PROPOSED ORDER R3-2023-0033
COMMENTS AND STAFF RESPONSES

During the 30-day public comment period, the Central Coast Water Board received written comments on proposed Order R3-2023-0033 from Soquel Creek Water District and from 21 members of the public. Staff responses to these comments are provided below. Many of the comments submitted by members of the public were similar or identical; those comments have been grouped into comment themes, and Central Coast Water Board staff provides a single response to all of the comments within that theme. Unique comments from members of the public are responded to separately. Comments and responses are included in the **Responses to First Comment Period** section.

While preparing responses to public comments received on the proposed permit, Central Coast Water Board staff identified a discrepancy in the anticipated nitrate concentration of the advanced treated recycled water (product water) reported in Soquel Creek Water District's engineering report (required pursuant to California Code of Regulations, title 22, section 60323 [hereafter, "title 22 engineering report"]) versus the concentration reported in the final antidegradation analysis technical report. While investigating the discrepancy in the reported nitrate concentration, Soquel Creek Water District identified a mistake in the chloride concentration reported in the title 22 engineering report and final antidegradation analysis. Soquel Creek Water District corrected this mistake in a revised final antidegradation analysis and an errata sheet for the final title 22 engineering report. The Central Coast Water Board provided a second public notice that included a description of the changes and provided 14 days for members of the public to provide comments on the changes. The notice of changes and opportunity to comment is included as Attachment 3 of the staff report. The revised final antidegradation analysis, title 22 engineering report, and errata sheet are hosted on the Pure Water Soquel webpage, linked below:

https://www.soquelcreekwater.org/261/Reports-Studies

The Central Coast Water Board received comments from two members of the public during the second comment period. Responses to comments received on the amended title 22 engineering report and the revised final antidegradation analysis are included in the **Responses to Second Comment Period** section.

Staff has also made various non-substantive corrections and edits to the previous draft of this order, which are not described here.

RESPONSES TO FIRST COMMENT PERIOD

Comments received between September 11 and October 11, 2023

COMMENTS FROM SOQUEL CREEK WATER DISTRICT

Comment 1:

WDR [waste discharge requirement] Section 1.2, page 1:
"The District is planning for non-potable use of purified water for irrigation of landscaping at the AWPF [advanced water purification facility] and irrigation of athletic fields near the TLC SWIP [Twin Lakes Church Seawater Intrusion Prevention Wells] well site as described in Title 22 Engineering Report (T22 ER), Section 15.4.3. Request to add a sentence 'Non-potable use of purified water as a future use may be approved upon receipt of ER [engineering report] amendment and conditional acceptance by DDW [State Water Resources Control Board Division of Drinking Water].'"

Staff Response to Comment 1:
Staff agrees that this suggested language is relevant to WDR Section 1.2 and has revised the proposed Permit language accordingly.
Change made: Section 1.2, page 5 - "In the future, Soquel Creek Water District may also use the advanced treated recycled water for non-potable uses. Non-potable uses of recycled water will require a title 22 engineering report amendment that describes the uses, conditional approval of the amendment by DDW, and additional regulatory coverage by the Central Coast Water Board."

Comment 2:

WDR Section 4.3, page 7:
"There is a formatting issue with item 4.3."

Staff Response to Comment 2:
Formatting issue fixed.
Change made: Discharge specification 4.3 was in the same paragraph as specification 4.2. The proposed Permit was revised such that 4.3 is in its own paragraph.

Comment 3:

WDR Table 3, page 8: "Request revision to influent monitoring for TOC [total organic carbon] to align with T22 ER [title 22 engineering report] Table 14-3 and with the City's current monitoring basis for discharge, at the same levels that get approved in the City's NPDES permit, which is currently out for public comment."

Staff Response to Comment 3:
The proposed Permit mistakenly included a monthly average total organic carbon (TOC) influent limit for the Advanced Water Purification Facility of 17 mg/L, which was

intended to be based on the effluent limit for the City of Santa Cruz's Wastewater Treatment Facility (WWTF). The WWTF limit is 20 mg/L TOC as a monthly average, not 17.
Change made: Staff modified the TOC monthly average limit in Table 3 of the proposed Permit to be 20 mg/L.

Comment 4:

WDR Table 4, page 9:
"Nitrogen limits do not conform to Title 22 GRRP [groundwater replenishment reuse project] regulations.

In Table 4, nitrogen species limits are listed for instantaneous max, which is not consistent with [title 22] 60320.212 - instantaneous max values do not apply for nitrite, nitrate, and nitrate+nitrite. Suggest deleting the values under instantaneous max for these species.

In Table 4, total nitrogen limit is listed as a daily max, which is not consistent with [title 22] 60320.210 - daily max value does not apply for total nitrogen. Suggest deleting the value under daily max."

Staff Response to Comment 4:
Title 22 section 60320.212 establishes requirements for demonstrating the control of nitrogen compounds and provides guidelines for considering reductions in monitoring frequencies for total nitrogen. However, section 60320.212 does not limit the Central Coast Water Board's ability to impose more stringent requirements such as setting limits based on the instantaneous or daily maximum. Nitrate and nitrite pose an acute health risk because a single exposure of nitrate in drinking water in excess of the human health standard (i.e., maximum contaminant level) can be detrimental or fatal to infants or unborn children by causing methemoglobinemia. Given that the water produced and recharged from Pure Water Soquel is intended to be used as a source of drinking water, it is pertinent to include discharge limits on the nitrate, nitrite, and total nitrogen concentrations. The San Diego Regional Water Quality Control Board set daily maximum limits for nitrate and nitrate + nitrate at 10 mg/L as N when it adopted a permit in 2021 for indirect potable reuse by the City of Oceanside. The San Diego Regional Water Quality Control Board also determined that nitrogen limits, in excess of what is required by section 60320.212, were appropriate in the permit. The Central Coast Water Board has included instantaneous limits as opposed to the daily limits included in the permit for the City of Oceanside. In some instances, a daily limit allows for short term variations in water quality that result in temporary

exceedances of a limit without incurring a violation. For example, if the sample results are available the day a sample is collected (pH for example), the treatment plant operator could collect additional same-day confirmation samples that could average out to comply with a daily limit (e.g., sample 1 = 12 mg/L, sample 2 = 2 mg/L, and the daily average is 7 mg/L). However, the Response Retention Time section (i.e., table 12-3) of the approved title 22 engineering report indicates it will take two days for Soquel Creek Water District to identify an exceedance of the proposed limits for nitrogen compounds. Results wouldn't be acquired in time for the operator to know that they need a same-day confirmation sample.

As such, the Central Coast Water Board recommends no changes to the instantaneous maximum limits for nitrate, nitrate+nitrite, or nitrite included in the proposed Permit. Including these instantaneous limits provides an implicit reminder to treatment plant operators and regulators that these are acute pollutants and they need to be monitored and managed closely and regulated stringently. Also, given the low nitrate concentrations in the target injection aquifer, it is appropriate that nitrogen compounds be regulated stringently to ensure protection of the high-quality receiving waters to the maximum extent practicable.

Change made: None.

Comment 5:

WDR Table 4, page 11:
"Table 4 refers to effluent limitations at location M-002 (the AWPF [advanced water purification facility] product water), but footnote 10 references RO [reverse osmosis] permeate for the TOC compliance. There is a chance this could lead to confusion that the AWPF product water must comply with 0.25 mg/L when the 0.5 mg/L limit is for AWPF product water. Similar to other permits (i.e. M1W), we suggest itemizing the RO permeate TOC requirement separately from Table 4. Similar comment applies to footnotes 12 and 13 for MF [membrane filtration] effluent turbidity since the turbidity limit for AWPF product water is different, too. We suggest moving the footnote language to two new subsections – 4.5.1 (for ROP [reverse osmosis permeate]) and 4.5.2 (for MFE [membrane filtration effluent])."

Staff Response to Comment 5:

The Central Coast Water Board agrees that including limits for the reverse osmosis and membrane filtration feed waters in a table for effluent limitations at the end of the treatment train is confusing. Additionally, limits for the TOC and turbidity in the WDR section of the proposed Permit are redundant because these limits are also described in the Water Reclamation Requirements of the proposed Permit, Attachment D.

Change made: Staff removed footnote 10 and all turbidity limits from table 10 since these limits are included in Attachment D, sections 3.1 and 5.3.4.

Comment 6:

Attachment D, Requirement 1.5.5, page D-3:
"Confirmation of impact on non-SqCWD [Soquel Creek Water District] wells should be based on tracer study results, which will be obtained after operation of project. Suggest replacing 'Prior to operation of the Project and/or another timeline approved by DDW [Division of Drinking Water], Soquel Creek Water District must confirm the Project's impact on non-Soquel Creek Water District wells and irrigation wells with respect to primary and secondary control zones.' With 'Based on the results of the tracer study which must be initiated prior to the 3rd-month of operation, the Discharger must confirm the Project's impact on non-Discharger wells and irrigation wells with respect to primary and secondary control zones.'"

Staff Response to Comment 6:
The Central Coast Water Board agrees with this proposed change and has revised the proposed Permit language accordingly.
Change made: Attachment D, Requirement 1.5.5, page D-3, "Based on the results of the tracer study which must be initiated prior to the 3rd-month of operation, the Soquel Creek Water District must confirm the Project's impact on non-Soquel Creek Water District wells and irrigation wells with respect to primary and secondary control zones. Non-Soquel Creek Water District wells and irrigation wells confirmed to be impacted by the Project must be mitigated for use or subject to further study."

Comment 7:

Attachment D, Requirement 2.2.1, page D-5:
"Requirement for upstream WWTP [wastewater treatment plant] to monitor specific constituents (acetone, 1-4 dioxane, formaldehyde and boron). The four pollutants are presented in the PWS [Pure Water Soquel] T22 ER (4.3.5.2) as 'analytes being monitored under the industrial pretreatment program and for the local limits study...'. Please note that it was our intent to include them in the Local Limits study and not for on-going monitoring. Based on outcomes of the Local Limits study, 1,4-dioxane was not identified as recommended for on-going monitoring (Local limit study was approved by the City of Santa Cruz on September 12, 2023). Request removal of 1,4-dioxane from this list."

Staff Response to Comment 7

Staff agrees that 1,4-dioxane was not identified as recommended for on-going monitoring in the Local Limit Study that was approved by the City of Santa Cruz on September 12, 2023. Pure Water Soquel monitors the effluent for 1,4-dioxane monthly.
Change made: Staff have removed 1,4-dioxane from this list in Attachment D, Requirement 2.2.1, page 52.

