

Attachment 6. Appendix I – Evaluation of LMUN Water Quality Objectives Options

APPENDIX I—EVALUATION OF LMUN WATER QUALITY OBJECTIVE OPTIONS

Water Quality Objective options are evaluated based on their ability to meet the following selection criteria:

1. Maintain consistency with federal and state water quality laws and policies as applicable (e.g. Sources of Drinking Water Policy, Anti-degradation Policy)
2. Provide the appropriate protection of MUN in an Ag dominated surface water body with consideration given to the current and potential future uses
3. Allow constructed Ag dominated water bodies to be utilized for their intended design and purpose
Example - Irrigation Supply Channels
4. Make efficient ~~(reasonable)~~ use of Central Valley Water Board and stakeholder resources to develop and implement water quality standards
5. Provide flexibility to address naturally elevated background constituents

In addition, special consideration will be given to the implementation components of any WQO to ensure that downstream beneficial uses remain protected.

Commented [A1]: Comments are provided below from the Sacramento River Source Water Protection Program (SRSWPP).

Commented [A2]: It is unclear from the LMUN definition if the waterbodies will actually be allowed for MUN use. This would have a significant impact on which objective is appropriately protective of the use.

Commented [A3]: We request that this word be removed, as it is not consistent with the main staff report, and may lead to misinterpretation and change of meaning from the history and development of the process. Or please clarify why reasonable was added.

Commented [A4]: We are concerned that flexibility may lead to inconsistency in implementation. We recommend that there be a guidance document developed, and drinking water and applicable stakeholders be provided the opportunity for input.

Commented [A5]: Why is this not a criterion? This was provided as a criterion in earlier versions.

Table I - 1 Water Quality Objective Options for a “LMUN” Category

Water Quality Objective Options	Brief Description	Level of Consistency with Selection Criteria Ratings = Yes/No or High/Medium/Low					Notes
		1 (Laws)	2 (Potential Use)	3 (Intended Use)	4 (Reasonable use of resources)	5 (Background levels)	
Add new NARRATIVE water quality objective	A narrative water quality objective is given in the Basin Plan for the LMUN beneficial use Proposed Options: 1. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use.</i>	Yes	Low	Med	Med	Low	- How is accumulation determined? - “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected
	2. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use or degrade other in-stream or downstream beneficial uses.</i>	Yes	Low	Med	Med	Low	- “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected - Considers in-stream and downstream beneficial uses
	3. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use and cannot preclude potable use with reasonable management and/or treatment.</i>	Yes	Med	Med	Med	Low	- “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected - “potable use” may result in the use of primary and secondary MCLs as water quality objectives - “reasonable” may require examples
	4. <i>Accumulation of constituents in the water body above natural background concentrations cannot preclude managed and/or treated use of the water for Municipal or Domestic Supply (MUN) use or degrade downstream beneficial uses</i>	Yes	Med	Med	Med	High	- Need to define “natural background concentrations” - Need examples of “managed and/or treated” and some concept of relative and acceptable economic cost.

Commented [A6]: The use of allowing reasonable impacts in the narrative objectives provides no clarification or consistency on what impacts would be allowed.

Commented [A7]: How would the Regional Board propose to determine that reasonable treatment would be required to allow potable use?

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		1 (Laws)	2 (Potential Use)	3 (Intended Use)	4 (Reasonable use of resources)	5 (Background levels)	
	5. Accumulation of constituents in the water body must be found to provide maximum benefit to the people of the state and not unreasonably affect managed and/or treated use of the water for Municipal or Domestic Supply (MUN) use nor degrade downstream beneficial uses above natural background concentrations.	Yes	Med	High	Med	High	<ul style="list-style-type: none"> - Includes reference to maximum benefit of the people of the state - Antidegradation - Need to define “natural background concentrations”
	6. Discharge from these water bodies will not degrade downstream beneficial uses consistent with the state antidegradation policy (SWRCB Resolution No. 68-16).	Yes	Low	High	Med	Low	<ul style="list-style-type: none"> - Does not protect the water body itself - Already an existing legal requirement
	7. Water quality will be protected as specified in the state antidegradation policy (SWRCB Resolution No. 68-16).	Yes	Med	Med	Med	Med	<ul style="list-style-type: none"> - Refers directly to Antidegradation policy - May be able to provide clarification in implementation section - Already an existing legal requirement
	8. Water quality and downstream beneficial uses will be protected consistent with the state antidegradation policy.	Yes	Med	Med	Med	Med	<ul style="list-style-type: none"> - Refers to Antidegradation policy but without the policy number (in case it ever changes) - May be able to provide clarification in implementation section - Already an existing legal requirement
	9. Water quality will be protected consistent with state and federal antidegradation policy and will not create a trend of degradation that impacts any downstream beneficial uses.	Yes	Med	Med	Med	Med	<ul style="list-style-type: none"> - Unnecessary to refer to federal antidegradation policy - Trend could be interpreted differently so would need clarification

