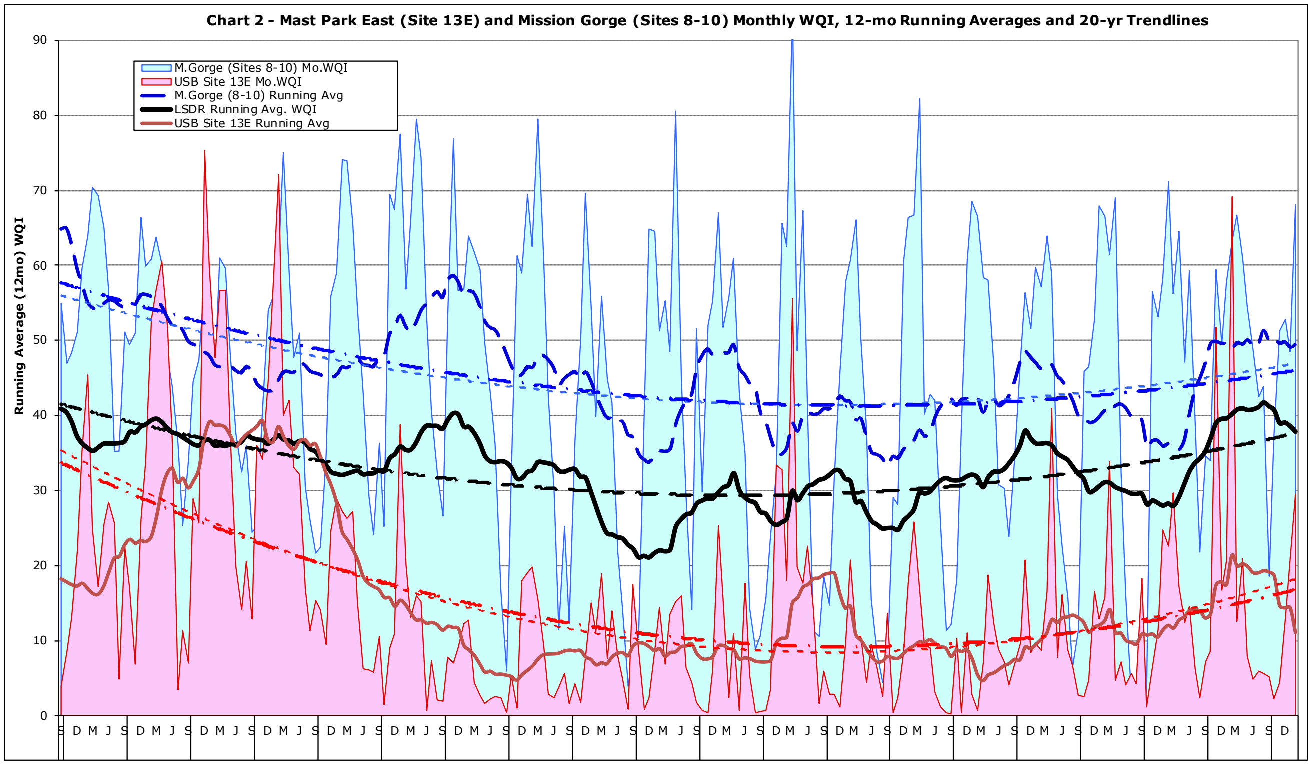


Chart 2 - Mast Park East (Site 13E) and Mission Gorge (Sites 8-10) Monthly WQI, 12-mo Running Averages and 20-yr Trendlines



