

Response to Comments
on
Proposed Order No. R1-2019-0001

General Waste Discharge Requirements
For Dairies
Within the North Coast Region

Prepared by:
Staff of the North Coast Regional Water Quality Control Board

Procedure:

On November 1, 2018, the North Coast Regional Water Quality Control Board (Regional Water Board) issued a Notice of Public Workshop and Public Hearing and Intent to Adopt a mitigated negative declaration (MND) for Draft Order No. R1-2019-0001, General Waste Discharge Requirements for Dairies in the North Coast Region (draft Order).

On November 1, 2018, Regional Water Board staff submitted the draft Order, and supporting documentation (i.e., Initial Study) to the State Clearinghouse (SCH) for a 33-day California Environmental Quality Act (CEQA) review ending December 3, 2018 and assigned it SCH# 2018112016. A Public Notice was posted beginning and ending public review on those same dates. However, due to multiple requests at the November 14, 2018 Regional Water Board workshop, the Regional Water Board extended the public comment period to end on January 3, 2019. The notice of the draft Order was distributed to the Regional Water Board's Lyris list, five newspapers in the Region (Press Democrat, Eureka Times Standard, Trinity Journal, Siskiyou Daily News, and the Del Norte Triplicate) and was posted on the Regional Water Board's website.

The Public Notice stated that Regional Water Board would conduct a public hearing to consider adoption of the Proposed Order and MND on February 20 or 21, 2019, in the Regional Water Board Hearing Room or as announced in the Regional Water Board's agenda.

During the public comment period from November 1, 2018, to January 3, 2019, the Regional Water Board received comments from 11 individuals, representing state or federal agencies, environmental groups, dairy operators, and other interested parties. Regional Water Board staff have responded to all comments submitted in writing during the public comment period. The comment letters and staff's response to comments are posted on the Regional Water Board's website.

Substantive comments received during the public comment period are summarized below, followed by Regional Water Board staff responses. Where commenters have made similar comments, the substance of those comments is summarized and a single response presented. Revisions to the November 1, 2018, draft Order are reflected in the April 18, 2019 Proposed Order that will be considered for adoption by the Regional Water Board on April 18, 2019 and

are highlighted in a “redline-strikethrough” version. Copies of all written comment letters received during the public comment period are attached to this document.

The following individuals commented on the draft Order during the November 1, 2018 to January 3, 2019 comment period:

Chris Howard, Alexandre Family Farm
Jeannine Manna, California Coastal Commission (CACC)
Sean Bothwell, California Coastkeeper Alliance (CCKA)
Richard Macedo, California Department of Fish and Wildlife (CDFW)
Linda Crockett, Del Norte Resource Conservation District (DNRCD)
Jill Demers, Humboldt County Resource Conservation District (HCRCD)
Kimberly Burr, Sonoma County Resident
Bob Legge, Russian Riverkeeper (RRK); Jennifer Kalt, Humboldt Baykeeper (HBK); and
Nathaniel Kane, Environmental Law Foundation (ELF)
Dave Renner, Six Rivers Dairy Association (SRDA)
Deanne Meyer, David Lewis, Randi Black, and Jeff Stackhouse, University of California
Agriculture and Natural Resources (UCCE)
Paul Sousa, Western United Dairymen (WUD)
Confidential tribal consultation (Not included in this document)

Overview:

The April 18th Proposed Order retains the same overall framework as the November 1, 2018 draft Order. Regional Water Board staff revised the November 1, 2018, draft Order in response to comments from interested stakeholders. Revisions include: editorial changes; changes intended to improve clarity but do not change requirements; and substantive changes.

The following is a brief list of staff’s substantive revisions to the November 1, 2018 draft that are now included in the April 18, 2019 Proposed Order:

- Added language regarding water quality objectives, Basin Plan compliance, antidegradation findings, and compliance with the Nonpoint Source Enforcement and Implementation Policy (NPS Policy);
- Added a Work Plan to address nitrates in groundwater;
- Corrected or clarified information in response to agency comments (e.g., California Department of Fish and Wildlife and California Coastal Commission);
- Clarified riparian protection requirements;
- Modified the section discussing dairy odors;
- Revised dates in the Notice of Intent (NOI) and Water Quality Plan (WQP) due to the extension of the comment period to January 3, 2019 and a request from UCCE;
- Added a Nutrient Management Plan (NMP) work sheet questionnaire and reporting requirements to help meet NMP requirements, NPS Policy and Antidegradation Policy requirements and to facilitate public requests for information;
- Added surface water parameters were added in response to environmental organization concerns, to ensure compliance with the NPS Policy and Antidegradation

Policy requirements, and to obtain information for basin planning efforts on bacteria in surface waters;

- Added reporting requirement notification for any discharges that may affect human health;
- Added allowances for group monitoring to be considered by the Executive Officer under certain conditions.

Revisions made in response to comments received are noted in staff's responses below as grouped by subject. Changes are shown in the underline/strikeout version of the Proposed Order. Regional Water Board staff maintain that the Proposed Order is supported by the entire record and is necessary to support beneficial uses and meet water quality objectives.

Responses to Specific Comments

General Waste Discharge Requirements Comments:

- 1. Comment-** Humboldt County Resource Conservation District (HCRCD), University California Cooperative Extension (UCCE), and Russian Riverkeeper (RRK) commented that the GWDR needs an appendix to show all water sampling requirements and a table to show all other requirements and progress report due dates. The California Coastal Commission (CACC) suggested a flow chart for dairies by herd size would help in reviewing the GWDR requirements.

Response – Section J of the GWDR includes information titled “Reports and Notices” that summarizes surface water and groundwater sampling requirements. Additionally, the MRP includes a summary of reports and notices, including Extension Requests and Modification Requests in section III.

Regional Water Board staff will work with stakeholders to explain requirements as part of report writing workshops, during dairy inspections, or through routine correspondence. While not included in the Order, a FAQ Sheet will be created by staff after adoption to assist the regulated community in understanding and meeting their requirements. See also the response to comment below regarding a correction on herd size in the GWDR.

- 2. Comment** – HCRCD and UCCE noted an inconsistency in the GWDR between the number of dairy animals to be regulated in the Findings and the number to be regulated in the Conditions. California Coastal Commission (CACC) recommended regulation of a smaller size of dairies than proposed in the GWDR due to the amount of damage that one animal can do to stream or riparian area.

Response – Agreed. The typographical error in Finding 6 has been corrected. GWDR Finding 6 states that “dairies milking less than 10 cows, 10 water buffalo, 100 goats, 100 sheep, or equivalent must meet the discharge prohibitions but are not required to

submit an NOI.” This should say “...25 cows, 25 water buffalo, 100 goats, 100 sheep, or equivalent...” to match the Conditions on GWDR page 14.