Comment 8:

Attachment D, Requirement 4.4, page D-7:
“This comment was made on identical language in DDW’s Conditional Acceptance Letter (CAL), but it is possible that non-SqCWD wells within control zones will not grant permission to monitor those wells. Suggest adding an option of monitoring a representative well for these areas in addition to areas just outside the secondary control zone.

Suggest changing ‘The tracer test protocol must include monitoring of non-Soquel Creek Water District wells present within the estimated primary and secondary control zones. Non-Soquel Creek Water District wells and/or representative well(s) (non-Soquel Creek Water District or Soquel Creek Water District wells) that are located just outside and in proximity to the estimated secondary control zone boundary must be included in the tracer test monitoring.’ to ‘The tracer test protocol must include monitoring of non-Discharger well(s) present within the estimated primary and secondary control zones and/or representative well(s) (non-Discharger or Discharger well(s)) that are located in the same vicinity and receive the same groundwater flow as the non-Discharger well that is being represented. Non-Discharger wells and/or representative well(s) (non-Discharger or Discharger wells) that are located just outside and in proximity to the estimated secondary control zone boundary must be included in the tracer test monitoring.’”

Staff Response to Comment 8:
Staff understands that Soquel Creek Water District may not be granted access to monitor non-district wells within the control zones. As such, staff agrees with the suggested language change. Additionally, the use of representative wells is subject to demonstrating that the subject wells provide adequate representation, an explanation as to why non-Soquel Creek Water District well(s) are not used in tracer test monitoring, and DDW’s acceptance of the representative well.
Change made: Staff changed language in Attachment D, Requirement 4.4, page D-7 from, "The tracer test protocol must include monitoring of non-Soquel Creek Water District wells present within the estimated primary and secondary control zones. Non-Soquel Creek Water District wells and/or representative well(s) (non-Soquel Creek

Water District or Soquel Creek Water District wells) that are located just outside and in proximity to the estimated secondary control zone boundary must be included in the tracer test monitoring." to "The tracer test protocol must include monitoring of non-Soquel Creek Water District well(s) present within the estimated primary and secondary control zones and/or representative well(s) (non-Soquel Creek Water District or Soquel Creek Water District well(s)) that are located in the same vicinity and receive the same groundwater flow as the non-Soquel Creek Water District well that is being represented. Non-Soquel Creek Water District wells and/or representative well(s) (non-Soquel Creek Water District or Soquel Creek Water District wells) that are located just outside and in proximity to the estimated secondary control zone boundary must be included in the tracer test monitoring."

Comment 9:

Attachment D, Requirement 5.3.9.3, page D-10:
“Requirement for automatic emergency storage or disposal for RO [reverse osmosis] LRV [log reduction value] < 1.0 is not a permit requirement in similar currently operating GRRPs. Given there appears to be >30 months underground retention time between injection and production wells (based on modeling), and the project is expected to attain at least 13.5/11.5/11.5-log reduction of virus, giardia, and cryptosporidium, automatic emergency storage or disposal as required in this permit condition seems unnecessary to otherwise meet the notification requirements of Title 22 §60320.208(h) and (i).

If the RO LRV is <1.0, then the RO process would not be credited for any LRVs towards the total LRVs. Diversion should only be applied if the total LRVs are less than 10/8/8 per 60320.208(i).

Request changing Section 5.3.9.3 to ‘RO LRV’ of <1.0 is ‘off spec’ [off specification] for AWPF and must initiate automatic activation of reliability features. The Discharger is subject to the requirements of Title 22 CCR [California Code of Regulations] Section 60320.208 (h) to investigate and initiate corrective action and must discontinue the Project application for GRRP following Title 22 CCR Section 60320.208 (i) or divert in accordance with Title 22 CCR section 60341.”

Staff Response to Comment 9:
RO LRV of <1.0 is ‘off spec’ for AWPF and must initiate automatic activation of reliability features. Soquel Creek Water District is subject to the requirements of title 22 CCR section 60320.208 (h) to investigate and initiate corrective action and must discontinue the Project application of GRRP following title 22 CCR Section 60320.208 (i) or divert in accordance with title 22 CCR section 60341
Change made: None.

Comment 10:

Attachment D, Requirement 5.3.4, page D-8:
“Similar to comment 9, 5.3.4 references 60341 for MF effluent turbidity. An individual train may fail and be taken offline versus just going straight to an automatic full diversion.

Request changing ‘Exceedance of turbidity limits (5.3.4.1-5.3.4.2) must initiate automatic reliability feature in accordance with CCR Title 22 Section 60341.’ to ‘Exceedance of turbidity limits (5.3.4.1-5.3.4.2) must initiate automatic reliability feature. The Discharger is subject to the requirements of Title 22 CCR Section 60320.208 (h) to investigate and initiate corrective action and must discontinue the Project application for GRRP following Title 22 CCR Section 60320.208 (i) or divert in accordance with Title 22 CCR section 60341.’”

Staff Response to Comment 10:
Exceedance of turbidity limits (5.3.4.1-5.3.4.2) must initiate automatic activation of reliability feature. Soquel Creek Water District is subject to the requirements of title 22 CCR section 60320.208 (h) to investigate and initiate corrective action and must discontinue the Project operation of GRRP following title 22 CCR section 60320.208 (i) or divert in accordance with title 22 CCR section 60341.
Change made: None.

Comment 11:

Attachment E, Table E-3, page E-14:
“Table E-3 has a typo: Footnote ‘111’ should be ‘11’.”

Staff Response to Comment 11:
Staff agree that there is a typo in footnote 11 of Attachment E, Table E-3, page E-14
Change made: Staff modified the footnote to say “11”, not “111”.

Comment 12:

Attachment E, Section 4.3.4, page E-17:
“Typo/Formatting: 4.3.4 just above Table E-6 should be 4.3.7. Everything after that needs to be fixed, too.”

Staff Response to Comment 12:
Staff agrees that the numbering identified is wrong and needs to be corrected.
Change made: The duplicate occurrence of 4.3.4 just above Table E-6 was changed to 4.3.7 and all subsequent numbering through 4.4 was changed accordingly.

Comment 13:

Attachment E, Table E-7 and Table E-12, pages E-21 and E-27:
"Monochlorobenzene and chlorobenzene are the same chemical. Chlorobenzene is the correct name, and the List of CTR [California Toxics Rule] Priority Pollutants lists chlorobenzene not monochloroebenzene. Change table E-7 to say chlorobenzene instead of monochlorobenzene to avoid confusion."

Staff Response to Comment 13:
Staff agree Monochlorobenzene should be changed to chlorobenzene.
Change made: Staff changed Table E-7 analyte Monochlorobenzene to chlorobenzene.

Comment 14:

Attachment E, Table E-23, page E-42:
"SMR due dates require a fast turn-around time and some laboratory data may not be available in time. Request the 15th day of third month after reporting period and June 30 for annual report (June 30 to match Table E-24)."

Staff Response to Comment 14:
Staff acknowledges that there are extensive monitoring requirements that may require an extended amount of time to compile, review, and report. As such, staff agrees that more time should be allocated for developing the quarterly reports. Staff notes that samples can be collected at any time within the sampling period. The monthly report due date comes from Water Reclamation Requirements (WRRs). These monthly reporting due dates are not flexible.
Change made: Staff has changed the report due date for each quarterly report to the third month after the quarterly reporting period. Staff changed the due date for the annual reports to match the date listed in table E-24.

COMMENTS FROM MEMBERS OF THE PUBLIC

Theme Comment 1, First Comment Period:

Many of the comments received expressed concern about the anticipated nitrate concentration in the advanced treated recycled water relative to the ambient concentration in the aquifer. Direct transcriptions of comments that revolved around this theme are included below.

- "I note that in the Proposed Permit document, it states that the PureWater Soquel Project product water injected into the Purisima Aquifer would contain 3.5mg/L nitrate and that the ambient nitrate level is 0.06mg/L. Why is the Regional Water Board willing to allow addition of

nitrate into the groundwater and not require additional treatment to remove it before injection?"

- "The idea of pumping treated sewage water into the aquifers seems highly questionable, especially when it raises the nitrogen level to be **58 times higher**."
- "We have lived here for 44 years. Please require Soquel Creek Water District to reduce the nitrate level in the PureWater Soquel Project injection water to equal the ambient nitrate level of 0.06mg/L and preserve the high-quality water of our aquifer."
- "Pure Water Soquel's acknowledgement that they will be degrading groundwater with known NO3-N of ~3.5ppm…"
- "The aquifer's ambient groundwater nitrate level is 0.06 mg/L. The treated wastewater is characterized as having a nitrate level of 3.5 mg/L, which is more than 50 times the ambient concentration. Although the safe drinking water standard for nitrates is 10 mg/L, injection of water with a concentration of 3.5 mg/L would erode our existing comfortable buffer."
- "Please require Soquel Creek Water District to reduce the nitrate level in the PureWater Soquel Project injection water to equal the ambient nitrate level of 0.06mg/L and preserve the high-quality water of our aquifer.
- "Please require Soquel Creek Water District to reduce the nitrate level in the PureWater Soquel Project injection water to equal the ambient nitrate level of 0.06mg/L and preserve the high-quality water of our aquifer. We all want clean water and by preserving our land and ecosystems, including its aquifers, we may reach that goal."
- "Please require Soquel Creek Water District to reduce the nitrate level in the PureWater Soquel Project injection water to equal the ambient nitrate level of 0.06mg/L and preserve the high-quality water of our aquifer. The quality of the valleys aquifers are of extreme importance to me."
- "I am asking that the permit to Soquel Creek Water District's PureWater Project be denied.

  What concerns me about this proposed project is that the permit application admits that, by injecting water with a substantial amount of nitrate in it, the water quality is going to be degraded. I am under the impression that nitrate is to be removed by reverse osmosis (already part of the PureWater Soquel Project treatment process). I am not understanding why there will be 3.5mg/L nitrate in the finished water to inject into our groundwater with a nitrate level significantly lower (0.06mg/L)."

- "Please stop Pure Water Soquel from injecting about 3 million gallons of treated sewage water daily into the high quality water of our aquifer. Pure Water Soquel can't remove all nitrates,…"
- "Soquel Creek Water should not be allowed to inject water with nitrate levels that are more than the ambient level in the groundwater. I do not trust them at all.

  We are customers of Soquel Creek Water District for over 27 years."

Comments submitted by: Rebecca Steinbruner, Dick Zscheile, John R. Compton, Pat and Jim Weber, Dave Steinbruner, Erica Stanojevic, Kevin Bell, Jack Brown, Lauren Stoops, Raina Stoops, Richard James, Jennifer Paige Smith, Peter G. Page, Alberta James, Kris Kirby, Richard Wameling, and Sam English.