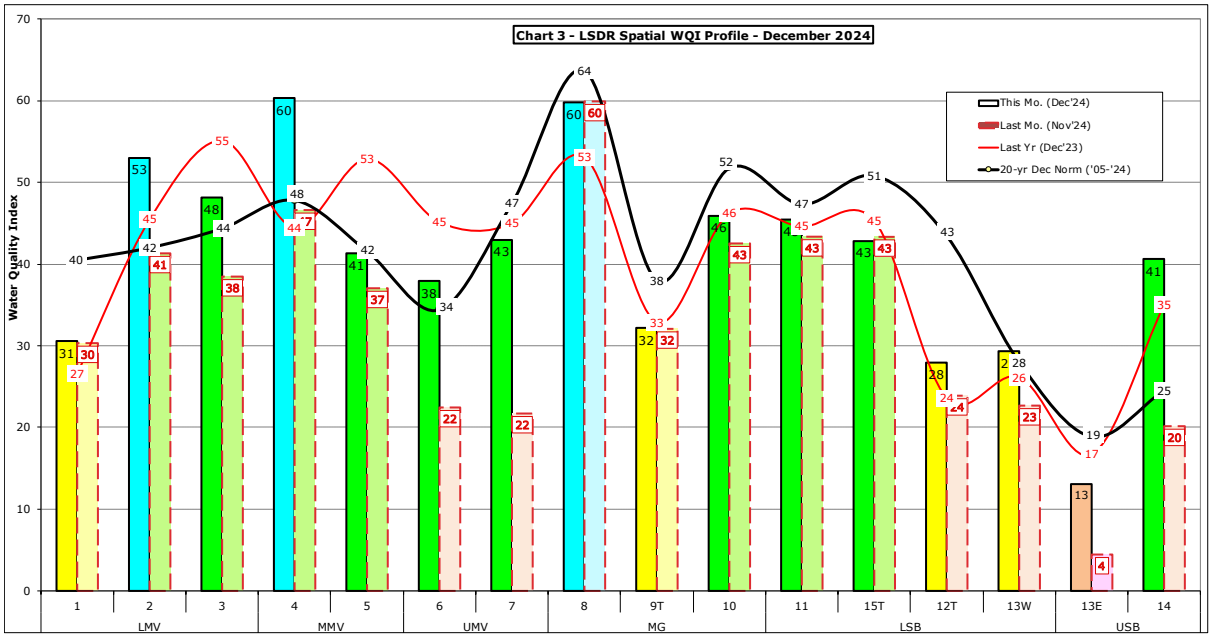


Chart 3 - LSDR Spatial WQI Profile - December 2024
Water Quality Index
This Mo. (Dec'24)
Last Mo. (Nov'24)
Last Yr (Dec'23)
20-yr Dec Norm ('05-'24)
1 2 3 4 5 6 7 8 9T 10 11 15T 12T 13W 13E 14
LMV MMV UMV MG LSB USB