Regarding the CACC comment on regulation of smaller dairies, there are currently no dairies within the North Coast Region that contain less than 25 mature dairy cows or 25 mature water buffalo. However, there are a few goat dairies smaller than 100 mature goats. Regional Water Board staff inspect these smaller dairies on a case-by-case basis and have already inspected several smaller goat dairies as part of the preparation for this draft GWDR. Any future new dairies smaller than 25 cows will be monitored for potential water quality issues. Finding No. 6 in the GWDR notes that the Executive Officer has the discretion to require smaller dairies to enroll in the GWDR if there is a potential for discharge of waste to surface water or groundwater.

- 3. Comment** – RRK requests a discussion on GWDR Finding 7 regarding the consequences if a dairy representative makes a false certification.

Response – Section II.D. of the MRP requires each dairy owner to sign the statement in their Annual Report and Noncompliance Report that: *“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this report and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”* The Water Quality Plan/Riparian Management Plan and the NOI include similar certifications.

Any false statements to the state government are reviewed by Regional Water Board staff and may be subject to enforcement action pursuant to section 13268 of the Water Code as described in section I of the GWDR.

- 4. Comment** – RRK states that the draft GWDR is not consistent with the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (NPS Policy), and Basin Plan requirements, including total maximum daily load (TMDL) implementation measures. CCKA argues that the draft GWDR violates the Water Code and NPS Policy because it fails to require specific, enforceable standards against which to measure existing management practices. CCKA also states that the draft GWDR violates the Porter-Cologne Act and NPS Policy because it lacks sufficient feedback mechanisms to determine achievement of water quality objectives protection of Beneficial Uses, and the draft GWDR contains iterative practices with no quantifiable milestones. CCKA commented that the NPS control implementation program must have feedback mechanisms so the Regional Water Board, dischargers, and the public can determine that purpose is being achieved. RRK asserts that the GWDR needs to include sampling of phosphorus and Escherichia coliform (*E. coli*) to show that BMPs are achieving TMDL compliance in section 303(d) listed watersheds. In addition, RRK recommends that dairies keep records for more than the minimum five years required by the draft GWDR.

Response – The GWDR complies with the NPS Policy and Basin Plan requirements. Under the NPS Policy the Regional Water Board must find that a program will achieve and maintain water quality objectives and beneficial uses. Under the NPS Policy, a program must meet five key elements that include: 1) addressing nonpoint source (NPS) pollution in a manner that achieves and maintains water quality objectives and beneficial uses, including any applicable antidegradation requirements; (2) description of the practices to be implemented and processes to be used to select and verify proper implementation of practices; (3) a time schedule where it is necessary to allow time to achieve water quality requirements and corresponding quantifiable milestones designed to measure progress toward reaching specified requirements; (4) feedback mechanisms to determine whether the program is achieving its purpose; and (5) the consequences of failure to achieve the stated purpose.

The GWDR addresses each of these elements as described below:

- a. The purpose of the GWDR is to address wastes from dairy operations that may impact surface water and groundwater in the North Coast Region. Implementation of the measures required by the GWDR will address pollution in a manner that attains objectives, beneficial uses, and meet the requirements of State Water Board Resolution No. 68-16 (Antidegradation policy). Compliance with the Antidegradation Policy is more fully discussed in Response number 5. The GWDR prohibits any activity that results in the discharge of waste that will cause or contribute to the exceedance of any water quality objective or cause a condition of nuisance. The GWDR has specific measures and performance standards that dairies are required to implement to attain compliance with water quality objectives and the Basin Plan.
- b. Water Code section 13360 generally prevents the Regional Water Board from requiring a discharger to employ a specific method of compliance. However, the Board may specify established performance standards in the GWDR and require dischargers to design, implement and report on methods and practices that meet those established performance standards. The Regional Water Board has set forth the practices, measures and performance standards in the GWDR that will meet the goals of the NPS policy. The GWDR requires dischargers to comply with requirements set forth in the Statewide Minimum Standards as described in Title 27, MRP provisions (for example requirements on pond lining in title 27 section 22562, and requirements on land application of manure in title 27 sections 22563 and 22564), Water Quality Protection Plan (WQP), Nutrient Management Plan (NMP), and Riparian Management Plan (RMP). In addition, discharges that cause or contribute to an exceedance of any applicable water quality objective is prohibited. The effectiveness of the practices will be assessed based on review of report submissions, including the annual reporting requirement. The GWDR requires practices to be modified if water quality objectives are not maintained.
- c. CCKA's arguments that the GWDR has iterative practices with no quantifiable milestones is misplaced and appears to be based on an analysis of permits adopted by other regional water quality control boards or the State Water Board. This GWDR

does not include explicit time schedules for compliance with applicable water quality standards because it requires dischargers to control their activities to attain immediate compliance with water quality objectives. Discharge Prohibition A.3 states: “The discharge of waste from a dairy that causes or contributes to an exceedance of any applicable water quality objective in the Basin Plan...is prohibited.” Through the development and submission of required reports and monitoring data, the GWDR sets forth quantifiable milestones and requirements that Dischargers must meet to ensure that the prohibitions and water quality objectives are met, and management practices are effective. As discussed under response b. above, the plans and reports Dischargers are required to submit will ensure facilities are designed, constructed, operated, and maintained to meet conditions of the Order and prevent adverse impacts to ground and surface water. Annual reporting that includes required surface and groundwater sampling will assess the effectiveness of the management measures in meeting objectives and addressing conditions in impaired waters.

- d. As discussed above, to provide feedback on whether the GWDR is meeting program goals, the GWDR requires surface and groundwater monitoring, development of a WQP, RMP, and NMP as well as annual reporting to evaluate the effective implementation of those plans. Surface water monitoring during three storm events (at least of rain 1-inch in 24-hours) for total ammonia nitrogen, and electrical conductivity (EC) is required. In addition, surface water must be monitored for bacteria (see MRP section below). Groundwater monitoring for nitrate, total dissolved solids, and total coliform bacteria is required. Additional monitoring may be required by the Executive Officer on a site specific or watershed specific basis.

The GWDR provides for inspections by Regional Water Board staff, evaluation of the submitted reports and monitoring data, and implementation of additional management measures if practices do not sufficiently control discharges. Additionally, the GWDR requires dischargers to report noncompliance events. Within 24 hours of a spill, discharge, or other non-compliance event that poses a threat to human health or the environment, the discharger must report the incident to the Regional Water Board. Within 15 days of the incident, a discharger must file a written report with the Regional Water Board detailing the steps taken to correct the condition and prevent recurrence. Adjustments to the plans and reporting may be required if practices are not adequately controlling discharges.