Staff Response to Public Theme Comment 1, First Comment Period:

Revised Estimates of Assimilative Capacity Consumed Based on Lower Anticipated Nitrate Concentration in Product Water

While preparing responses to public comments received on the proposed Permit, Central Coast Water Board staff identified a discrepancy in the anticipated nitrate concentration of the advanced treated recycled water (product water) reported in the title 22 engineering report versus the concentration reported in the final antidegradation analysis technical report. The anticipated concentration in the final antidegradation analysis of 3.5 mg/L nitrate as N (nitrate-N) was based on a previous iteration of the treatment plant design which utilized alternative treatment process steps. This previous design would have resulted in a higher nitrate concentration in the product water relative to the final design that is ultimately being implemented.

The final design that is being developed for Pure Water Soquel is anticipated to have a product water nitrate-N concentration of 1.67 mg/L, as described in Table 8-6 of the title 22 engineering report. The final antidegradation analysis summary in Table 11-11 of the title 22 engineering report accurately reflects the anticipated product water nitrate-N concentration as 1.7 mg/L. Additionally, table 11-11 also includes a revised assimilative capacity estimation of 0.27% assimilative capacity consumed based on an anticipated nitrate-N concentration of 1.67 mg/L. This is lower than the 0.57% assimilative capacity consumed estimated in the final antidegradation analysis using a product water concentration of 3.5 mg/L nitrate-N. A memorandum from the design and build engineering firm for Pure Water Soquel, Black & Veatch, describing the anticipated nitrate concentrations in the product water is included as Attachment 2 of the notice of changes and opportunity to comment (second comment period), which is included as Attachment 3 of the staff report. A revised final antidegradation analysis is included in the record.

Central Coast Water Board responses to comments below are based on a product water nitrate-N concentration of 1.67 mg/L. However, even at a product water concentration of 3.5 mg/L, the project complies with applicable laws, plans, and

policies, as described in the final antidegradation report; beneficial uses are protected, water quality objectives are complied with, degradation to ambient water quality is minimal, and the project would only consume 0.57% of available assimilative capacity. At the currently anticipated product water concentration of 1.67 mg/L nitrate-N, the water quality impacts of the project are even further reduced.

The Central Coast Water Board understands that members of the public are concerned about the potential for degradation of the target injection aquifer, Purisima Unit A. However, the discharge proposed by Soquel Creek Water District will not unreasonably 1) degrade groundwater quality in the target injection aquifer, 2) impair the beneficial uses, or 3) consume excessive nitrate assimilative capacity. Furthermore, the discharge is consistent with the *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan), Resolution 68-16 *Statement of Policy with Respect to Maintaining High Quality Waters in California* (Antidegradation Policy), Resolution 2018-0057 *Water Quality Control Policy for Recycled Water,* and other applicable plans and policies. This is explained further below, as well as in the revised final antidegradation analysis.

Many of the comments received expressed concern that the discharge would degrade the quality of the target injection aquifer, which has an ambient nitrate-N concentration of 0.06 mg/L, by injecting water with a nitrate-N concentration of 1.67 mg/L. While it is true that there will be some degradation, the amount of degradation will be small. The injection of water with a concentration of 1.67 mg/L of nitrate-N into an aquifer with ambient concentrations of 0.06 mg/L will never cause groundwater to exceed 1.67 mg/L nitrate-N; at this concentration mixed groundwater will have a concentration somewhere between 0.06 mg/L and 1.67 mg/L, depending on the relative fraction of injected water that has mixed with ambient water.

The Central Coast Water Board can also estimate the aquifer-scale impact of the proposed recharge project. If the entire mass of nitrate injected over the course of a year was dissolved into the volume of water in the target aquifer, the resulting concentration would be less than 0.01 mg/L nitrate-N and would cause ambient concentrations to increase from 0.06 mg/L to less than 0.07 mg/L. This result is consistent with the revised final antidegradation analysis performed by Soquel Creek Water District, in coordination with Central Coast Water Board staff, which found that if the nitrate concentration of the injectate 1.67 mg/L, the project will consume 0.27% of the aquifer's assimilative capacity for nitrate.

Compliance With the Antidegradation Policy

Beneficial Uses, Water Quality Objectives, and Maximum Benefit

Many of the comments received expressed concern that the discharge would degrade the quality of the target injection aquifer, which has an ambient nitrate-N concentration of 0.06 mg/L, by injecting water with a nitrate-N concentration of 1.67 mg/L. While it is

true that there will be some degradation, some amount of degradation is allowable by the Antidegradation Policy as long as the degradation is in the interest of the people of the state, water quality objectives are not violated, and beneficial uses are preserved. The nitrate water quality objective for the basin is 10 mg/L, which is also the concentration required to protect the beneficial use that is most vulnerable to nitrate pollution, the municipal and domestic supply (MUN). The previous discussion of water quality impacts demonstrated that the project will never cause aquifer concentrations to exceed 1.67 mg/L, and therefore the water quality objectives won't be violated and the beneficial use will be preserved.

Regarding the requirement in the Antidegradation Policy to demonstrate that the project is in the best interest of the people of the state, the Soquel Creek Water District has made this argument effectively in its adopted Environmental Impact Report and revised final antidegradation analysis. The benefits are also summarized in the Fact Sheet of the proposed Permit and include increased water affordability compared to no project, mitigating seawater intrusion, developing a drought-resistant water supply, and providing enhanced water supply resiliency.

Best Practicable Treatment and Control

Some of the comments received also requested that the Central Coast Water Board require the injectate nitrate concentration to match the ambient groundwater concentration. As an initial matter, the Central Coast Water Board cannot dictate the manner of compliance with a permit (California Water Code, section 13360.a). As such, the Central Coast Water Board cannot dictate that the injectate match the ambient nitrate concentration. Moreover, the Antidegradation Policy requires that the Central Coast Water Board impose requirements that the Soquel Creek Water District implement 'best practicable treatment and control' of the discharge to ensure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State will be maintained. The Antidegradation Policy does not require that the discharge quality match the ambient quality and it may be impractical to do so.

The processes that Soquel Creek Water District proposes for reducing nitrogen concentrations at Pure Water Soquel represent the best practicable treatment and control. The two primary processes that will reduce nitrate concentrations are the trickling filter aerobic wastewater treatment system at the City of Santa Cruz WWTF, which reduces total nitrogen concentrations from approximately 45 mg/L in raw wastewater to approximately 10 mg/L in the effluent, primarily in the form of nitrate. The reverse osmosis component of Pure Water Soquel will further reduce nitrate-N concentrations to 1.67 mg/L. Reducing nitrate concentration further would be costly and probably require modifying the treatment process at the City of Santa Cruz WWTF such that the influent delivered to Pure Water Soquel had a lower nitrate concentration..

Reducing nitrogen concentrations below 1.67 mg/L is unnecessary because there aren't substantial water quality benefits to doing so in terms of water quality objectives, beneficial uses, or assimilative capacity while the cost of further reductions is substantial. Furthermore, the treatment train and resulting nitrate concentrations proposed for Pure Water Soquel are similar to other projects in the state and reflect best practicable treatment and control. As an example, staff reviewed the anticipated nitrate concentrations from other recently or soon-to-be permitted facilities in the state (Orange County Water District, City of Oceanside, Monterey One Water, and the City of Santa Monica) and found that these projects are producing or anticipate producing water with nitrate concentrations ranging from 0.8 mg/L to 4.5 mg/L. The anticipated concentration at Pure Water Soquel is within the range of product water nitrate concentrations at facilities elsewhere in the state. Furthermore, the primary nitrate reduction treatment process used to reduce nitrate concentrations in the secondary treated effluent arriving at Pure Water Soquel is the same process - reverse osmosis - implemented at other facilities staff evaluated. The reason for the range of nitrate concentrations at the other facilities evaluated reflects differences the initial treatment process for raw wastewater (e.g., a membrane bioreactor wastewater treatment plant versus a trickling filter plant), or the nitrogen concentration of the raw wastewater, or the presence the presence of other kinds of waste streams treated at the advanced treatment facility that might affect nitrogen concentrations (e.g., stormwater or industrial process water). Regardless of the differences among the plants reviewed, however, Pure Water Soquel is utilizing technology that meets the criteria for best practicable treatment and control and is producing water that is consistent with other modern indirect potable reuse facilities in the state.

Compliance With the Recycled Water Policy

Although many of the comments made by members of the public expressed concern about the nitrate concentration of the injectate relative to ambient groundwater, the Central Coast Water Board determined that the revised final antidegradation analysis demonstrated the project is compliant with the assimilative capacity requirements in the Recycled Water Policy, as discussed in the Fact Sheet of the proposed Permit. For basins without an adopted Salt and Nutrient Management Plan, such as the Santa Cruz Mid County groundwater basin, project proponents are required to perform an in-depth antidegradation analysis and demonstrate that the project will not consume more than 10% of the available assimilative capacity. Here, the analysis demonstrated that the project will only consume 0.27% of the available assimilative capacity for nitrate and as such, the project complies with the requirements for an antidegradation analysis in the Recycled Water Policy.

Conclusion

In summarizing, staff has determined that the proposed injectate nitrate concentration 1.67 mg/L nitrate-N will be protective of beneficial uses, will not violate water quality objectives, and will minimally degrade water quality. The small amount of degradation is offset by the substantial amount of benefit provided by the project. Pure Water Soquel will be utilizing appropriate best practicable treatment and control and is

achieving nitrate-N concentrations that are consistent with other similar facilities in the state. The discharge complies with the Basin Plan, Antidegradation and Recycled Water Policies, and other relevant plans, policies and laws. Staff recommends no changes to the proposed Permit based on comments received on this matter.
Change made: Section 3.5, *Antidegradation Policy*, of the Fact Sheet of the proposed permit was changed to reflect the updated anticipated nitrate concentration in the product water and assimilative capacity used. The nitrate concentration of the product water was changed from 3.5 mg/L nitrate-N to 1.67 mg/L nitrate-N in the first line of page F-18 and in the first paragraph of page F-19. The estimated assimilative capacity used was also changed to 0.27% instead of 0.57% in the third paragraph of page F-18.

Theme Comment 2, First Comment Period:

Many of the comments received expressed concern about pollutants other than nitrate that might be present in the advanced treated recycled water. Direct transcriptions of comments that revolved around this theme are included below.

- "What other contaminants will it have? And then, you will pump it out for human consumption? This does not make sense."
- "Pure Water Soquel's acknowledgement that they will be degrading groundwater with known NO3-N of ~3.5ppm *and untested-for pharmaceutical metabolites* [emphasis added]."
- "Additionally, can Pure Water Soquel ensure that no other chemicals that could be harmful, such as pesticide or medicinal residues (including radioactive residues from some cancer treatments), will be completely removed from the injected water? There is too much risk to injecting treated wastewater into a potable water supply aquifer, and there are safer alternatives. I therefore request a no vote on this application."
- "Pure Water Soquel can't remove all nitrates, nor get out the endocrine disrupters, the medical waste by products including radioactive waste, and the nanoparticles that are all flushed out of our bodies into the sewer system.

