

2019-2020 Lake Elsinore Canyon Lake Annual Nutrient TMDL Report Comment Response Matrix

Commentor	Affiliation	Report Element	Comment	Response
LESJWA staff	LESJWA	Various	Universal add text... San Jacinto River Watershed (we identified the following: TOC (3 instances), page 14 figure 2-1, page 20 2.7 section header, page 21 2.8 section header)	Changes made, except for the map that was created by SAWPA. We can't make changes to the map, either SAWPA to update or for NV5 to create a new one.
LESJWA staff	LESJWA	1.1	Page 7 – add text... While being a natural lake, the lake has been modified in various ways to enhance its recreational use and aquatic habitat, including creation of a levee at the lake's south end to increase the water depth / reduce evaporation, in-lake aeration and mixing system (LEAMS), and water in the lake is supplemented with approximately 6 million gallons per day of recycled water from Elsinore Valley Municipal Water District (EVMWD).	Changes made
LESJWA staff	LESJWA	1.1	Page 8 – edit text... Lake Elsinore and San Jacinto Watersheds Authority	Changes made
Abigail Suter	RCFC&WCD	Figure 2-1	Could the location of Mystic Lake (when present) be shown on this figure as well?-	The map was created by SAWPA. We can't make changes to the map, either SAWPA to update or for NV5 to create a new one.
Abigail Suter	RCFC&WCD	various	Some tables show NDs as ½ the MDL and some tables say they are converted to zeros.	When a concentration was non-detect, the annual average value for compliance purposes was calculated by converting non-detect (ND) values to zero. If the result of the calculated mean was non-zero but below the corresponding MDL, the average value was reported as ND. This was correctly reported in the lake monitoring section, but not the watershed section. The corrections have been made.
Abigail Suter	RCFC&WCD	2.5	As this is the main page for all the USGS gauges it would be helpful to explain to the reader that this is where you can look up specific gauge numbers which are presented in the below table.	Changes made
Abigail Suter	RCFC&WCD	2.5	Define that this is the USGS gauge number that can be used to look up data in the above link	Changes made
Abigail Suter	RCFC&WCD	2.8.1	I'm curious, is there any sort of weighting given to one storm over another? First flush, larger rainfall, longer rainstorm? Or is this just a straight average of the three concentrations?	Average and geomean are provided
Abigail Suter	RCFC&WCD	2.8.2	Three?	Changed to three
Abigail Suter	Tess Dunham	Table 2-3	Can we update Table 2-3 to include the first 6 months of 2011 like we did with the 2018-2019 report?	Changes made
SARWQCB	SARWQCB	Table 2-1	Is the nature of the local flows described elsewhere in the report?	Provided in Section 2.8.3
SARWQCB	SARWQCB	Table 2-1	It might be good to provide the gallon to L conversion, given that flow and concentration was provided in gal and mg/L and load in kg.	Changes made
SARWQCB	SARWQCB	Table 2-1	Have these other sources ever been monitored/characterized?	No and it is not currently part of this project
SARWQCB	SARWQCB	Section 2.3	Correct citation?	Yes
SARWQCB	SARWQCB	Section 2.3	A brief reminder of how average was calculated would be helpful.	Provided in other sections, The event loads were calculated as the product of the event concentrations and the storm volumes for each storm event. The annual loads were calculated as the sum of the three monitored event loads and the storm events where no sampling occurred, which are the product of the storm volumes for the storm events not monitored and the annual mean concentrations.
SARWQCB	SARWQCB	Section 2.3	Based on registered flow at the gages nearby? Were dry weather flow excluded from the calculation?	Based on the USGS gauges. In general, the monitoring locations only flow during storm events and the storm flows account for the estimated annual load of nutrients.
SARWQCB	SARWQCB	Section 2.4	Is this site the same as "San Jacinto River near Elsinore (1107500)" (i.e. the station used in draft TMDL Revision Technical Report) approximately 2 miles downstream from the CL spillway? If so, it would be helpful to be explicitly about what "local watershed" means and that some of the local watershed is covered?	Yes, there is a small drainage area that drains to the same gauge, which I believe is Cottonwood Canyon.