- e. The GWDR establishes the following consequence if requirements are not met:
 - i. Accelerated or additional monitoring to address non-compliance.
 - ii. Additional management practices or physical improvements to the facility, including a detailed improvement schedule if existing measures are not sufficient to meet GWDR conditions.
 - iii. Immediate corrective action required where onsite or offsite monitoring shows the facility is causing a condition of pollution, nuisance, contamination, or degradation of surface or groundwater.

- iv. Enforcement action, including assessment of administrative civil liability under section 13350, 13268 for failure to meet GWDR conditions or submit required reports.

Under the Regional Water Board's current record retention schedule, the Board will retain program files related to facilities active in the GWDR for as long as facilities are active in the permit plus a minimum of four years.

Commenter asserts the GWDR is not consistent with the Basin Plan and adopted TMDLs because it contains inadequate monitoring to assess whether discharges are affecting impaired waters. This concern is addressed in the response to Comment 25, MRP discussion below, regarding revisions to the surface water sampling.

5. **Comment** – RRK and California Coastkeeper Alliance (CCKA) both state that the draft GWDR violates the Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy), Resolution 68-16.

Response – The proposed GWDR is consistent with the Antidegradation Policy and the findings in the GWDR have been revised to reflect this determination. The Antidegradation Policy applies to discharges to high quality surface water and ground waters in the state.

The Antidegradation Policy requires that when high quality water exists (water quality that is better than applicable objectives) that quality must be maintained unless it is demonstrated that: 1) any changes will be consistent with the maximum benefit of the people of the state and will not unreasonably affect present or probable future beneficial uses; 2) the best practicable treatment or control is applied to limit any degradation that may occur. The Policy further provides that discharges to high quality waters are not allowed where such discharges would result in water quality less than that required by water quality objectives.

The GWDR complies with the Antidegradation policy. The GWDR is designed to control discharges in a manner that will be protective of water quality objectives and beneficial uses. As reflected in the revised Antidegradation findings in the GWDR, the Board finds that any lowering of water quality that may result will comply with the Antidegradation Policy as outlined below.

Commenter suggests that the Antidegradation Policy requires the establishment of a water quality baseline and asserts that the Regional Water Board must apply a method set forth in a 1995 EPA Workbook document to analyze discharges. The Antidegradation Policy does not require the Regional Water Board to undertake the analysis asserted.¹ For purposes of baseline water quality (i.e., the best water quality

¹ The Regional Water Board is not familiar with the *Interim Economic Guidance for Water Quality Standards* Workbook document cited by commenter and it is not clear how it applies to this action. It is also worth noting that the State Water Board has considered the State Antidegradation Policy as incorporating the federal antidegradation requirements where the Antidegradation Policy applies.

that has existed since the Policy was adopted in 1968), the Regional Water Board acknowledges that while waters throughout the region may be degraded for some constituents, waters are presumed high quality for others. Accordingly, a baseline analysis of all constituents in all waters throughout the North Coast Region to determine whether the Antidegradation Policy applies is unnecessary (and infeasible) because the Regional Water Board has already determined that the Policy applies. A constituent by constituent analysis is not required pursuant to the case cited by commenter, *Association de Gente Unida por el Agua v. Central Valley Regional Water Quality Control Board* (2012) 210 Cal.App.4th 1255 (*AGUA*). In *AGUA*, the court did not require the Regional Water Board to undertake a constituent by constituent analysis of existing water quality, rather it determined, as the Regional Water Board has here, that the Antidegradation Policy applies if the receiving water is high quality and an activity will discharge waste that will degrade the receiving water. Further, the State Water Board considered the Central Valley Water Board's antidegradation approach in the Eastern San Joaquin Order (SWRCB Order No. 2018-0002), and found that a generalized baseline analysis approach is sufficient and Regional Water Boards, "should not delay implementation of a regulatory program in order to conduct a comprehensive baseline assessment and analysis..." The Central Valley Water Board further explains that this especially applies where a general order imposes essentially the same iterative management approach regardless of whether the water is high quality.²

Commenter further asserts that the draft Order does not contain an adequate maximum-benefit analysis. The Antidegradation Policy provides no precise guidance on what a maximum benefit analysis must contain, but guidance from the State Water Board suggests that factors to consider include: economic and social costs, both tangible and intangible; environmental considerations; and benefits to be achieved with further pollution controls. The Regional Water Board should also consider alternative treatment and control methods and whether there are reasonable methods to avoid the lowering of water quality. The Regional Water Board considered these factors and an evaluation of the environmental impacts and measures to mitigate impacts are discussed in the GWDR and supporting Mitigated Negative Declaration/Initial Study. The Regional Water Board finds that any limited degradation that may occur even following implementation of all applicable management practices designed to control discharges is to the maximum benefit of the people of the State. The Regional Water Board has considered the social and economic significance of the dairy industry in the North Coast region and the important role that North Coast dairies provide in providing milk supplies and providing economic value and support to local communities. The Board finds that coupled with the environmental and water quality benefits that will result from implementation of the conditions in the Order, maintaining the North Coast dairy industry is consistent with the maximum benefit of the people of the state to prevent a loss of jobs and adverse impacts to local communities. The GWDR's antidegradation findings have been revised to further reflect the Regional Water Board's determination that any lowering of water quality will be to the maximum

² *In the Matter of Review of Waste Discharge Requirements General Order No. R5-2012-0116 for Growers Within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group*, SWRCB Order No 2018-0002. (2018).

benefit of the people of the state. Finally, commenter asserts the draft Order does not require Best Practicable Treatment or Control Methods (BPTC). The State Water Board did not define BPTC in the Antidegradation Policy, but based on guidance from the State Water Board, a discharger implementing BPTC methods should: compare methods to existing proven technology; evaluate performance data; compare alternative methods of treatment or control; and consider method used by the discharger or other similarly situated dischargers.

Because dairies are not a newly regulated program, the Regional Water Board and regulated community have extensive experience evaluating management methods for effectiveness and setting performance standards to ensure continued effectiveness in meeting water quality standards. Requirements in the GWDR that constitute BPTC include: submission and compliance with measures in WQPs, NMPs, RMPs, compliance with Statewide Minimum Standards required pursuant to title 27; and additional provisions and management measures outlined in the proposed Order that dischargers must implement to comply with the prohibition against discharges that may cause or contribute to exceedances of water quality objectives.

Surface and groundwater monitoring and reporting requirements ensure that dischargers are implementing BPTC methods and that any discharges are not leading to degradation of water quality beyond that allowed by the Antidegradation Policy. Reporting and monitoring requirements will determine the effectiveness of measures employed and provide feedback on whether additional modifications to practices are necessary and will be required to control discharges. Findings have been revised to further reflect the Regional Water Board's determination that the Proposed Order requires BPTC measures for enrolled dairies.