  What other unregulated contaminants will the project's treatment system not be able to remove?"
- "I am concerned that harmful and unregulated elements will not be removed from the treated water injected into our drinking supply. Please ensure that any water injected into the ground water is cleaner than what is currently planned.

  What else is going to be introduced into our groundwater that the treatment process is missing? Medications? Chemotherapeutic agents? Forever

Chemicals (PFAS)[per- and polyfluoroalkyl substances]? While I appreciate that injection of water back into our aquifer is one means of mitigating salt water intrusion, it is unacceptable risking contamination of our water. No thank you to this project."

Comments Submitted by: Dick Zscheile, Dave Steinbruner, Tina Andreatta, David L Schwartz, Alberta James, and Richard James.

Staff Response to Public Theme Comment 2, First Comment Period:

The commenters expressed concern that pollutants present in raw wastewater may not be removed by the treatment processes and may end up in drinking water supplies. However, the treatment processes proposed for Pure Water Soquel are effective at removing contaminants and the extensive monitoring program ensures that only high-quality water will be injected into the aquifer. Furthermore, the water quality data from other advanced treated recycled water facilities in the state indicates that the treatment process proposed for Pure Wate Soquel will be effective in removing harmful pollutants.

Treatment Process Requirements

The treatment process for Pure Water Soquel includes membrane filtration followed by reverse osmosis (RO) and then an ultraviolet light advanced oxidation process (UVAOP), as required by title 22 of the California Code of Regulations (title 22 regulations). The RO and UVAOP components of the treatment process are required by the title 22 regulations with specific regard to the fact that raw wastewater may contain a wide array of unregulated contaminants, in excess of what might typically be found in sources of drinking water. These contaminants, often referred to as constituents of emerging concern (CEC), can be effectively removed from the advanced treated wastewater by the combination of RO and UVAOP because each offers dissimilar treatment processes that mitigate different types of chemical contaminants.

For example, RO is a filtration process that is proven effective for removing most contaminants and CECs based largely on the size of the constituent. RO effectively removes total dissolved solids, heavy metals, organic pollutants, viruses, bacteria, per- and polyfluoroalkyl (PFAS) compounds, and other constituents. At Pure Water Soquel, RO is expected to reduce nitrate concentrations by 81% relative to the concentrations in the advanced water purification facility influent. UVAOP supplements the treatment process by removing what RO misses, non-ionic constituents with very small molecular weights such as 1,4 dioxane and N-nitrosodimethylamine (NDMA). The advanced oxidation process is designed to remove unknown contaminants that may remain after RO. Pure Water Soquel is required to demonstrate the effectiveness of its proposed RO and UVAOP processes to State Water Resources Control Board's Division of Drinking Water and will continue to verify effectiveness through the ongoing process control monitoring for RO and UVAOP, as described in the proposed monitoring and reporting program, section 4.2, Attachment E.

Although it is true that not all possible contaminants are being monitored as part of Pure Water Soquel, it isn't feasible to do so nor is it necessary. The combination of RO and UVAOP ensures that wide classes of contaminants are being removed and ongoing verification by monitoring both the treatment process and finished water quality ensures that the treatment processes are working effectively. A 2009 report by the National Water Research Institute Independent Advisory Panel for the City of San Diego Indirect Potable Reuse/Reservoir Augmentation (IPR/RA) Demonstration Project's Advanced Water Purification Facility Study found that RO and UVAOP are effective in producing high quality water safe for human consumption. The report explains that RO provides an effective barrier against "trace organics, including pharmaceuticals, endocrine active compounds, ingredients in personal care products, pesticides, and most other compounds of interest to regulators, the media, and general public." The report goes on to say that the low molecular weight compounds that pass through RO are effectively removed by UVAOP.

A copy of the study can be accessed on the internet at the following link:
https://www.sandiego.gov/sites/default/files/legacy/water/pdf/purewater/nwrireport.pdf

Monitoring and Reporting Program

The monitoring and reporting program included in the proposed Permit requires Soquel Creek Water District to monitor both the advanced treated recycled water and groundwater for a large suite of pollutants including those with established maximum contaminant levels (MCLs), but also pollutants that don't have MCLs. In total, there are more than 120 pollutants with MCLs that will be monitored, 33 pollutants with notification and response levels, including four per- and polyfluoroalkyl (PFAS) compounds, and 68 priority pollutants, which includes pesticides and other organic compounds.

Constituents of Emerging Concern (CEC) Monitoring

In addition to the monitoring described above, the proposed Permit includes constituents of emerging concern[1] (CEC) monitoring requirements, which are intended to address many of the concerns posed by the public. Specifically, the CEC monitoring is intended to provide information on the following: 1) presence of specific CECs in the recycled water, 2) presence of unmonitored pollutants in the recycled water that may be harmful to human health, 3) effectiveness of the treatment process in removing suites of pollutants that aren't explicitly monitored for, and 4) the need for

[1] Constituents of emerging concern encompass any physical, chemical, biological, or radiological substance or matter in any environmental media that may pose a risk to human and/or ecological health, for which there is not currently published enforceable California or federal environmental or health standard (e.g., notification level, maximum contaminant level, water quality objective, effluent limitation), or the existing standard is evolving or being re-evaluated, and/or the presence, frequency of occurrence, source, fate and transport, and/or toxicology of which is not well understood, routinely monitored, and/or may lack analytical methods. CECs are not necessarily new chemicals (or substances); in some cases they have long been present in the environment, but their presence and significance are only now being elucidated.

enhancing monitoring based on CEC results. The recommendations for the CEC monitoring were developed by a science advisory panel convened by the California State Water Resources Control Board and consisted of experts in the fields of chemistry, biochemistry, toxicology, environmental microbiology, epidemiology, risk assessment, and engineering. The CEC monitoring requirements are described in the monitoring and reporting program of the proposed Permit, section 5, Attachment E.

One of the tools utilized by CEC monitoring is bioanalytical screening, which helps determine if there are un-monitored constituents in the water that present adverse health risks such as feminization, impaired reproduction, and cancer. The estrogen receptor-α bioanalytical screening tool included in the monitoring and reporting program is intended to monitor for adverse effects from constituents such as estradiol (hormone), bisphenol a (used in plastic production, i.e., BPA), and nonylphenol (industrial processes). The aryl hydrocarbon receptor bioanalytical screening tool is used to monitor for adverse effects from pollutants such as dioxin-like chemicals (chemical biproducts), polycyclic aromatic hydrocarbons (hydrocarbon combustion byproducts), and pesticides. The Recycled Water Policy specifies a multi-tiered approach of thresholds and corresponding response actions for evaluation of health-based CEC and bioanalytical screening tool monitoring results. These thresholds and response actions will be used to determine if additional constituents need to be included in the monitoring and reporting program.

The performance process monitoring of the CEC requirements uses the monitoring results of a specific compound as a surrogate for the treatment effectiveness of similar types of compounds. As an example, monitoring for sulfamethoxazole is used as a treatment process performance indicator for the removal of a broader class of CECs, including pharmaceuticals and pharmaceutical metabolites.

More information on the technical background for CEC monitoring can be found in the 2018 Science Advisory Panel report on CEC monitoring in recycled water. The report can be accessed on the internet at the following link: https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1032_CECMonitoringInRecycledWater.pdf

Groundwater Monitoring

In addition to the extensive recycled product water and process control monitoring, the proposed monitoring and reporting program includes a robust groundwater monitoring program consisting of two groundwater monitoring wells for each injection well. The monitoring wells are located such that they will provide advance warning regarding the presence of harmful pollutants in the aquifer, before they can migrate to extraction wells, as required by CCR, title 22, section 60320.226. Furthermore, the groundwater monitoring program is designed to identify geochemical interactions between the injected water and native groundwater or aquifer materials that could mobilize or form pollutants.

Response Retention Time
In addition to the extensive monitoring program, Soquel Water District has been required to demonstrate that if off-specification water is ever injected in the aquifer, there is adequate time to identify the issue and respond accordingly to downgradient extraction wells, which may include providing replacement water or connecting water users to a different water source. This helps ensure that, in the event of a catastrophic treatment failure, downgradient water users won't be exposed to off-specification recycled water. This is referred to as the Response Retention Time and details of this program can be found in the title 22 engineering report.

Advanced Treated Recycled Water Quality Examples
The quality of advanced treated recycled water produced elsewhere in the state provides an opportunity to characterize the effectiveness of treatment processes for removing pollutants and is an indicator of the water quality expected based on Pure Water Soquel treatment design. As an example, Monterey One Water has been operating the Pure Water Monterey indirect potable reuse facility since February 2020 and uses a very similar treatment process as proposed for Pure Water Soquel. Both facilities include ozone pretreatment, membrane filtration, RO filtration, and UVAOP. Because the treatment processes are so similar, the water quality at Pure Water Monterey provides a useful analog for what could be expected from Pure Water Soquel.

Monitoring data submitted by Monterey One Water indicate that Pure Water Monterey has never exceeded an MCL, notification level, response level, or priority pollutant threshold in the recycled water. Not only have the MCLs, notification levels, response levels, and thresholds not been exceeded, the vast majority of samples do not have detectable concentrations. The CEC monitoring, which includes 1,4 dioxane, perfluorooctane sulfonate and perfluorooctanoic acid (the PFAS compounds PFOS and PFOA), and sulfamethoxazole (an antibiotic), in addition to other compounds, has yielded nondetectable concentrations of these constituents, indicating little threat to human health from these pollutants and that the treatment process is effective in removing a wide range of different pollutants. In addition, the bioanalytical screening has always returned nondetectable results, suggesting that there is little likelihood of harmful unsampled pollutants present. The treatment process implemented at Pure Water Monterey (and proposed for Pure Water Soquel) is highly effective in removing a very large suite of different types of pollutants. Based on discussions with staff from the Los Angeles, Santa Ana (Orange County), and San Diego Regional Water Quality Control Boards, indirect potable reuse facilities in those areas are also producing high-quality water that is safe for human consumption and the environment. It is reasonable to believe that the treatment process at Pure Water Soquel will be similarly effective in removing pollutants.

Conclusions
Based on the extensive monitoring requirements, robust treatment process, and the quality of water being produced at similar facilities both in the Central Coast region

and elsewhere in the state, the Central Coast Water Board has no reason to believe that the quality of the water produced at Pure Water Soquel will contain constituents in concentrations that pose a threat to human health or the environment.
Change made: None.