Commented [A8]: Does this refer to within the re-designated water body?

Commented [A9]: Why not include federal antidegradation policy and trends of degradation?

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	10. Water quality of surface waters designated for use as LMUN shall be maintained to protect the other designated beneficial uses of water body, and shall not cause degradation of water quality in downstream water bodies that impairs their beneficial uses or is consistent with the state’s antidegradation policy.	Yes	Med	Med	Med	Med	<ul style="list-style-type: none"> - Refers to Antidegradation policy but without the policy number - Difficult to read and follow
Add new NUMERIC water quality objective	A numeric water quality objective is given in the Basin Plan for LMUN Proposed Options: 1. Must meet primary MCLs, but not secondary MCLs. (Narrative for nuisance objective will still apply)	Yes	Med	Low	Low	Low	<ul style="list-style-type: none"> - Secondary MCLs are for taste, odor and appearance and provide public welfare, and They do not reflect a human health criteria, but some secondary MCL constituents also have primary MCLs or other human health levels of concern. - Water purveyors are required to comply with secondary MCLs and would need to install treatment if necessary, as well as still must report exceedances of secondary MCLs in source water to the public
	2. Must meet primary and secondary MCLs with the exception of: trihalomethanes (short half-life)	Yes	High	Low	Low	Low	<ul style="list-style-type: none"> - Trihalomethanes have a short half-life and are a low human health threat in waters that are not currently being used for the MUN use. - MCLs are tap drinking water standards and these objectives are restrictive for agricultural practices
	3. Must meet primary and secondary MCLs, but dissolved fractions can be used in place of total fractions	Yes	High	Low	Low	Low	<ul style="list-style-type: none"> - Removing trihalomethanes or other constituents would require constituent by constituent scientific justification - Using dissolved fractions reflects the use of filtration in conventional water treatment - Water purveyors use total fractions for reporting and compliance with secondary MCL values
							<ul style="list-style-type: none"> - May be over-restrictive for potential MUN use of the water body itself

Commented [A10]: Re-designations should not be allowed to cause impairment of the downstream water bodies.

Commented [A11]: Water purveyors are required to comply with the secondary standards and would need to install treatment if necessary.

Commented [A12]: MCLs are levels that must be met in the water provided to customers, but monitoring and compliance is often based on raw water levels. These are intended to protect public health and welfare. Raw water levels indicate whether a constituent is present in a water supply at levels that require targeted treatment and allow for source control, if possible. There are MCLs that are protective of agricultural uses, such as salinity and metals.

Commented [A13]: In some cases, AGR objectives can be equal to or more stringent than MUN objectives

Commented [A14]: This is incorrect. Dissolved fractions are determined using a 0.45 um pore filter, and conventional filtration is not a discrete particle size removal process. The 0.45 micron filtration is applicable to monitoring for aquatic life protection (specifically, the bioavailability of metals for aquatic life) Dissolved fractions are not used in drinking water treatment and regulatory compliance; total recoverable metals are analyzed and reported. In conventional water treatment filtration, particles less than 1-10 um are not removed as efficiently as larger particles. Also, it is important to consider fate and transport of metals in the environment and in water treatment processes. Please see Attachment 10. Supporting Information on Conventional Drinking Water Treatment Filtration.

Commented [A15]: Since the allowed MUN use of the waterbody is not well defined, protecting source water for the MUN beneficial use may not be over-restrictive for many MCLs.