6. **Comment** – HBK commented that the draft GWDR should require pathogen sampling to ensure protection of beneficial uses (BUs), will result in degradation of drinking water, and doesn't include a mechanism to demonstrate compliance.

Response –Humboldt Bay and Arcata Bay are priorities for water quality protection and the GWDR was designed to be protective of BUs. The draft GWDR includes new requirements for riparian protection, improvements in the group sampling requirements (blind sampling will not be allowed), additional surface water sampling parameters (including pathogen indicator bacteria), and requirements of NMPs, all of which will ensure water quality protection. Having a single consistent permit will allow staff to spend more time on inspections, assess water quality protection and take progressive enforcement actions as necessary.

7. **Comment** – The CDFW states that CEQA requires that information developed in environmental impact reports (EIRs), negative declarations (NDs), and mitigated negative declarations (MNDs), be incorporated into a database which may be used to make environmental determinations. The agency requests that special status species and natural communities detected during project surveys be reported to the California Natural Diversity Database (CNDDB).

Response – The GWDR is generally a permit for existing conditions and does not require biological surveys prior to enrollment. Any new or expanding dairies with impacts that are not addressed in the MND and are subject to other agency approvals may require additional CEQA documents and compliance through a to-be-determined future lead agency, such as the county. Any projects requiring CEQA, such as at the location of new building sites, will have biological surveys done in accordance with CEQA.

8. **Comment** - HCRCD and UCCE recommend a note stating only existing dairies need to stay at or below their maximum herd size in their 2012 NOI (Reference: WQP page 2, #8, column 3).

Response – Agreed. See addition to WQP page 2, #8, column 3.

9. **Comment** – The CACC comment letter states that there are few specified best management practices (BMPs) described in the GWDR that could be employed to meet water quality standards. It would be more useful to list or reference a standardized list of water quality BMPs for operators.

Response – Dairies are required to have NMPs as part of the GWDR. Most dairies have Comprehensive Nutrient Management Plans (CNMPs) through the Natural Resource Conservation Service (NRCS) that list BMP projects specific to each dairy to protect water quality. In the past, the NRCS has helped to fund the development of CNMPs. Many water quality improvement projects have been implemented since the dairy program began in 2012. Regional Water Board encourage these projects because dairies receive professional assistance from specialists including the development of engineered site-specific designs. In addition, other specialists from entities such as RCDs, UCCE, and Regional Water Board staff visit dairies with the intent of helping to improve BMPs for water quality protection. BMPs are discussed and photographs of examples shown each year at Annual Report writing workshops held in the north and south part of the region for all dairies. Pursuant to Water Code section 13360, The Regional Water Board, generally cannot prescribe a manner or method of compliance with waste discharge requirements. The Regional Water Board may, however, set performance goals and standards that dischargers must meet such as a requirement to eliminate discharges and potential discharges. Staff may include site by site measures for water quality improvements in inspection reports or accepted practices may be discussed during annual report writing workshops which include photographs of management measures that have been found effective in controlling discharges.

10. **Comment** – DNRCD requested that dairies not be required to cover manure piles to reduce odors, that odors are not a problem in Del Norte County, and covering materials would be cost prohibitive. HCRCD and UCCE stated that requiring manure piles to be covered in the rainy season would be burdensome, cost-prohibitive, increase the chance of small pieces of plastic blowing away, and would not reduce odors; rather covering piles would create and maintain anaerobic conditions, which would increase odors. The UCCE states that covering of manure piles to reduce odor during the rainy season can be an effective management practice in hot arid climate but implies that it is

not suitable due to the high moisture content of manure in pasture-based dairies in the North Coast Region. Reference: GWDR Condition B.7. Odors.

Response – The Regional Water Board further researched literature and methods of reducing manure odors. BMPs vary by climate and conditions which applies to the wide range of conditions in the North Coast Region from Siskiyou to Marin counties. Much research is being done on reducing methane. The GWDR sentence will be removed that states: “In the winter rainy season, manure piles are required to be covered to protect air quality, reduce objectionable odors, and reduce the potential to discharge manure to surface waters or groundwater.” The sentence will be replaced with: “Dairies must practice best available technology to reduce objectionable odors as needed to reduce complaints, especially new dairies in locations not previously occupied by a dairy.” Local, state, and federal agencies help dairies and other farms to construct projects to meet environmental goals. Dairy operators are encouraged to participate in farm assistance programs.

11. Comment- DNRC, HCRCD, and UCCE commented that compost piles should be allowed to be closer to surface water bodies and supply wells than the GWDR requirement of 100’ without vegetation and 35’ with vegetation. They recommend identifying objectives to protect water quality. Also, example solutions were given including compost facilities with a concrete pad, proper runoff collection, and storage.

Response- GWDR Condition B.6. (page 19) states that: “A lesser setback distance may be allowed by the Regional Water Board if the discharger can demonstrate that the groundwater, geologic, topographic, and well construction conditions at the site are adequate to protect water quality.” Dairies can propose setback distances less than those stated above and explain the specific water quality protection in their WQP, Annual Report, and during Regional Water Board staff inspections. Staff will review these descriptions and protection on an individual facility basis.

12. Comment- DNRC, HCRCD, and UCCE commented that retention pond clean-out may not need to be required annually if the dairy has sufficient storage capacity for a longer period of time. For instance, some dairies with an oversized manure pond for the herd size may remove half each year or just the liquid portion.

Response- GWDR language under Conditions section B.2.g. allows dischargers to propose alternate clean-out schedules for site-specific conditions.

13. Comment – CACC recommends the addition of “the Coastal Act” to GWDR Conditions section G.2. Additionally, CACC recommends that dischargers must demonstrate that all local, state, and federal permits have been obtained prior to any construction actions.

Response – Agreed. “The Coastal Act” will be added to the above referenced sentence in the GWDR.

14. Comment - RRC commented that GWDR Conditions section J.5. states that; “...any noncompliance that endangers human health or the environment,” be combined with

the language from MRP II.B. that states: “any spill, discharge, or other type of compliance that violates the conditions of this Order and/or endangers human health or the environment within 24 hours...”

Response- Agreed. The GWDR and MRP language regarding spill reporting has been expanded to state that: “Any adverse condition including spills, discharges, or any other noncompliance that violates the water quality conditions of this Order and/or poses a threat to human health or the environment shall be reported to OES and Regional Water Board within 24 hours. See MRP Section II.B. Reporting.” The phone numbers are included in the MRP.