Unique Comment 1, First Comment Period:

"The anti-degradation testing used Advanced Treated Water from another facility in California. Where did that testing water come from?"

Comment Submitted by: Rebecca Steinbruner

Staff Response to Public Unique Comment 1, First Comment Period:
The geochemical interaction analyses conducted as part of the antidegradation analysis utilized advanced treated recycled water produced at four California advanced water purification facilities. These different test waters were used to determine the optimal product water chemical composition for minimizing problematic geochemical interactions at Pure Water Soquel. The chemical composition of the test waters is described in the various geochemical interaction technical reports. However, these reports did not disclose the location from which these test waters came.
Change made: None.

Unique Comment 2, First Comment Period:

"Also, where can I find the ambient water quality data for all three areas of the injection wells?"

Comment Submitted by: Rebecca Steinbruner

Staff Response to Public Unique Comment 2, First Comment Period:
Water quality in the proposed project area is described in section 10.4 of the approved title 22 engineering report. Soquel Creek Water District is required to collect at least four samples, one each quarter, to provide baseline water quality prior to the operation of the project (California Code of Regulations, title 22, section 60320.200 [c]). Two quarters of baseline groundwater monitoring have been conducted but the last two quarters of sampling are yet to be completed. Once the quarterly baseline groundwater monitoring is completed and submitted to the Central Coast Water Board, the data can be shared upon request.
Change made: None.

Unique Comment 3, First Comment Period:

"Have the owners of the private wells that will be affected by the injection well effluent been contacted? Their historic water quality data could be invaluable in monitoring the impacts of the injection well effluent."

Comment Submitted by: Rebecca Steinbruner

Staff Response to Public Unique Comment 3, First Comment Period:
Private well owners whose wells are located within 10 years of underground travel time down gradient from the injection wells were notified about the project as part of the public hearing for the title 22 engineering report. There is no requirement for private well owners to collect or share water quality data. Baseline monitoring is being conducted in district monitoring wells to establish pre-project baseline water quality such that any impacts of recycled water injection can be identified.
Change made: None.

Unique Comment 4, First Comment Period:

"Can you please provide that information (final antidegradation report)? Did the Central Coast Regional Water Quality Control Board approve the Final Anti-Degradation Analysis, or are you accepting Soquel Creek Water District's summary and interpretation of those findings?"

Comment Submitted by: Rebecca Steinbruner

Staff Response to Public Unique Comment 4, First Comment Period:
Central Coast Water Board staff received the request for the final antidegradation report on October 2, 2023, and provided a copy of the report to Rebecca Steinbruner via email the same day. Regarding whether the final antidegradation report was approved by the Central Coast Water Board, Central Coast Water Board staff reviewed and concurs with the revised final antidegradation analysis report and the analysis and conclusions presented therein. However, like the proposed Permit, the report itself has not yet been approved by the Central Coast Water Board, and will only be approved if the Central Coast Water Board adopts the proposed Permit at a board hearing.
Change made: None.

Unique Comment 5, First Comment Period:

"Please include the link in the Staff Report to actual Final Anti-Degradation Analysis document upon which much of the Proposed Permit is based and incorporate the document as an appendix to the Proposed Permit. There is no link included to the document to provide the information to the public, and we are left to accept the interpretation of the lead agency, Soquel Creek Water District, and staff without having access to the actual data and methods of analysis."

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 5, First Comment Period:
Central Coast Water Board staff can provide copies of documents upon request, consistent with the requirements of the California Public Records Act. Central Coast Water Board staff provided the requestors with a copy of the final antidegradation report, dated March 2023, the same day the document was requested as part of the initial public comment period. The revised final antidegradation report, dated November 2023, was sent to all members of the public who submitted public comments as part of the notice of the second comment period.
Change made: None.

Unique Comment 6, First Comment Period:

"Please include the Santa Cruz Mid-County Regional Water Optimization Study as an appendix to the Proposed Permit to support the Staff Report statement on page 5 that: *'The Project will more broadly provide increased water supply reliability and resiliency for the Basin.'* This Study is fully funded by a grant through the California DWR Sustainable Groundwater Management Grant Program, is relevant to the Project's Proposed Permit, and is a public document. Therefore, this important Study should be included for reference."

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 6, First Comment Period:
The Santa Cruz Mid-County Regional Water Optimization Study evaluates different water supply portfolio strategies. While the study may be valuable for understanding water supply options for the region, its findings are only tangentially relevant to the draft waste discharge and water reclamation requirements being considered for Pure Water Soquel. The proposed Permit includes requirements, limits, and findings for the protection of water quality, human health, and beneficial uses but doesn't prescribe requirements related to optimizing the region's water supply portfolio. The Central Coast Water Board doesn't have the authority to make requirements related to optimizing a water supply portfolio. Statements made in the staff report regarding water supply reliability and resiliency are merely included to provide background and context for the proposed project. Furthermore, the statements are accurate regardless of the findings in the optimization study because Pure Water Soquel will provide water supply reliability and resiliency by providing a source of water that is less vulnerable to hydrologic and climatic variability.
Change made: None.

Unique Comment 7, First Comment Period:

"Please include discussion in the Staff Report regarding the Project's degradation of the high-quality groundwater, as is stated in the Proposed Permit in Appendix F. The Staff

Report is silent on the Anti-Degradation Analysis and the critical information stated in the Proposed Permit that the Pure Water Soquel Project product water is anticipated to cause degradation to the groundwater by injecting treated water with elevated levels of nitrate. (page F-17-18 in Proposed Permit: 'For nitrate, the project is expected to marginally degrade water quality because concentration of nitrate in recycled water is anticipated to be 3.5 mg/L as N compared to the current ambient concentration of 0.06 mg/L as N.')"

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 7, First Comment Period:
The staff report directs the reader to the Fact Sheet for information on the revised final antidegradation analysis. Additional information regarding the revised final antidegradation analysis as it relates to nitrate degradation is set forth in response to Theme Comment 1 above.
Change made: None.

Unique Comment 8, First Comment Period:

"Please consider the Proposed Permit conditional use to inject only potable water as an extension of regional water sharing agreements with adjacent water agencies, namely the City of Santa Cruz, for Aquifer Storage and Recovery (ASR) application rather than injecting recycled water. Please consider that, given the near-term State Water Resources Control Board approval of Direct Potable Reuse *by the end of this year,* Soquel Creek Water District could sell the Project's water directly to customers rather than injecting it into the high-quality groundwater, causing unknown problems with geochemical interaction."

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 8, First Comment Period:
Regarding the request to only allow the injection of potable water, Soquel Creek Water District is requesting a permit for the injection of advanced treated recycled water into the Purisima aquifer, not potable water. The Central Coast Water Board can't issue a permit for a potable water injection because the Soquel Creek Water District hasn't submitted an application for a potable water recharge project. Furthermore, injection of surface water treated pursuant to a DDW drinking water permit (i.e., potable water) can be permitted by enrollment in a general order and doesn't need board consideration (State Water Resources Control Board Water Quality Order 2012-0010, *General Waste Discharge Requirements for Aquifer Storage and Recovery Projects That Inject Drinking Water Into Groundwater*). Regarding the comment about direct potable reuse, the advanced treated recycled water produced by Pure Water Soquel will not be eligible for direct potable reuse because the treatment and permit requirements for direct potable reuse are different

than and in excess of the requirements for indirect potable reuse. The district would need to substantially modify the recycled water treatment process, have a new title 22 engineering report approved, and receive a new permit from the Division of Drinking Water if it wished to operate a direct potable reuse project.

Regarding the potential for geochemical reactions, the district worked closely with Central Coast Water Board staff on a series of three geochemical interaction analyses, each of which built upon the findings in previous reports. These analyses demonstrated that the likelihood of problematic geochemical reactions is low. Furthermore, the geochemical interaction analyses made recommendations for formulating the chemical composition of the product water such that problematic geochemical interactions would be unlikely. These recommendations were utilized in engineering the final product water chemistry and are incorporated into the proposed Permit as limits (e.g., upper pH limit is based on recommendations from the geochemical interaction analyses).

Change made: None.

Unique Comment 9, First Comment Period:

"Please include a link to the Bulletin 118 and include a copy as an appendix, along with links to the two AEM [aerial electromagnetic] studies of the MidCounty Groundwater Basin areas near the coast (September, 2017 by Midcounty Groundwater Agency-funded and November, 2022 State-funded) to inform the public of the most recent saltwater intrusion status analysis to support the need for the Project. Because the staff report states (page 4): '*The primary goal of the Project is to mitigate seawater intrusion in support of achieving the sustainable management criteria outlined in the Santa Cruz Mid-County Groundwater Sustainability Plan*', the goal should be supported with the Bulletin 118 and AEM documentation."

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 9, First Comment Period:

A link to Bulletin 118 is already included in the proposed permit, page ii of the WDR.

The statement included in the staff report is intended to provide context for the project and Permit. The proposed Permit does not consider requirements related to controlling seawater intrusion, mapping the extent or magnitude of seawater intrusion, or evaluating the hydrogeologic conditions of the entire Santa Cruz Mid County Groundwater Basin. As such, attaching Department of Water Resources Bulletin 118 reports on the hydrogeology of the basin or reports related to aerial electromagnetic surveys (AEM) is unnecessary because these reports do not provide information that is directly relevant to the waste discharge and water reclamation requirements being considered for adoption. Furthermore, the language in the staff report points the reader to the publicly available Santa Cruz Mid-County Groundwater Sustainability

Plan, where additional information and references can be found concerning basin hydrogeology, seawater intrusion, and AEM survey results.
Change made: None.

Unique Comment 10, First Comment Period:

"Please identify which District production wells will be downgradient sources of the injected Project water and include any and all analysis of potential impact of the Project's injected treated water and increased pumping from the District's existing production wells on water quality and production capacities for nearby Pine Tree Water Mutual, Bluff Water Mutual, and any and all private wells within 1/2 mile of all three Project injection wells. Figure 2 on page 6 of the Staff Report is only a conceptual diagram, but the production wells are not listed in the Report."

Comment Submitted by: Rebecca Steinbruner John R. Compton

Staff Response to Public Unique Comment 10, First Comment Period:
The information requested regarding downgradient production wells is included in the Fact Sheet of the proposed Permit, Table F-4. Additional information can be found in the title 22 engineering report approved by the Division of Drinking Water on April 25, 2023. Central Coast Water Board staff can provide this report upon request. Hydrogeological impacts, including anticipated water level changes after Pure Water Soquel is implemented, and impacts to non-Soquel Creek Water District wells are discussed extensively in section 11, *Groundwater Recharge Impacts,* of the title 22 engineering report.
Change made: None

Unique Comment 11, First Comment Period:

"Please provide data stating production volume increases anticipated for non-injection wells pumping from the A and BC units and anticipated extraction decreases in the Tu unit to support the Staff Report statement on page 5: 'The Project will inject advanced treated recycled water primarily into the Purisima A aquifer, with a small portion going into the Purisima BC aquifer. This will help to mitigate seawater intrusion in the target injection aquifers and also in the Purisima F and Tu aquifers, where no injection will occur, because the Soquel Creek Water District will be able to increase municipal pumping in the target injection aquifers and reduce pumping in aquifers not receiving recycled water.'"