SARWQCB	SARWQCB	Table 2-5	Some description of what local flows were would be helpful	Provided in Section 2.8.3
SARWQCB	SARWQCB	Section 2.8	Or three? Were water quality sample collected from the upper watershed station?	Section 2.8.3 is the fourth station, but no samples were collected.
SARWQCB	SARWQCB	Table 2-8	Interesting that SRP differed so much among events. Murrieta Rd station did not seem to show this pattern. Any insight?	There were no qualifiers. Maybe first flush was different compared to the later events as the year progressed.
SARWQCB	SARWQCB	Table 2-10	These were much lower than TP in inflows into CL. Perhaps some discussion is provided below? TSS settled down (also note the much lower TSS compared to inflows into CL)? Dilution of inflow by higher quality in-lake water?	It is likely that the regular alum applications in Canyon Lake are sequestering some of the TP coming in from upstream of Canyon Lake. It could also be that Canyon Lake serves as a depositional area for fine particulates which account for a certain percentage of the TP.

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SARWQCB	SARWQCB	Section 2.8.4	If applicable, perhaps provide a footnote on the valve testing at the Dam impacting the hydrograph?	Changes made
SARWQCB	SARWQCB	Section 2.9	Would it be possible to provide a map of the location of these rain gauges?	provided in Figure 2-1
SARWQCB	SARWQCB	Table 2-13	How does this compare to past years?	Can be found in the previous annual reports.
Steven Wolosoff	CDM Smith	Section 3.4 General Satellite Imagery- CL	The color ramp on Canyon Lake satellite imagery could be adjusted to allow for more bins less than ~50 ug/L. Also, is it possible to always use the finer resolution data?	Noted. We cannot use the higher resolution (10-meter pixels) Sentinel satellite during the summer months, as there is a reflection due to the angle of the sun directly into the satellite's sensor causing QA concerns. Unfortunately there is not much we can do about this other than using the lower resolution (30-m pixels) Landsat satellite
Steven Wolosoff	CDM Smith	Section 3.4 Satellite Imagery- LE	The pattern in Lake Elsinore in August, September suggest the LEAMS diffusion lines influence chl-a during the period of operation. For some reason, it seems that the same regions that are relatively lower in chl-a in August (dark blue) are higher in chl-a in September (dark red)	Comment noted. Given the resolution, it's hard to tell from the images what is the aeration lines vs areas in between the aeration lines. It is possible that the aeration lines are pulling up bottom water with lower concentrations of CHL to the surface causing water appears to be alternating low and high values.
Steven Wolosoff	CDM Smith	Section 3.4 Satellite Imagery/CDFs- LE	The CDFs show very poor agreement between Lake Elsinore samples and satellite imagery. Actual measurements seem to land at extremes. At one point in time, the intent was to use remote sensing for assessing compliance and it doesn't seem promising to make that case. It seems the image analysis actually produces limited spatial variability (steeper slope of CDFs). Maybe if they create separate algorithms for periods when samples suggest conditions are high (>50 ug/L) versus low (<50 ug/L). But then I wonder- what's the point.	You are correct. We have seen that once the concentrations of CHL get very high, near or >100ug/L, the in-lake concentrations and satellite estimated CHL values tend to diverge.
Richard Boon	RCFC&WCD	Table 3-17 (pg 74)	Footnote#1 in Table 3-17 states: "1 – 2020 TMDL Target, based on Table 5-9n of 2004 TMDL. The range of TMDL target thresholds apply to individual samples, not applicable to annual means. See quarterly reports." Table 5-9n of the 2004 TMDL states the final targets for Total P, Total N and Chlorophyll a in Canyon lake as: "Annual Average no greater than...." What enables the highlighted statement above?	This was a mistake. The highlighted text should only apply to un-ionized ammonia. Revised.
NA	SARWQCB	Section 3.2.1, Table 3-2.	Sampling in Lake Elsinore was conducted monthly during summer months (June-September) and bi-monthly (i.e., every other month) for the remainder of the monitoring year, for a total of 8 sampling events per year.	Revised
NA	SARWQCB	Section 3.2.2	Approximately what time?	Revised. ~0700-0900 regarding morning Secchi depth readings
NA	SARWQCB	Section 3.2.3	Were the morning and end-of-day measurements similar?	Addressed, added values for reference.