15. Comment- Kimberly Burr, Green Valley Creek, Sonoma County resident, submitted an email including general comments and three pictures of Green Valley Creek in the Russian River Basin. The email did not give specific sections of the draft GWDR to edit. Rather, the email listed general water quality protection needs and quotes from specific references. Recommendations included strict regulation of nutrient sources to prevent adverse impacts to BUs, measures to reduce sedimentation, generous setbacks from creeks with regard to manure pond irrigation and cows, placement of water troughs away from creeks and drainages, generous riparian buffers and vegetation to be protected and restored. The email states that manure and urine laden runoff must be strictly forbidden and that runoff containing pollution must be kept onsite or treated before placement on soil. It notes that grazing has led to trampled swales, drainages, and creek banks to the detriment of critical aquatic habitat, setbacks must be based on science, geology, soil type, and water temperature recovery efforts. Operations that harm water quality must cease to operate and the best available science must be employed requiring numeric limits for discharges, contain frequent monitoring, and inspections. The comments include concerns regarding harmful runoff which may contribute to toxic algal blooms and warm ocean water with increased pollutant loading that could lead to larger toxic events. It cites the need to prevent adverse impacts, eutrophication, and harmful algae that may be stimulated by nutrient enrichment. The email states “thank you for updating and including all requirements that fully protect BU’s of shared resources including migration, spawning, rearing, feeding, sheltering of species, and protecting cold water habitat.” The 2016 to 2018 photos of Green Valley Creek were labeled as showing turbid water, stagnant water, and algae.

Response – The draft GWDR addresses Ms. Burr’s concerns in several sections including conditions that include protection of beneficial uses, compliance with Antidegradation requirements CEQA analysis and required mitigation measures, Discharge Prohibitions, Waste Discharge Specifications, Enforcement, and Required Reports and Notices, which includes a Monitoring and Reporting Program (MRP). The MRP contains requirements for visual onsite inspections, surface water and groundwater sampling, and appendices to be submitted including a WQP, RMP, NMP information, Annual Reports, and if needed, Noncompliance Reports. In addition, Regional Water Board reviews these reports and water sampling data, conducts dairy inspections and education workshops for dairy operators, and gives informational presentations to the Regional Water Board. In response to Ms. Burr’s comment that

“excess nutrients can impact water quality when it rains or when it washes to surface water or groundwater,” please see Response to Comments 24-27 and 29 below.

- 16. Comment:** General comments from HCRCD, UCCE, and DNRCD concern dairies having enough time to be educated on the components of the draft GWDR and to fill out and submit reports with proper expert help.

Response: Additional time has been given for dairies to meet submittal deadlines for the Notice of Intent, Water Quality Plan, and Annual Report. This is due the comment of concern and the extension to the public review period of the draft GWDR which delayed the Regional Water Board hearing. Please see draft GWDR for new deadlines of these three documents. Other document deadlines remain unchanged.

A. NOI Comments:

- 17. Comment-** HCRCD requested the addition of an NOI check box allowing a dairy owner that is also the operator to skip to the next section to avoid repeating information.

Response- Agreed. See revisions to NOI section II to avoid duplicate information.

- 18. Comment-** HCRCD requested removal of the section of the NOI that requests specific volume information on waste containment because new dairies may not yet have this information and dairies covered under the 2012 Waiver already submitted this information.

Response- NOI page 3 regarding type of waste containment structure is a valid question. The Regional Water Board must use this information to decide whether to enroll the dairy under the draft GWDR. For instance, page 4 of the NOI asks if the retention ponds meet Title 27 Statewide Minimum Standards for Confined Animal Facilities. Therefore, the question regarding type of containment structure for waste should remain, especially for new dairies so that they can demonstrate that they have adequately addressed waste retention before applying for a permit.

Since the total storage will be addressed in detail in the WQP, the storage capacity question will be removed from the NOI. Even though manure storage capacity information has been provided for most dairies enrolled in the 2012 Order, the 2012 information does not transfer to the 2019 GWDR so will need to be added to the WQP when it is due. Regional Water Board staff will work with dairy operators to share information from 2012 so that they can easily copy the information onto the new forms if the storage capacities have not changed. Many dairies have new family operators and must enter current information and sign the certification agreement under the new GWDR.

The GWDR allows existing goat, sheep, and water buffalo dairies that are newly regulated facilities additional time to comply with GWDR regulations. The total storage capacity of their containment structure can be reported in the WQP when it is due, and

they will have the opportunity to work with local agencies and organizations to have the total volume measured accurately.

- 19. Comment-** CDFW recommends that “groundwater regulations and ordinances” be added to the NOI section IV.e. which states that: “The development of the dairy is in compliance with any applicable county regulations and ordinances, including grading, construction, and building ordinances.”

Response: Agreed. “Groundwater regulations and ordinances” has been added. NOI section IV.e. now reads: “The development of the dairy is in compliance with any applicable county regulations and ordinances, including grading, construction, building ordinances, and groundwater regulations and ordinances;” Also, GWDR Finding 46.e. on now contains the same updated language.

- 20. Comment-** CDFW recommends that NOI section IV.b. be changed to cite the corrected code: “All dischargers must comply with Fish and Game Code Section 1600 *et seq.* Lake and Streambed Alteration requirements.”

Response- Agreed. The correction has been made to NOI section IV.b. and GWDR Finding 46.b. Both documents now state: “b. All dischargers must comply with Fish and Game Code Section 1600 *et seq.* Lake and Streambed Alteration requirements.”

B. Title 27, Comments: None

C. Definitions, Comments: See Comment 21. Below.

D. Monitoring and Reporting Program (MRP) Comments:

- 21. Comment-** RRK requests clear definitions of terms used in the MRP for the reader including the dairy operator. Terms of concern include: “visual inspections when conditions are safe to do so”, “adverse conditions”, “threat to human health or the environment”, “discharges”, “noncompliance”, “25-year 24-hour storm”, and “corrective actions.” In addition, RRK questions the use of these terms such as how these incidences are to be reported.

Response- “25-year 24-hour storm” is defined in Definitions Attachment C. It is generally 5 to 5.5 inches of precipitation in 1 day for most of the dairies in the region. However, since the region’s climate varies widely from the drier Siskiyou County and portions of west Petaluma, to the rainiest areas in the state, a NOAA web link is now given in the MRP for dairy operators to look up the value for their address:
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html

The definition for 25-year 24-hour storm events has been presented at Regional Water Board workshops/hearings and dairy training meetings. Dairy operators that have a CNMP as signed by their local NRCS have their local rainstorm information and manure pond capacity for such storms.

“When conditions are safe to do so,” refers to the safety of the dairy personnel due to their concerns iterated to our staff in the past. Safety concerns include sampling during flooding, high winds, and lightning. “Adverse conditions” in MRP section I.A. refers to spills or potential spills. “Noncompliance Reporting” is found in MRP section II.B.in the MRP which discusses reporting spills, discharges, or other noncompliance violations to the Regional Water Board within 24-hours.