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 11, First Comment Period:
The changes in pumping distribution described in the proposed Permit are proposed changes to be implemented in the future once the Pure Water Soquel project is

operational. As such, no data is available because the pumping distribution changes have not yet occurred. The statement included in the staff report was taken from descriptions in the adopted EIR produced on behalf of Soquel Creek Water District.
Change made: None.

Unique Comment 12, First Comment Period:

"Please include data as an appendix regarding baseline water quality analysis conducted for the nearby non-District wells potentially impacted by the Project injected treated water. The Staff Report states on page 5: 'Production wells owned by the Soquel Creek Water District and located downgradient from Project injection wells will extract a mixture of advanced treated recycled water and native groundwater for potable use. Groundwater modeling has estimated that the Soquel Creek Water District's wells will extract 37% of the injected water over a 25-year timeframe.'"

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 12, First Comment Period:
Groundwater quality for the project area is described in section 10 of the title 22 engineering report and project impacts are described in section 11. A description of the modeling efforts used to estimate the fraction of recycled water arriving at downgradient wells is included in section 11.2 of the title 22 engineering report. Additional information regarding water quality in nearby water supply well is included in section 5 of the revised final antidegradation analysis. The quality of water arriving at the wells will reflect the mixing ratio of native groundwater to advanced treated recycled water at any point in time, for a particular well. The treatment plant and proposed Permit are designed such that the injected water will never contain pollutants that exceed relevant standards established for the protection of human health and the environment (e.g., MCL, notification level, etc.). As a result, the recycled water arriving at a supply well is unlikely to ever contribute pollutants in excess of relevant standards. Calculating the mixed concentration of pollutants arriving at the wells is unnecessary as long as injectate concentrations won't exceed the standard. Soquel Creek Water District monitors the quality of existing supply wells extensively as part of the public drinking system permit requirements from the Division of Drinking Water, and this data can be evaluated by members of the public if they wish to determine water quality baselines. This data is available for the public to view at the Division of Drinking Water's Safe Drinking Water Information System website, https://sdwis.waterboards.ca.gov/PDWW/. Additionally, much of the data is also available at the State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program (GAMA) online geographic information system: https://www.waterboards.ca.gov/water_issues/programs/gama/online_tools.html
Change made: None.

Unique Comment 13, First Comment Period:

"Please include links to any and all actual reports and data that provided the basis for Regional Water Quality Control Staff's Proposed Permit for the Project as stated on page 5 of the Staff Report, rather than footnotes referring to the documents 'submitted pursuant to' various statute requirements or described vaguely:

> '**Rationale for Proposed Permit Requirements**
> The Central Coast Regional Water Quality Control Board (Central Coast Water Board) developed the requirements in this proposed Permit based on: Information submitted in the Pure Water Soquel Engineering Report[4]; Information submitted in the Pure Water Soquel Report of Waste Discharge[5] ; Recommendations for the water reclamation requirements in the State Water Resources Control Board (State Water Board) Division of Drinking Water's (DDW) letter titled Conditional Acceptance of the Title 22 Engineering Report for Pure Water Soquel Groundwater Recharge and Replenishment Project, (4490006-701); and Water quality control plans, policies, and other available information.'"

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 13, First Comment Period:
Central Coast Water Board staff will provide copies of the report of waste discharge, title 22 engineering report, and DDW conditional acceptance letter upon request by any party. The water quality control plans and policies are available for the public to view on the internet. Internet links to the Recycled Water Policy, Antidegradation Policy, and Basin Plan are included in the WDR and Fact Sheet sections of the proposed Permit. Most internet search engines will quickly return links to the California Code of Regulations, California Water Code, and other plans, policies, and laws of interest.
Change made: None.

Unique Comment 14, First Comment Period:

"Please include a discussion of regional water transfers available with adjacent water providers, namely the City of Santa Cruz, in the Staff Report on page 8, and include references to the District's Pilot Project with the City of Santa Cruz Water Dept. for in lieu groundwater recovery. https://www.watereducation.org/aquafornia-news/santa-cruz-soquel-creek-water-propose-extending-supply-sharing-pilot-program

Staff's Report on page 8 is silent on this critical information that included a five-year Pilot Study for water transfers that included a two-year bench study proving water safety

supporting regional water transfers, resulting in a five-year Agreement for seasonal water purchase supporting regional water sharing, claiming instead that the Pure Water Soquel Project is the only supplemental supply project available:
'Without the Project, the Soquel Creek Water District would be required to implement significant water use restrictions to limit Basin extraction to no more than 2,300 acrefeet per year (AFY)'"

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 14, First Comment Period:
Neither the proposed Permit nor the staff report state that Pure Water Soquel is the only supplemental supply project available. Similarly, neither the proposed Permit nor the staff report consider water supply optimization strategies for the region. The statement included in the staff report is merely summarizing conclusions from the economic study referenced in the staff report (Haddad and Pratt, 2018) and is included to provide context for the benefits of the project. Evaluating whether Pure Water Soquel is the most optimized supplemental water supply project for the region is outside of the Central Coast Water Board's authority and outside of the requirements and limits considered by the proposed Permit. As such, including a discussion of water supply optimization for the region is not relevant to the proposed Permit.
Change made: None.

Unique Comment 15, First Comment Period:

"Please include in the Staff Report the following important items stated under 'NOTICES' in the Proposed Permit on page 26 to better inform the public:

11.3. These requirements have not been reviewed by the United States Environmental Protection Agency (USEPA) and are not issued pursuant to Clean Water Act section 402.

11.4. Any person aggrieved by this action of the Central Coast Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and CCR title 23, section 2050. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Permit, except if this date falls on a Saturday, Sunday, or State holiday, then the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request. The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit must not be affected."

Comment Submitted by: Rebecca Steinbruner and John R. Compton

Staff Response to Public Unique Comment 15, First Comment Period:
The staff report does not include requirements or proposed actions; it is an informational document, and it is not itself a document upon which a petition can be based. (See, Cal. Water Code, § 13320.) Furthermore, the proposed language is included in the proposed Permit (a document upon which a petition can be based) and in the agenda for each Board meeting.
Change made: None.

Unique Comment 16, First Comment Period:

"Better ideas: Unlike many inland areas, this area gets much rainfall for its population. The history of mankind has shown that it can be collected, and stored for later use. Nothing new…just do as other groups have done for centuries. History proves its success.

A. Increase the capacity of the Loch Lomond Reservoir by raising the level of the dam/reservoir. Fairly easy to do. Why not?

B. Build the proposed dam/reservoir at Glenwood. The SCWD [Soquel Creek Water District] already owns the land. Why not capture more water there for later use? This concept has been used for centuries for good reasons. Why not?"

Comment Submitted by: Dick Zscheile

Staff Response to Public Unique Comment 16, First Comment Period:
As part of the Environmental Impact Report (EIR) adopted by Soquel Creek Water District on December 18, 2018 for Pure Water Soquel, alternatives to the project were considered. Some of the alternatives that were considered but rejected from further analysis include construction of a new reservoir and purchasing excess winter surface water from the City of Santa Cruz's San Lorenzo River and north coast sources. The construction of a dam at Glenwood was specifically discussed in the EIR but was rejected because the amount of land owned by Soquel Creek Water District in this area is not enough to accommodate a reservoir and associated facilities. Reservoir alternatives for locations elsewhere in the county were rejected because of challenges related to feasibility, cost, and environmental impacts. Purchasing from the City of Santa Cruz was rejected because of uncertainty regarding availability and requirement to return water in dry years, environmental impacts, timeliness, and affordability. It is unclear if expanding Loch Lomond was specifically evaluated in the EIR. However, it is reasonable to believe that expanding Loch Lomond would encounter similar challenges as those identified in the EIR for reservoir development and surface water purchases. Regardless of the alternatives identified in the EIR, the Central Coast Water Board is considering only the waste discharge and water reclamation requirements for the

proposed Pure Water Soquel project. Consideration of water supply alternatives has already been performed in accordance with the California Environmental Quality Act and as described in the EIR. Approval of a permit for Pure Water Soquel does not preclude the development of alternative water supply projects such as those suggested by the commenter.
Change made: None.

Unique Comment 17, First Comment Period:

"Pure Water Soquel's acknowledgement that they will be degrading groundwater with known NO3-N of ~3.5ppm and untested-for pharmaceutical metabolites.

Coupled that with advances in graphene-based desalinazation membrane technology research being undertaken at Stanford which promises to reduce desal costs by an order of magnitude.

The Soquel plant will be obsolete before the first breaker is flipped.

Desal promises to be vastly cheaper than the Soquel annual maintenance costs with a much more pure product in addition.

There is a psychological observation that people are unable to backtrack on a bad decision once it's been made. Help them out in this regard and stop this thing, thank-you."

Comment Submitted by: Dave Steinbruner

Staff Response to Public Unique Comment 17, First Comment Period:
Soquel Creek Water District anticipates that the injectate water quality will have a nitrate-N concentration of 1.67 mg/L (see response to Theme Comment 1 for details). However, the project is not expected to have a significant impact on the quality of the aquifer with respect to nitrate. This concern is discussed in the response to Theme Comment 1. Soquel Creek Water District does not expect water quality degradation by "untested-for pharmaceutical metabolites" and has never made an acknowledgement to this effect. However, the Central Coast Water Board understands that the public is concerned about the potential for pharmaceutical byproducts in the advanced treated recycled water. The treatment process proposed for Pure Water Soquel makes it unlikely that pharmaceuticals won't be removed, and the monitoring program for constituents of emerging concern (CEC) provides verification that unregulated constituents aren't present in the product water in quantities that give cause for concern. The treatment process and monitoring program are described in greater detail in the response to Theme Comment 2.

Regarding the comments about desalination as an alternative to the project, this was considered as part of the Environmental Impact Report (EIR) adopted by Soquel Creek Water District on December 18, 2018, for Pure Water Soquel. The EIR determined that for many impacts, desalination would be less significant than Pure Water Soquel. However, desalination was determined to be a less favorable alternative than Pure Water Soquel because of the potential permitting and regulatory challenges, impacts to species from entrainment, impacts to water quality in the Monterey Bay National Marine Sanctuary, energy consumption and greenhouse gas emissions, and construction-related impacts. Regardless of the alternatives identified in the EIR, the Central Coast Water Board is considering only the waste discharge and water reclamation requirements for the proposed Pure Water Soquel project. Consideration of water supply alternatives has already been performed in accordance with the California Environmental Quality Act and as described in the EIR. Approval of a permit for Pure Water Soquel does not preclude the development of alternative water supply projects such as desalination.
Change made: None.