NA	SARWQCB	Section 3.2.3	The 12-month rolling mean water column DO concentration for all events at Site LE02 was at or above the 2015 TMDL target of 5.0 mg/L (Figure 3-2).	Revised
NA	SARWQCB	Section 3.2.3, Figure 3-3	A brief discussion of the 0 DO conditions in June would be helpful – what led to this condition?	Addressed.
NA	SARWQCB	Section 3.2.3	Thank you for these comparisons! Very nice to have.	No revision necessary :)
NA	SARWQCB	Section 3.2.3	What is the rolling average window?	This is explained in the figure titles, but also added it in the text (page 51). The total phosphorus rolling average concentration exceeded the current 2020 TMDL target of 0.1 mg/L for each event, ranging from 0.13 to 0.18 mg/L (Figure 3-9).
NA	SARWQCB	Section 3.2.3, Figure 3-8	Why the sudden spike of total ammonia in December?	We have checked the QA/QC again and communicated with the laboratory, and this does appear to be a real value (i.e. not anomalous). There are several explanations for this which have been added to the text.
NA	SARWQCB	Section 3.3.2	Was there any?	Slight variation. End-of-the-day water column profiles (i.e., after ~2:00pm) were also recorded for the same suite of parameters at all stations to assess any potential temporal variability in these parameters over the course of a day.)

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AS	RCFCD	General	<p>A Leading Concern: It was discussed in the Task Force meeting that compliance was expected for the 2020 limits and that a TSO wouldn't be needed. The concentrations and analysis in this annual report appear to dispute this fact as none of the metrics appear to be meeting their goals.</p> <p>Review for consistency: •The method listed for total nitrogen switches from NA to Depth Integrated back and forth several times throughout the report. •Some tables show NDs as ½ the MDL and some tables say they are converted to zeros.</p> <p>Appendices: In the PDF compiled the fly sheets are missing in order to separate the various appendices. The Bookmarks are very inconsistent with some appendices having many links and some none at all. Also, the report bookmarks come after all the appendix bookmarks.</p>	Revised appendices.
AS	RCFCD	Section 3.2.1, Table 3-2.	If all the components of the calculation are depth integrated wouldn't their product be as well? -AS	Revised
GT	RCFCD	Section 3.2.2 General	Could be useful to note standard readings for LE. (e.g. secchi disk reading typically...)-GT	Revised. Also included column in Tables 3-5 and 3-14 with previous years monitoring data for comparative purposes.
GT	RCFCD	Section 3.2.3	Each table is for a different year, that is not made clear.	Revised. in response to Tables 3-3 and 3-4
AS	RCFCD	Section 3.2.3, Table 3-3, 3-4	Is there a reason Table 3-3 is separate from Table 3-4, aren't they the same info? If you are going to split it up like this than technically this is the 2019 monthly means and Table 3-4 is the 2020 monthly means. -AS	Revised
AS	RCFCD	Section 3.2.3, Table 3-3, 3-4	For consideration, having ph strips as a back-up in the field is an easy precaution to take. -AS	Noted.
AS	RCFCD	Section 3.2.3	Please rephrase as it's the lake that is de-stratifying not the DO concentration.	Rephrased. In September, the dissolved oxygen concentrations in the lake began to de-stratify and were fully de-stratified during the October and December events)
GT	RCFCD	Section 3.2.3	Can this be more specific? Based on sentence: "Both surface and depth-integrated chlorophyll-a concentrations exhibited a general increase across the summer and early fall months, followed by a sharp decrease in December 2019 (Figure 3-10)." "	Revised to include specific values.
AS	RCFCD	Section 3.2.3, Table 3-6	Why do you use the non-detect values at zero here when earlier in the report you specified non-detect using ½ the detection limit? If ND=0 is being used for 2020 compliance why do you show in the earlier data the loading using ½ the MDL? Also this note is stating you convert ND's to zero for the annual average but the table is showing the ND's not 0. Should the last column have 0 instead?	Clarified in this section. Alta to revise calculations using 0 for ND values for loading calculations.