“Threat to human health or the environment” includes discharges that exceed Basin Plan narrative or numeric objectives. Surface water sampling groups are aware of water quality results that require immediate attention. For instance, current dairy group sampling Quality Assurance Plan (QAP)/Standard Operating Procedure’s (SOP) state that the dairy operator is notified, and BMP improvements discussed when sample results are above normal. Regional Water Board must be notified of all noncompliance within 24-hours as part of the Noncompliance Reporting section of the MRP. Regional Water Board staff prioritizes inspections and violation reports on a case-by-case basis and works with the Regional Water Board Enforcement Unit and the SWRCB Office of Enforcement on resolution.

22. Comment- RRK asks how the required daily dairy inspections by operators are reported.

Response- There is not a specific requirement to report on the daily inspections unless a discharge or violation is observed. The Annual Report requires reporting on changes to operations, which may be implemented in response to observations during daily inspections. During the inspections of approximately 140 dairies in the North Coast Region, staff has learned that dairy operators frequently walk past their retention ponds to milk cows, move them to the rotating pasture, and generally run the dairy. Any spills and leaks would be apparent immediately to the dairy operator. All operators that sign the dairy program Notice of Intent are informed of the seriousness of discharges to surface water and groundwater. Therefore, having a separate form that they sign each day, for instance, verifying inspection of manure ponds is unnecessary. The Regional Water Board reminds dairy operators annually that they are required to: implement measures to prevent discharges ahead of storms, monitor their operations for potential discharges, and to remedy situations immediately when necessary. Reminders are included in the NOI, MRP, WQP, Annual Reports, Regional Water Board staff inspections, water quality workshops, surface water collection group results, and regular correspondence from the Regional Water Board.

23. Comment: RRK and CCKA argues that permittee data should be made publicly available.

Response: Data and plans collected by the Regional Water Board will be made available to the public either through the online searchable Geotracker database, or upon request. One exception is confidential tribal information. See also Response to Comments 29, 41, 48, 60 on reporting of information to the Regional Water Board.

MRP: Surface Water Sampling

24. Comment:

There were wide-ranging comments regarding surface water monitoring; some commenters arguing for less or no changes to surface water monitoring requirements, others requesting expanded monitoring requirements.

SRDA and WUD requested that future group monitoring under the draft GWDR stay the same as what was used under the 2012 dairy program. SRDA recommends that Regional Water Board add language that if any ammonia in surface water monitoring results are ≥ 3 mg/L, then results would be reported to the Regional Water Board. The HCRCD and UCCE noticed that the surface water parameters in the GWDR do not match the MRP and requested that pH and temperature be removed from the GWDR. UCCE requests that surface water parameters go unchanged. UCCE states that the MRP section I.B.1.a. reference to total ammonia nitrogen should be corrected.

The CCKA states that effectiveness of the dairy surface water sampling must be verified, bacteria sampling must be added, and the group sampling must be revised. RRK states that total phosphorus and *E. coli* parameters must be added to the surface water sampling, that group sampling is ineffective because samples are not collected near dairy fields, during first flush, and during peak storm runoff events, and that the surface water monitoring program must be designed to demonstrate conditions and progress toward an improvement goal. RRK notes that the Clean Water Act section 303(d) list parameters must be sampled including nitrogen, total suspended solids, and turbidity, and that temperature and pH must be sampled to determine un-ionized ammonia toxicity. RRK points out that the EC benchmark in the MRP is not in line with the Basin Plan. HRK states that pathogens must be sampled downstream from dairies. RRK questioned the validity of the results if only one monitoring group is sampling all Sonoma and Marin dairies.

Response: The draft MRP states that group monitoring can be proposed to the Executive Officer. In 2012, dairy representatives formed three surface water monitoring groups. Each group submitted Quality Assurance Plans (QAPs) and Standard Operating Procedures (SOPs), maps, and sampling locations. After meetings and correspondence with those groups, the three group monitoring plans were approved by the Executive Officer. However, the current 2012 QAPs and SOPs do not meet the new 2019 draft GWDR requirements and would need to be revised and resubmitted. QAPs and SOPs are signed contracts that list the Regional Water Board Order number, current staff conducting the group monitoring, a list of dairies that have joined the group, and a plan for meeting sampling and reporting requirements to protect water quality. New maps of existing and new dairy production area locations and fields with manure application would need to be part of that resubmittal to ensure that surface water samples are collected close to downstream discharge points. Three major storm events are required to be sampled each year when it rains 1-inch or more in 24 hours. The objective for the storm event sampling is not the same as first flush monitoring in an urban setting where impervious surfaces send a pulse of water to streams. Much of that type of early storm soaks in to pastures. Manure ponds easily

collect production area runoff from storm events that generate a “first flush”. Assuming dairies request to participate in group monitoring under the proposed Order, Regional Water Board will meet with group monitoring personnel to discuss revisions to QAPs and SOPs to ensure that the major storm events are captured. However, it is important to keep in mind that most streams do not have a height gauge near the dairies and others may be dry early in the season. When reviewing group monitoring QAPs and SOPs the Executive Officer will not approve any plans that propose blind sampling locations.

Staff of all monitoring groups for the previous dairy orders were trained by University of California Cooperative Extension (UCCE). Sampling personnel are required to follow proper sampling protocol (MRP I.B.3.). Regional Water Board staff do not promote group monitoring over individual monitoring; however, staff notes that with adequate planning and training group monitoring can promote consistency by having trained personnel collect dairy water quality samples for a group. All dairies not in a monitoring group are required to collect their own surface water samples.

Regional Water Board staff agrees with the SRDA suggestion to add a group monitoring requirement that if a total ammonia nitrogen sample results in ≥ 3 mg/L, then results must be reported immediately to the Regional Water Board. Those dairies electing to conduct individual monitoring will also be required to report this information immediately to the Regional Water Board.

HCRC and UCCE noticed that the surface water parameters in the GWDR do not match those specified in the MRP. The parameters have been corrected in the proposed GWDR and MRP.

Surface Water Parameters

The draft GWDR proposed that dairies sample surface water during storms for electric conductivity (EC) and total ammonia nitrogen. RRC suggested adding a list of parameters to be sampled instead. Individual parameters are discussed below.