Unique Comment 18, First Comment Period:

“Just say NO to injecting contaminates into our ground water. Do not allow this plan to go through - Pure water is a misnomer.”

Comment Submitted by: Lynne Ann DeSpelder

Staff Response to Public Unique Comment 18, First Comment Period:
Comment noted. The responses to Theme Comments 1 and 2 provide additional information regarding the likelihood of water quality and human health impacts.
Change made: None.

Unique Comment 19, First Comment Period:

“Is the State of California requiring a Final Antidegradation Analysis from Soquel Creek Water District prior to permitting the Purewater Soquel Treatment Facility to operate? Is the Final Antidegradation Analysis report available to the public? If so, please provide the link to this crucial study.

Please require Soquel Creek Water District to complete a Final Antidegradation Analysis on the Purewater Soquel Project prior to issuing an operating permit for the Purewater Soquel Treatment Plant, prior to permitting injection of the recycled water produced by the Purewater Soquel Treatment Facility into drinking water aquifers in Santa Cruz County, and prior to permitting discharge of wastes from this facility into the Monterey Bay National Marine Sanctuary. Please include in the analysis all pollutants

currently monitored, or planned for monitoring, in our treated wastewater by state and federal agencies, including pollutants that are currently unregulated in drinking water."

Comment Submitted by: Debra Wirkman

Staff Response to Public Unique Comment 19, First Comment Period:
The previous response to Unique Comment 4 addresses questions posed about the revised final antidegradation analysis. Regarding the comment about discharges to Monterey Bay National Marine Sanctuary, the proposed Permit for Pure Water Soquel does not authorize discharge to the Monterey Bay. Rather, the membrane filtration and reverse osmosis wastewater produced at Pure Water Soquel will be discharged to Monterey Bay by the City of Santa Cruz's Wastewater Treatment Facility in accordance with a proposed NPDES permit. As such, an antidegradation analysis isn't required for discharges to Monterey Bay as part of the Pure Water Soquel proposed Permit. The City of Santa Cruz's proposed NPDES permit renewal is being considered for adoption at the Central Coast Water Board's December 14-15, 2023 regular meeting. The NPDES permit renewal proposes to authorize the discharge of membrane filtrate and reverse osmosis wastewater from Pure Water Soquel. The Fact Sheet of the proposed NPDES permit describes compliance with the Antidegradation Policy as it relates to discharges to Monterey Bay. The proposed NPDES permit can be accessed at the Central Coast Water Board's *Tentative Orders* webpage, at the following link: https://www.waterboards.ca.gov/centralcoast/board_decisions/tentative_orders/ Regarding the comments about pollutants that are or will be monitored in the recycled water, the monitoring and reporting program in the proposed Permit for Pure Water Soquel describes all of the pollutants, including those that are currently unregulated in drinking water, that are proposed to be monitored. Pollutants present in the secondary treated effluent from the City of Santa Cruz Wastewater Treatment Facility, which will provide the source water to Pure Water Soquel, can be found in the monitoring reports submitted by the City of Santa Cruz in accordance with its NPDES permit requirements. The monitoring data can be viewed by members of the public on the California Integrated Water Quality System[2] web portal. The list of constituents that are required for monitoring at the City of Santa Cruz Wastewater Treatment Facility can be seen in the City's existing NPDES permit or in the proposed NPDES permit renewal, described above.
Change made: None.

Unique Comment 20, First Comment Period:

[2] Information about acquiring public reports from the California Integrated Water Quality System (CIWQS) can be found here: https://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.html

"While I appreciate that injection of water back into our aquifer is one means of mitigating salt water intrusion, it is unacceptable [sic] risking contamination of our water. No thank you to this project."

Comment Submitted by: Debra Wirkman

Staff Response to Public Unique Comment 20, First Comment Period:
Comment noted. The responses to Theme Comments 1 and 2 provide additional information regarding the likelihood of water quality and human health impacts.
Change made: None.

Unique Comment 21, First Comment Period:

"I am writing in opposition to the Pure Water Soquel application to inject treated wastewater into the groundwater aquifer in mid Santa Cruz County. While we do need to address the serious issue of seawater intrusion to the aquifer, this approach carries significant risks."

Comment Submitted by: Richard James

Staff Response to Public Unique Comment 21, First Comment Period:
Comment noted. The responses to Theme Comments 1 and 2 provide additional information regarding the likelihood of water quality and human health impacts.
Change made: None.

RESPONSES TO SECOND COMMENT PERIOD

Comments received between November 7 and November 21, 2023

COMMENTS FROM MEMBERS OF THE PUBLIC

Theme Comment 1, Second Comment Period:

The two comment letters received during the second comment period expressed concern about the anticipated nitrate concentration in the advanced treated recycled water relative to the ambient concentration in the aquifer, the chloride concentration in the injected water, and other contaminants in the injected water. Direct transcriptions of comments that revolved around this theme are included below.

- "The revised nitrate levels of 1.7 mg/L are still too high to inject into the high-quality waters of the Purisima Aquifer and the reverse osmosis treatment should be upgraded to remove nitrate to be no higher than the 0.06mg/L nitrate levels of the ambient groundwater. Soquel Creek Water District should not be allowed to degrade the high-quality waters of the aquifer, under State Water Resolution 68-16 Anti-Degradation requirements.

Soquel Creek Water District should not be allowed to degrade the high-quality waters of the Aquifers. That would certainly fly in the face of 'sustainability'."

- "I object to any and all of the Project's potential degradation of the high-quality waters in the Purisima Aquifer with injectate containing nitrate higher than 0.06 mg/L, chloride at 33 mg/L and any and all other contaminants and pharmaceuticals, endocrine disruptors and other unknown contaminants that are not regulated by the State, and feel the Final Anti-Degradation Analysis results prove it would be a violation of Resolution 68-16 because the injected effluent water quality will degrade the groundwater with nitrate and chloride that are not present at those levels now.

  Please do not permit this Project to go forward until nitrate level of the finished injection water is modified to be within +/- 0.1 mg/L of the ambient 0.06 mg/L nitrate level of the groundwater. This is within the realm of purification the applicant has publicly claimed and can be accomplished with reverse osmosis. More stringent reverse osmosis treatment would also likely remove other contaminants to a lower level, and perhaps completely. This will protect the cumulative water quality in dry years when the aquifer downgradient flow is reduced and thereby reducing the mixing and dilution of the Project injected treated water, and also reduce the possible adverse health impacts of nitrate on young children, infants and the unborn.

  California's anti-degradation policy is provided in the State Board's Resolution 68-16, which provides in part:

  Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

  Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality water will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The relevant federal regulations to maintain water quality are incorporated as requirements of the Porter-Cologne Water Quality Act. Water Code sections 13370, 13372(a) and 13377.

'The exhaustion doctrine provides that unless an objection is presented before an agency, so that the agency can respond to it, the objection is forfeited'

L.A. Waterkeeper vs. Cal. [California] State Waterboard Res. [Resources] Control Bd. [Board] (2018) Cal. Super. LEXIS 2823"

Comment Submitted by: Richard and Nancy Wameling, and Rebecca Steinbruner

Staff Response to Theme Comment 1, Second Comment Period:
The response to Theme Comment 1, First Comment Period, addresses these new comments from the public regarding the nitrate concentration in the injected water. As discussed in the previous response to Theme Comment 1, First Comment Period, the project is compliant with applicable laws, plans, and policies, including the Antidegradation Policy (Resolution 68-16). Regarding the comments about the chloride concentration in the injected water, the chloride concentration is still lower than ambient concentrations in the Purisima A unit and equal to concentrations in the Purisima BC unit. As such, the project will not degrade water quality with respect to chloride. Comments about concerns for other contaminants in the injected water (e.g., endocrine disruptors, etc.) are outside the scope of the changes identified in the second notice and are already addressed in the response to Theme Comment 2, First Comment Period.
Change made: None.

Theme Comment 2, Second Comment Period:

The two comment letters received expressed concern about degradation from chloride and the geochemical evaluation. Direct transcriptions of comments that revolved around this theme are included below.

- "Also, increasing the chloride levels of the injected water to 33 mg/L will cause degradation and potentially other contamination due to the chemical reactivity of the higher chloride levels. Although the application claims the chloride is 46 mg/L in the [Purisima] A Unit of the aquifer, due to sea water intrusion, there is no information to show that is representative of the groundwater

quality at all three injection well sites."

- "The claims made on Fact Sheet page F-18 are vague, not supported by data regarding how the injected water quality would be 'stabilized' and do not incorporate more recent claims made in the NOTICE document that chloride levels will be much higher than initially stated (33 mg/L rather than 3.1 mg/L).

  'The geochemical evaluation concluded that, with appropriate product water stabilization, the Project is unlikely to cause geochemical interactions that will result in water quality less than that established in relevant state policies or unreasonably affect beneficial uses.'

  When Soquel Creek Water District constructed the Twin Lakes Church injection well and conducted tests using potable water from their distribution system, they were required to neutralize the chloride with thiosulfate in a Baker Tank before injecting it into the Aquifer for their tests.

  Please explain and provide data to substantiate the claim that injecting finished Project water containing 33mg/L chloride into the aquifer will not be a problem.

  Chloride is very reactive and potentially could cause geochemical interaction if not stabilized."

Comment Submitted by: Richard and Nancy Wameling, Rebecca Steinbruner

Staff Response to Theme Comment 2, Second Comment Period:
Chloride is a minimally reactive ion. It is commonly used as an added or intrinsic tracer in groundwater transport investigations precisely because it has low affinity to react with other constituents or to sorb to aquifer materials. The commenters may be confusing the chloride ion with chlorine, which is highly reactive but is not relevant to the changes described in the second notice for public comment and was considered as part of the geochemical interaction analyses conducted. Regarding the comment that there is no information available on the water quality at the injection sites, we refer the commenters to the title 22 engineering report and revised final antidegradation analysis report on the Pure Water Soquel webpage (https://www.soquelcreekwater.org/261/Reports-Studies). Both reports include information on water quality and chloride concentrations in the project area, as measured at various wells. Information on product water stabilization as it relates to controlling geochemical reactions is included in the title 22 engineering report and in the geochemical evaluation reports that are included as attachments to the title 22 engineering reports.
Change made: None.