AS	RCFCD	Section 3.2.3, Table 3-6, footnote d	d - Sample was destroyed during laboratory preparation, no analysis was possible.	Revised
AS	RCFCD	Section 3.2.3, Table 3-6, footnotes	µg/L – micrograms per liter; mg/L – milligrams per liter; MDL – method detection limit; RL – reporting limit; J - Reported value is an estimate as detection was above the MDL, but below the RL	Revised
AS	RCFCD	Section 3.2.3, Table 3-6, footnotes	Not every reader will know what this means to the data I think it's good to clearly state this. -AS (in response to above edits)	Noted.
AS	RCFCD	Section 3.2.3, Table 3-6, footnotes	Not in table, double check notes are all applicable. -AS (in response to SG footnote)	Removed from all applicable tables.
AS	RCFCD	Section 3.2.3, Table 3-6, footnotes	What does this mean for the data accuracy? Was recovery high or low? Also why is this letter capitalized when a-e are lower case? -AS (in response to F qualifier)	The letter is capitalized because it is a qualifier, not a footnote. Sample recoveries were low, elaborated on description.
AS	RCFCD	Section 3.2.3, Table 3-7	I can't make a comment in the table, but here it is correctly noted that Total Nitrogen results are depth integrated when prior tables used N/A. I think this way is correct as all results used in calculation are DI.	Noted.
AS	RCFCD	Section 3.2.3, Table 3-7, footnotes	I'm confused as to why these notes for b and c are on the Basin Plan column numbers. Can you double check or clarify these notes?	This column also refers to TMDL targets. the TMDL target is based on an annual average (TN, TP) and summer average for CHL

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AS	RCFCD	Section 3.2.3, Figure 3-9	I'm curious as to why this number was chosen? Isn't 5 events more typical for obtaining geomeans?	Calculated based on TMDL targets, which are annual averages (i.e., eight events for Lake Elsinore).
AS	RCFCD	Section 3.2.3, Table 3-9	Please check consistency throughout the document. The method for TN keeps flipping from NA to DI. If all results used in calculation are DI wouldn't the result be as well?	Revised
AS	RCFCD	Section 3.3.3 (pg 62)	Should this say current 2020 target? Or prior 2015 target?	Revised
AS	RCFCD	Section 3.3.3, Table 3-15	And we are back to total nitrogen being depth integrated. Am I missing a distinction between these various total nitrogen results?	Kept as DI.
AS	RCFCD	Section 3.3.3, Table 3-16	Doesn't appear to be in this table. (in response to SG footnote)	Revised
GT	RCFCD	Section 3.4, page 80	A dissect image would be helpful	The satellite image only provides a 2-D image of the surface of the lake providing a good depiction of the lateral spatial variability of algae throughout the lake. It does not provide meter by meter "slices" of the water column with associated CHL values. It is well known however, that some algae, especially cyanobacteria can adjust their buoyancy and tend to congregate near the surface during that daylight hours.
AS	RCFCD	Section 3.4, page 81	Discussions and sharing of this data with EOMaps (the satellite data vendor) will continue to enhance model predictions and assess whether there may be other confounding factors (including dependency on turbidity) that are not accurately accounted for in this lake.	Noted.
AS	RCFCD	Section 3.4, page 81	It is also possible, that the discrepancy in satellite chlorophyll-a concentrations relative to in-lake concentrations is due to a difference in the depth being analyzed.	Revised
AS	RCFCD	Section 3.4, page 81	In-lake "surface" analytical samples that satellite values are being compared to are collected as a composite of the top 2 -meters of the water column, while the satellite imagery only analyzes approximately one-half of that depth or the top 3 -feet-meter of the water column, and possibly less dependent upon turbidity.	Revised.
AS	RCFCD	Section 3.4, page 81	As you are comparing it is better to keep the unit consistent. Please rephrase for clarity.	Revised
AS	RCFCD	Section 3.4, page 81	What is the reason the in-lake monitoring samples the top 2 meters instead of matching the satellite looking at just the top meter?	For consistency, this was meant to correspond with the prior 2007-2012 monitoring methods.
AS	RCFCD	Section 3.4, Figure 3-20	You have to zoom all the way in to read the legend. Could this figure be merged and show one larger legend? It looks like the colors stay consistent thru the year. (typical for all satellite figures)	Revised
AS	RCFCD	Section 3.4, Figure 3-22	Figure 3-22 (cont.).	Revised.
AS	RCFCD	Section 3.4, page 81	Figure 3-23 (cont.).	Revised.