Temperature and pH

Regional Water Board staff disagrees with RRC that temperature and pH must be added to surface water sampling for tracking potential discharges. Dairies have submitted rainy season surface water monitoring results for the past five years sampling for pH, temperature, EC, and total ammonia nitrogen ($\text{NH}_3 + \text{NH}_4^+$). An EC meter and ammonia test strips or meter are used to obtain immediate results during surface water sampling. Ammonia results at or below 1 mg/L do not indicate un-ionized levels in the toxic range in North Coast streams due to typical neutral pH and cool temperatures. Section I.B.1.a. of the MRP shows a benchmark for total ammonia nitrogen of ≤ 1 mg/L. Any results at or above 1.0 mg/L total ammonia nitrogen anywhere in the North Coast Region indicates that a discharge from a dairy may have occurred. Total ammonia nitrogen concentrations ≥ 3 mg/L could be in the toxic range of unionized ammonia and are to be reported to the dairy immediately (if in group monitoring) and to the Regional Water Board within 24 hours as part of MRP Noncompliance Reporting. Best management practices are required to be checked, the discharge stopped, and a report

submitted to the Regional Water Board within 14 days. Regional Water Board staff have determined that monitoring for temperature and pH is not necessary in order to interpret total ammonia nitrogen sample results, to assess potential discharges, or to determine potential unionized ammonia toxicity.

Ammonia

Regional Water Board staff disagrees with the UCCE comment that the symbol $\text{NH}_3 + \text{NH}_4^+$ for total ammonia nitrogen in Table 1 of the MRP is incorrect. The reference used is EPA-822-R-13-001 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (2013).

Electrical Conductivity (or Specific Conductance)

Regional Water Board agrees with RRK that the EC benchmark in Table 1 in MRP section I.B.1.a. should be revised. EC varies widely throughout the North Coast Region (Reference: Basin Plan, Chapter 3).

EC in the North Coast Region is usually much lower than the draft benchmark, especially for freshwater systems (Reference: Basin Plan). Brackish or saltwater mixing areas may be higher such as in estuaries. Please see edited ~~strikeout~~/underline in the MRP Table 1 that states that the EC sampled must be compared to previous records of EC measured at the site. Surface water sampling personnel should be looking for abnormalities in EC results. If the EC value is considerably higher than what is usually measured at a station, then a dissolved contaminant may be entering the surface water and additional sampling may be needed to see where the high EC spike is coming from. The landowner at the source must be notified and best management practices checked to stop all discharges. The Noncompliance Reporting section of the MRP must be followed in cases of discharges of waste to surface waters.

Total Phosphorus and Total Nitrogen

There are no water quality objectives for Total Phosphorous (TP) and Total Nitrogen (TN). Therefore, assessment of TP and TN concentrations are difficult to interpret, and Regional Water Board staff do not propose requiring monitoring for those parameters. The Basin Plan does include an objective for Biostimulatory Substances. The MRP has been revised to require visual inspections of upstream and downstream water quality conditions to assess the presence of algae or other scums and foul odors that may be an indicator of biostimulatory conditions resulting from discharges containing nutrients.

In addition, samples collected for TP and TN must be sent out to a lab and results may not arrive for weeks. Measurement of total ammonia nitrogen and EC are the best indicators of a dairy discharge because the results can be tested with a field meter or field test papers. Discharges can be checked and BMPs put in place at a dairy immediately when needed.

Enterococci and *E. coli* Bacteria

To respond to comments and concerns and ensure the Regional Water Board has information to assess compliance with Basin Plan requirements, *E. coli* and enterococci bacteria sampling has been added to the GWDR and MRP. MRP section I.B.1.a. now

requires surface water sampling for *E. coli* and/or enterococci below dairies to determine if water quality objectives are being met and beneficial uses are protected. At the identified monitoring locations, bacteria concentrations shall be sampled in accordance with the requirements as specified in Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Bacteria Provisions and Water Quality Standards Variance Policy, August 7, 2018 at https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/final_iswebe_bacteria_provisions.pdf . These provisions are enacted as statewide objectives by the State Water Resources Control Board to protect public health.

Bacteria samples shall be collected using clean hand procedures and analyzed at a certified laboratory for *E. coli* in freshwaters or enterococci in waters where salinity is greater than 1 part per thousand more than 5 percent of the time in a calendar year.

Inspection or water quality monitoring results, which indicate the potential that dairy discharges are impacting beneficial uses, water quality conditions, or causing nuisance, may result in the Executive Officer imposing additional monitoring requirements. Such additional monitoring may include, but is not limited to, suspended sediment, bovine-sourced *Bacteroides* monitoring or summer monitoring to assess biostimulatory conditions, including nutrients, dissolved oxygen, sediment oxygen demand, algae, and macroinvertebrates.

Turbidity and Total Suspended Solids

Based on historic regional monitoring of turbidity and Total Suspended Solids (TSS), turbidity values and TSS concentrations vary widely. It can be difficult to track sources of turbidity and TSS. Therefore, the Regional Water Board relies on EC and ammonia measurements as surrogates to detect a potential discharge from dairies in all watersheds.

Groundwater Sampling

25. Comment - Alexandre Dairy suggested that groundwater monitoring should be discontinued at some point or conducted every four to five years based on the first three years of data.

Response - Groundwater monitoring is an essential requirement of the GWDR to ensure beneficial uses are being attained. A reduction in monitoring frequency could be requested if the discharger can prove:

- 1) Beneficial uses are being maintained (i.e, domestic and municipal water supply);
- 2) Water quality is not being degraded consistent with the Antidegradation Policy (Res. 68-16);
- 3) Constituents of concern (COCs) do not have increasing trends and are stable over time; and
- 4) Groundwater data is collected from representative wells that assess the lateral and vertical extent of COCs.

26. Comment - Alexandre Dairy also suggested that nitrate results ≥ 5 mg/L should be revised to ≥ 10 mg/L to reduce extra groundwater sampling work.

Response - Nitrate concentrations >5 mg/L indicate water quality degradation. See GDWR Finding 44 (page 11).

Using 5 mg/L of nitrate as a threshold triggering additional investigation will help ensure beneficial uses are being met and exceedance of the maximum contaminant level (MCL) for groundwater is not occurring.

Nitrate >10 mg/L exceeds the MCL, the water quality objective for human health protection, and is known to be toxic to infants. Under the California Water Code (CWC), results >10 mg/L of nitrate would be considered pollution.

27. Comment - CCKA stated that the GWDR does not contain specific enforceable standards to measure effectiveness of management practices and water quality objectives. Examples given include biostimulatory substances, sediment, turbidity, bacteria REC-1, bacteria in shellfish, and bacteria in groundwater.

Response - GWDR Conditions Section A. Discharge prohibitions 2 and 3 prohibit the discharge of waste that cause or contribute to nuisance, pollution, and any exceedances of water quality objectives contained in the Basin Plan. In addition, the MRP establishes enforceable monitoring requirements including visual inspections throughout the year and during storm events and water quality testing of both surface water and groundwater. The MRP provides a feedback mechanism to monitor the effectiveness of BMPs and alert dairy operators and Regional Water Board staff when BMPs are not functioning adequately in a timely manner to allow corrective action and how any discharges are affecting receiving waters. Bacteria monitoring has been added as discussed in Response 24 above.