Unique Comment 1, Second Comment Period:

- "Please show clear evidence of what the water quality analysis results of ambient groundwater in the area of all three injection wells (Willowbrook, Monterey and Twin Lakes). Please produce the data and reports for the public. The 'inadvertent' data submissions initially submitted and the 'current system redesign' give no confidence to the public that the applicant has realistic data or that they are truthful in their reporting.

  Please produce the baseline water quality reports and data of the Pine Tree Water Mutual, Pot Belly (Bluff) Water Mutual and 830 Pine Tree Lane private domestic well, and any and all other private wells in the areas of the other two injection wells. These private wells will most likely be adversely affected by the Project's contamination by increased chloride in the injection waters, leading to arsenic spikes in the potable water.

  Also, the Monterey Injection Well baseline water quality data for multiple nearby private domestic wells is not included in the public information here. Please provide it to the public for transparency and include any and all mitigations for potential contamination of those private wells.

  Fact Sheet page F-9:
  There are 15 private domestic supply wells located near the Monterey well that capture injected water, based on groundwater modeling simulations.

  'Without producing the data upon which the Water Board makes its decisions for permitting, the action can be justifiably viewed as arbitrary, capricious, or lacking in evidentiary support.'"

  Comment Submitted by: Rebecca Steinbruner

Staff Response to Unique Comment 1, Second Comment Period:
The comments and requests for data are outside of the scope of the changes identified in the second public notice. Much of the water quality data being requested is already publicly available in the title 22 engineering report and revised final antidegradation analysis. Even at 33 mg/L, the chloride concentration is much lower than any relevant water quality objectives for the protection of human health or the environment, and the proposed discharge is compliant with applicable laws, plans, and policies.

Regarding the potential for “arsenic spikes,” this was evaluated as part of the geochemical interaction analysis and results of those analyses demonstrated that problematic arsenic and other metal mobilization is unlikely.
Change made: None.

Unique Comment 2, Second Comment Period:

- Please present evidence that the Applicant has met all CEQA [California Environmental Quality Act] requirements related to the revisions to the Pure Water Soquel Project treatment modifications mentioned in the Water Board's public information:

  ‘The final design that is being developed for Pure Water Soquel is anticipated to have a product water nitrate-N concentration of 1.67 mg/L, as described in Table 8-6 of the title 22 engineering report." (page 1 and 2 of NOTICE) [Notice of Changes and Opportunity to Comment] and
  Attachment 2 [Attachment 2 of Notice of Changes and Opportunity to Comment], page 3:

  The data used to prepare Table 6-2 for the Final Draft Anti-Degradation Report (March 2023) was modeled by Black & Veatch and the data was prepared with a preliminary iteration of the treatment process design. At that time the pre-treatment was a nitrifying biologically aerated filter (N-BAF) and the post treatment process utilized calcium hydroxide for stabilization, which does not contribute chloride concentrations to the finished water. Thus, following post treatment the resulting projected finished water quality for this previous treatment train was Chloride = 3.1 mg/L, Nitrate = 3.5 mg/L as N and TDS = 92 mg/L.

  The updated Table 6-2 data for the Revised Final Draft Anti-Degradation report (November 2023) was modeled by Black & Veatch and the data was prepared with the current treatment process.

  The current design utilizes ozone addition as pretreatment. The final design of the Pure Water Soquel project is reflected in the Title 22 Engineering Report and does not include the N-BAF pre-treatment; thus, it has the lower nitrate concentration of 1.67 mg/L as N.

  To date, there have been no notices to the State Clearinghouse that the Project is being modified to include an ozone pre-treatment facility at the Project's treatment facility on Chanticleer Avenue.
  https://ceqanet.opr.ca.gov/Search/serp?q=purewater+soquel+project

The Project's 2021 Addendum did not include an ozone pre-treatment.

Exhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action. Objections that a project does not comply with CEQA mandates must be presented "orally or in writing during the public comment period" before the agency takes final action on the project. If the objections are not presented in that time period, they are waived. Public Resources Code section 21177; Tahoe Vista Concerned Citizens v. County of Placer (2000) 81 Cal.App.4th 577, 594, 96 Cal. Rptr. 2d 880; Citizens for Responsible Equitable Environment Dev. v. City of San Diego (2011) 196 Cal.App. 4th 515, 527-528, 129 Cal. Rptr. 3d 512."

Comment Submitted by: Rebecca Steinbruner

Staff Response to Unique Comment 2, Second Comment Period:
The comments from the public are outside the scope of the changes identified in the second public notice. The second public notice described changes in the anticipated nitrate and chloride concentration and the assimilative capacity estimates. The changes in treatment design from N-BAF to ozone pretreatment were reflected in the title 22 engineering report, prior to the first public notice. The comment that the change from N-BAF to ozone isn't compliant with CEQA and wasn't included in the 2021 environmental impact report (EIR) addendum does not appear to be accurate. The 2021 EIR addendum describes the design change from N-BAF to ozone pretreatment and evaluates the potential environmental impacts, starting on page 5. The addendum was adopted by the Soquel Creek Water District board of directors on October 5, 2021 and a notice of determination was filed with the Governor's Office of Planning and Research State Clearinghouse on October 7, 2021.
Change made: None.

Unique Comment 3, Second Comment Period:

Please explain why the water travel time for the Twin Lakes Injection Well on pages C-5 and C-6 for the Twin Lakes Church injection well differ so much, and both titles claim to be from the Final Report issued March, 2023 and reference the same units of the Aquifer. The map on page C-5 also does not comport with the map on E-10. Please explain.

Comment Submitted by: Rebecca Steinbruner

Staff Response to Unique Comment 3, Second Comment Period:
The comment is outside the scope of the changes identified in the second public notice.

The travel times are different in maps C-5 and C-6 because C-5 shows the travel time in the Purisima A aquifer while C-6 shows travel time in Purisima Unit BC aquifer, as described in the caption for each of the figures in the proposed permit. It is unclear what figure the commenter is referring when they say "E-10"; there are no figures in section E of the proposed permit and the figures in section C only go up to 8.
Change made: None.

Unique Comment 4, Second Comment Period:

- "Please explain the incongruent information stated in the Summary that 0.57% of the available capacity would be consumed, when Attachment 1 [Attachment 1 of the Notice of Changes and Opportunity to Comment] Changes, page 2, state:

  The results for nitrate indicate that the project would consume 0.27% [sic] 0.57% of assimilative capacity, based on a comparison of background groundwater quality to injectate water quality and after scaling by the volume of injectate relative to the volume of water in each of the aquifer units. This analysis confirms that less than 10% of the basin's assimilative capacity will be utilized by this project and that beneficial uses will be protected.

  and

  Fact Sheet page F-9 states:

  2.2.4. Production Wells Soquel Creek Water District conducted groundwater modeling during the development of the Project to estimate the total amount of injected advanced treated recycled water that would be extracted by municipal and domestic water supply wells in the Basin. Modeling estimates that after a 25-year simulation, 37% of all the injected water was captured at these wells."

  Comment Submitted by: Rebecca Steinbruner

Staff Response to Unique Comment 4, Second Comment Period:
The second public notice summary explains that the revised estimate of assimilative capacity consumed is estimated to be 0.27 percent. The summary goes on to say that at the previous estimate of 0.57 percent, the project complied with the recycled water and antidegradation policies; at 0.27 percent the project consumes even less assimilative capacity and also complies. The information provided isn't incongruent, as stated by the commenter.

The comment about the amount of recycled water that is estimated to be captured at the downgradient domestic wells is outside the scope of the changes identified in the second public notice and is unrelated to estimates of assimilative capacity. Assimilative capacity is looking at the basin-scale ability to accept salt and nutrients while protecting beneficial uses. The estimates of recycled water arriving at a particular well are exactly that, estimates of the amount of recycled water that will be extracted by these wells relative to the total amount injected.
Change made: None.

Unique Comment 5, Second Comment Period:

> "Please explain why the map of aquifer layers on page C-2 do not comport with the map of the aquifer layers in the Revised Final Anti-Degradation analysis, Attachment 3, page 2-8 (Figure 2-6)."
>
> **Comment Submitted by:** Rebecca Steinbruner

Staff Response to Unique Comment 5, Second Comment Period:
This comment is outside the scope of changes identified in the second public notice. Both figures are conceptual cross sections showing the aquifers of the Purisima formation. However, the cross section in Figure C-2 of the proposed permit is in an east-west orientation, and the cross section in Figure 2-6 from the revised final antidegradation analysis is in a north-south orientation. The cross sections are depicting the same aquifer units, except viewed from different angles.
Change made: None.

Unique Comment 6, Second Comment Period:

> The information provided in the NOTICE states that the increased chloride level of the injected water (33mg/L rather than 3.1mg/L) will not degrade the groundwater also claims that the chloride level of the A Unit is 46mg/L. However, please explain and provide data to support the chloride levels of the BC Unit into which the Twin Lakes Church injection well will operate. What is the ambient chloride level of the BC Unit in the Twin Lakes Church injection well, the Estates Well, and private wells at Pine Tree Water Mutual, Pot Belly (Bluff) Water Mutual and other private wells at 830 Pine Tree Lane?
>
> **Comment Submitted by:** Rebecca Steinbruner

Staff Response to Unique Comment 6, Second Comment Period:
The ambient chloride concentration for the Purisima BC unit identified in the revised final antidegradation analysis (Table 5-6) is 33 mg/L, equal to the concentration in the

advanced treated recycled water. As such, the project will not change the chloride concentration in the BC aquifer.
Change made: None.

Unique Comment 7, Second Comment Period:

> "I am very concerned that the Applicant has continually changed the data and modifies the Project, leaving the public little confidence that the Project, when operational, will consistently meet the currently-stated anticipated levels of contaminants in the finished injected water. I am also concerned that the reactive chloride levels in the injected water will cause geochemical leaching of arsenic and other naturally occurring elements that could be potentially adverse for young children, the unborn and members of the population who have compromised health situations.
>
> The anti-backsliding provision of the Porter-Cologne Act ensures that effluent concentrations do not increase above levels that can be maintained by wastewater facilities at the time of permit reissuance. The anti-degradation provision requires permittees to track trends in water quality, and where increases are predicted or observed, evaluate the cause and identify control measures to arrest increases.
>
> Therefore, please incorporate stringent regular monitoring and reporting requirements for this Project and make any and all such reports and data easily accessible to the general public.
>
> Thank you for the opportunity to comment on the Project Proposed Permit modifications."

Comment Submitted by: Rebecca Steinbruner

Staff Response to Unique Comment 7, Second Comment Period:
The proposed permit includes an extensive monitoring and reporting program that requires sampling product water, groundwater, and constituents of emerging concern. All monitoring data and monitoring reports will be uploaded to the publicly accessible GeoTracker reporting website.
Change made: None.