

Summary of the Differences Between the January 2007 & August 2008 Groundwater Recharge Draft Regulations

Article 1 – Definitions

Sections 60301.080 – 60301.910

- The definitions for “Aquifer”, “Groundwater Basin”, and “Mound” have been deleted as common terms or no longer utilized in the draft regulations.
- “24-hour Composite Sample” was modified for consistency with methods commonly used by groundwater recharge agencies.
- A definition for “Recharge Water” has been included to reduce terminology used throughout the draft regulation.
- “Recycled Water” has been renamed as “Recycled Municipal Wastewater” and redefined to provide clarity that the recycled water used for projects is of municipal wastewater origin (as opposed to industrial).
- The definition of “Spreading Area” has been revised to provide clearer differentiation between surface applications and subsurface applications (i.e. subsurface injection) by inclusion of dimensional constraints and acknowledgement that infiltration and percolation takes place for surface applications.
- “Subsurface Injection” has been renamed as “Subsurface Application” and redefined.
- “Surface Spreading” has been renamed as “Surface Application” and redefined.
- A definition for “Unsaturated Zone” has been added.

Article 5.1 – Groundwater Recharge

Section 60320. General requirements.

- Former subsection (c) pertaining to public hearings has been divided into two subsections, (c) and (d), to better distinguish the requirements.
- A requirement for notification of downgradient drinking water source owners has been added at paragraph (d)(2).
- Former subsection (e), pertaining to Operations Plans, is now subsection (f) and better distinguishes requirements between existing and new recharge projects.
- For new recharge projects, subsection (g) has been added to require establishment of baseline constituent values within aquifers expected to be effected by the project.

The addition of Section 60320.005. Alternatives.

- Recognizing that treatment techniques and strategies are quickly evolving, paragraph (a) has been added to allow project sponsors the opportunity to comply with the intent of the regulations by a means other than required.

- Paragraph (b) will allow less frequent monitoring for surface application projects utilizing both reverse osmosis and advanced oxidation treatment, since such treatment would provide an additional removal process that may not necessarily be otherwise required. *[Note: The particular monitoring requirements that may be lessened and the degree to which they'll be lessened, are still under discussion.]*

The addition of Section 60320.007. Laboratory Analyses.

- General laboratory analyses requirements have been added.

Section 60320.010. Control of Pathogenic Microorganisms.

- Former paragraphs (c) and (d), citing separate requirements for surface and subsurface projects, have been removed. A general regulatory statement applicable to both types of projects has been incorporated into new paragraph (c). Subsection (d) has been established to describe the means for demonstrating compliance with the minimum six-month travel time in (c). Subsection (e) was added to ensure continued tracer monitoring to drinking water wells, based on the tracer study results to monitoring wells. Subsection (f) was added establishing minimum requirements for projects that have yet to demonstrate the travel time requirements in (c) via (d); i.e., for projects in the planning stage.
- Paragraph (g) was added requiring Department approval of the methods used to meet the requirements in (d) and (f).
- Paragraph (h) was added, requiring submittal of a map that defines the 6-month boundary and the location of drinking water wells and monitoring wells.
- Paragraph (i) was added to allow the Department the ability to require further demonstration that the retention time is met as conditions change.

Section 60320.020. Control of Nitrogen Compounds.

- The phrase, "...or if more than 25 percent of the samples collected in any two-week period exceed a total nitrogen concentration of 10 mg/L...", in subparagraph (a)(2)(B) has been removed as inconsequential with the remaining requirements in place.
- Former sub subparagraphs (b)(1)(B)(i) and (ii) have been removed. The text is no longer necessary with the new terminology used.
- Text has been added to the beginning of the section to clarify that paragraph (c), i.e., Method 3, is applicable only to those projects having been in operation for at least 20 years.
- Subparagraph (c)(1)(A) clarifies that the downgradient extraction point is to be the downgradient potable water wells.
- Subparagraph (c)(1)(B) has been added, placing further total nitrogen criteria to be met to utilized Method 3.

- Subparagraph (c)(1)(C), formerly (c)(1)(B), has been revised with respect to the form of evidence that must be presented regarding nitrate and nitrite impacts and trends.
- Former paragraphs (c)(2) and (3) have been restructured into (c)(2).

Section 60320.030. Control of Regulated Chemicals and Physical Characteristics.