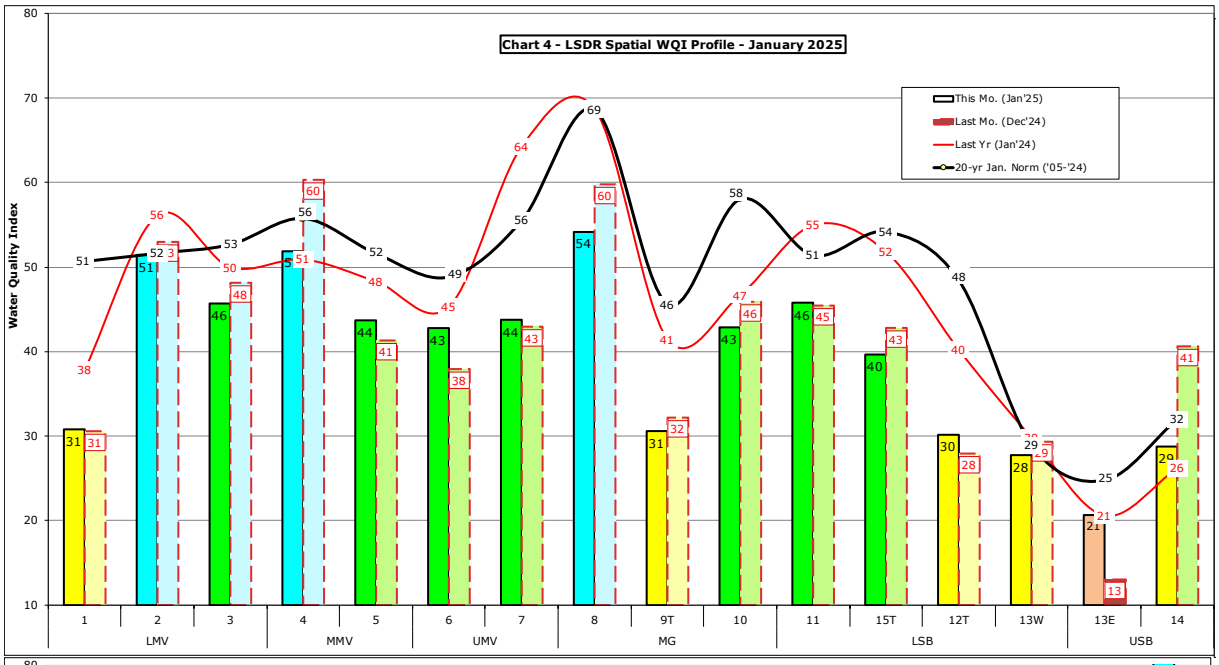


Chart 4 - LSDR Spatial WQI Profile - January 2025
Water Quality Index
This Mo. (Jan'25)
Last Mo. (Dec'24)
Last Yr (Jan'24)
20-yr Jan. Norm ('05-'24)
1 2 3 4 5 6 7 8 9T 10 11 15T 12T 13W 13E 14
LMV MMV UMV MG LSB USB

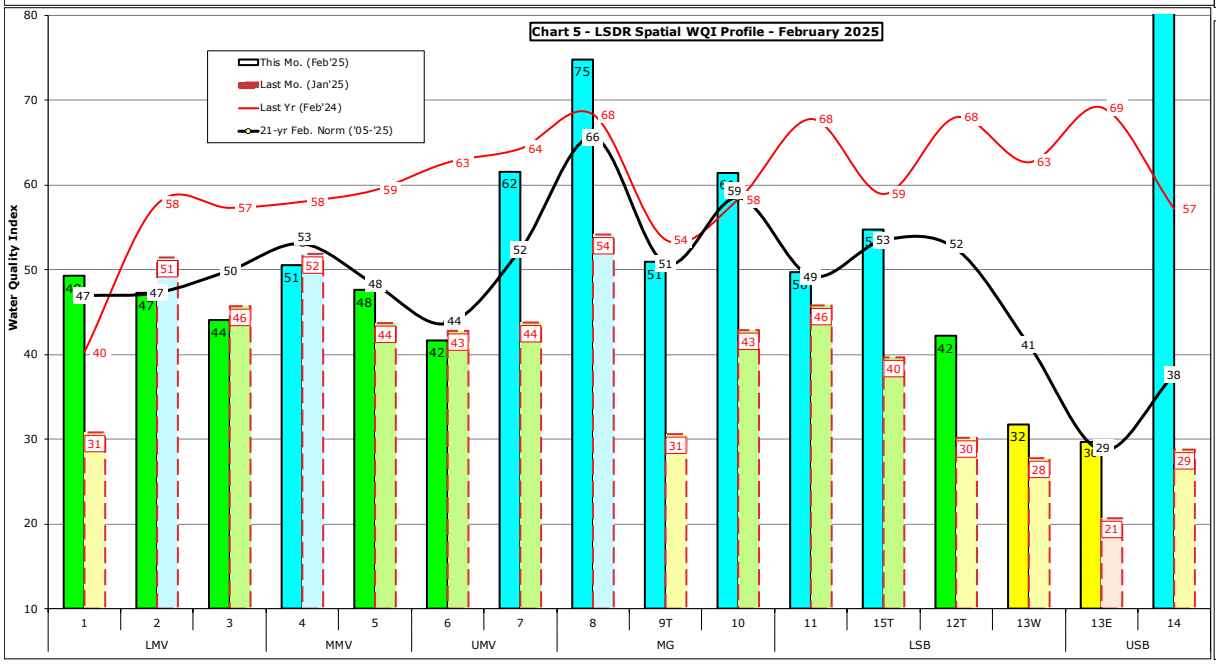


Chart 5 - LSDR Spatial WQI Profile - February 2025
Water Quality Index
This Mo. (Feb'25)
Last Mo. (Jan'25)
Last Yr (Feb'24)
21-yr Feb. Norm ('05-'25)
1 2 3 4 5 6 7 8 9T 10 11 15T 12T 13W 13E 14
LMV MMV UMV MG LSB USB