- Paragraphs (a) and (b) have been restructured to only describe the monitoring requirements and to clarify that monitoring for disinfection byproducts may be from recharge water.
- Paragraph (c) describes the monitoring requirements for secondary drinking water constituents.
- Paragraph (d) describes actions to be taken in the event that monitoring in (a) exceeds applicable standards. Most significantly, the means of determining compliance has been revised and varies depending on the type of contaminant (i.e. acute vs non-acute). In part, this reflects the fact that California adopted an MCL for perchlorate since the January 2007 version of the draft regulations.
- Paragraph (e) describes the actions to be taken in the event a secondary MCL is exceeded. Similar to the secondary MCL drinking water standards, compliance is now based on a running annual average.
- Paragraph (f) was established to allow reduced monitoring for asbestos.

Section 60320.035. Diluent Water Requirements.

- Some reorganizing and restructuring of the section took place, but the section essentially reflects the requirements of the former draft (except as noted below).
- The section has been revised to recognize that some diluent water may be approved drinking water sources.
- Paragraph (f) has been added, which requires diluent water operations to be included in the operations plan.

Section 60320.041. Recycled Water Contribution (RWC) Requirements.

- Former Table 60320.041 has been split into two tables to distinguish the differences between surface and subsurface application projects.
- The operating ranges now include smaller degrees of recycled water contribution. The ranges also vary depending on the type of project (i.e. surface vs subsurface application).
- The “checked-off” criteria for several requirements and ranges has been revised.
- The fraction of recycled municipal wastewater that must be present in a monitoring well for at least six-months prior to increasing a project’s recycled water contribution range is now 0.5, rather than 0.6.

- Former subparagraph (1)(B), which required the presence of recharge water in a monitoring well in each conveying aquifer prior to increasing a range, has been removed.
- A single multiplier value of $0.8 \times RWC_{\text{maximum}}$ has replaced the individual RWC standards of 0.4 and 0.7 in former subparagraphs (3)(B) and (C), as criteria for increasing a range.
- Former subparagraph (3)(D), which required water collected at the monitoring wells to meet all the primary drinking water maximum contaminant levels prior to increasing a range, was removed because it was redundant.
- A new approach regarding the need to provide reverse osmosis (RO) and advanced oxidation (AO) for surface application projects has been included. The January 2007 draft required RO and AO for projects exceeding 0.50 recycled water contribution. This has now been revised to apply to that portion of the recycled municipal wastewater stream that fails to meet the TOC limit in section 60320.045, regardless of the recycled water contribution range. *[Note: The Department is contemplating the inclusion of operational standards for reverse osmosis treatment.]*
- Former paragraph (5), which required a tentatively identified compound analysis prior to increasing ranges above 0.50 recycled water contribution, has been removed.

Section 60320.045. Total Organic Carbon Requirements.

- Former paragraph (c), which cited laboratory requirements for TOC, has been removed. The inclusion of new Section 60320.007 now captures the intent of former paragraph (c).
- Former subparagraph (e)(3)(G) has been replaced with new paragraph (4), which provides significantly more detail regarding the development of a health effects evaluation.
- Former paragraph (4), which required a tentatively identified compound analysis every five years, has been removed.
- In addition, several non-substantive changes to the text have been made for clarification.

Section 60320.047. Additional Constituent Monitoring.

- Subsection (a) was restructured into several subsections.
- Former subparagraph (a)(1)(A), which required monitoring for the unregulated contaminants pursuant to section 64450, has been removed because section 64450 was repealed with the adoption of the perchlorate drinking water standard.
- Subsection (c), which addresses monitoring for indicators of the presence of municipal wastewater (e.g. pharmaceuticals, endocrine disrupting chemicals, personal care products, etc.), has been expanded to be more descriptive of the basis of the monitoring.

- Subsection (d) has been added to require reporting to the Department and Regional Water Quality Control Board of detections related to the section.

Section 60320.065. Operation Optimization.

- Paragraph (a)(2) has been revised to include reference to section 60320.020.

Section 60320.070. Monitoring Between the GRRP and Downgradient Drinking Water Supply Wells.

- The text in paragraph (a)(1) has been revised for clarification.

Section 60320.090. Annual and Five-Year Reporting.

- Subsection (a) previously required annual reports to be submitted by March 1. The annual reports will now be submitted by a date specified in the project's RWQCB permit.
- Paragraph (a)(3) has been revised to also include reporting of detections in diluent water supplies.
- New paragraph (a)(7) requires reporting of the quantity and quality of recycled municipal wastewater and diluent water projected for the next twelve months.