28. Comment - Citing the *AGUA* decision, CCKA asserts that monitoring is insufficient to detect whether discharges are causing degradation of surface and ground water. CCKA asserts that the court found the Central Valley Water Board's Order was insufficient to detect any degradation because groundwater monitoring wells were too far from manure ponds and additional upstream monitoring was not required unless adverse impacts were already shown. CCKA asserts that one monitoring site must not sample for several dairies, some far upstream. CCKA also makes the following points: the draft GWDR prohibits further degradation of groundwater but without monitoring wells there is no evidence; surface water monitoring must detect degradation from individual dairies; draft GWDR must have management measures successful in attaining standards in upstream waters.

Response - Section I.B.2 of the MRP requires groundwater monitoring from wells that are representative of the discharge of waste. The MRP requires the consideration of groundwater gradient and flow when selecting wells and groundwater monitoring

locations. Furthermore, if nitrate is detected >5 mg/L the discharger shall provide a work plan to the Regional Water Board for further investigation. See also Responses 4, 5, and 23 for discussion of antidegradation and required surface water sampling requirements, and 24 and, 25 above discussing groundwater sampling.

29. Comment – CCKA and RRK request that NMPs be made available for public review. CCKA and RRK requests that the Regional Water Board provide all field data so that the public can determine which measures are effective.

Response - Section I.B.2.c. of the MRP requires groundwater monitoring results to be uploaded to the statewide groundwater database Geotracker. This publicly searchable database allows the Regional Water Board to more efficiently evaluate the current status of groundwater quality and track trends over time. Work plans are required for areas with nitrate levels of concern. All monitoring data collected by the Regional Water Board will be made available to the public either through the online searchable Geotracker database, or upon request.

Please see Responses to Comments 4, 23, 60, 61 which address reporting of monitoring data, public records, and information contained in NMPs.

30. Comment – CDFW commented that annual groundwater sampling in MRP is insufficient to accurately characterize potential impacts to groundwater and interconnected surface waters including nitrogen contamination. CDFW commented that the GWDR cannot guarantee prevention of adverse impacts to groundwater because the monitoring design does not include an understanding of aquifer dynamics and doesn't collect data through different seasons. Shortcomings in monitoring standards may allow for unaccounted groundwater contamination at some or all dairies which could adversely impact groundwater and interconnected surface waters.

Response - Regional Water Board staff have evaluated the groundwater data and MRP requirements from the program to date. After evaluating the data and comparing results from seasonal variations in water level, staff support the proposed monitoring program as the minimum requirements for evaluating groundwater quality. Spring and fall groundwater sample results from the 2012 Waiver were compared and no seasonal difference was found. The MRP has an adaptive management component requiring additional investigation if data collected indicates water quality degradation. Also see Response to Comments 24, 25, 26, and 27 above.

31. Comment – CDFW commented that basin hydrogeologic conceptual models and other aquifer descriptions required in groundwater Sustainability Plans (GSPs), when and where adopted, should be used when designing monitoring approaches to increase validity of groundwater sampling results. CDFW states the GSPs are regulations with requirements and expects the GWDR to include information on the Sustainable Groundwater Management Act (SGMA) & GSPs.

Response - Staff agree that GSPs, US Geologic Survey and Department of Water Resource reports are all helpful in further understanding fate and transport of

pollutants in the subsurface. In many areas hydrogeologic information is already available and helpful for providing information on stratigraphy and water-bearing formations. For example, discharges to land in the Santa Rosa Plain and Wilson Grove Formation have significantly different geology and groundwater recharge rates than do the Smith River Plain and Eel River Basin.

As dairy operations directly discharge to land, the first encountered shallow groundwater is the primary zone of concern. Therefore, the MRP requires representative wells for monitoring and work plans that require well construction details, full delineation of adverse impact, and a sensitive receptor survey.

32. Comment – CDFW commented on GWDR, Discharge Prohibition A.3, suggesting the addition of language on “GSPs” and “local” water quality regulations to help prevent groundwater quality degradation and interconnected surface waters. CDFW recommends that the Discharge Prohibition A.3 be revised to as follows: “The discharge of waste from a dairy that causes or contributes to an exceedance of any applicable water quality objective in the Basin Plan *or Groundwater Sustainability Plan (if applicable)* [text in italics is CDFW’s suggested addition], or any applicable local, state, or federal water quality criteria, or a violation of any applicable state or federal policies or regulations, is prohibited.”

Response – As noted in Response to Comment 26 above, Section A, discharge prohibitions 2 and 3, prohibit the discharge of waste that cause or contribute to nuisance, pollution, and any exceedances of water quality objectives contained in the Basin Plan.

Groundwater Sustainability Plans under SGMA are required to consider water quality degradation and develop metrics to avoid undesirable results. GSPs must comply with existing water quality laws and regulations; however, they are not the enforceable regulatory mechanisms for the discharge of waste and therefore, not appropriate to include the prohibition referenced above. The Regional Water Board’s Proposed GWDR require compliance with water quality objectives and the state antidegradation policy.

33. Comment – DNRCD suggested the consideration of no Work Plan for groundwater results between 5 and 10 mg/L.

Response – Please see Response to Comments 24 through 27 above.

34. Comment – DNRCD stated that using Geotracker will be difficult for some dairies.

Response – Please see Response to Comment 28 above.

35. Comment – DNRCD commented that the Water Quality Plan should have the question removed regarding minimum water table depth, depth of well, and date of measurement because obtaining the information is not feasible and is not useful for one-time reporting.

Response - Depth to water is useful in determining the potential extent of impacts and appropriate for determining representative samples. However, if well construction details, and/or total depth of wells and screen locations are provided to the Regional Water Board, then depth to water is not necessary. This information would be useful and required if wells were installed for investigation of high nitrates. Known information about wells is required. If any of this information is not known by the discharger and obtaining the information would harm the well or well seal, then the discharger may simply state information that can be obtained. This information has been added to the Water Quality Plan, question 23 regarding groundwater wells.

36. Comment - HCRCD suggested removal of all work related to sampling of the nearest downgradient well because it may not be feasible with no depth or construction type information. They also suggest removal of all monitoring well installation work because it is cost prohibitive.

Response - Please see Response to Comments 24 through 27 and 29 above.

37. Comment - HCRCD suggested consideration of existing dairy groundwater well information before prescribing the costly new sampling frequency and removing the requirement of sampling for three consecutive years.

Response - Please see Response to Comment 29 above.

38. Comment - HCRCD suggested not requiring a detailed Work Plan when groundwater nitrate is >5 mg/L. Instead, allow local service providers to aid producers before requiring expensive groundwater monitoring.

Response - Please see Response to Comments 24 through 27 above. Also, allowing pollution to be offset by the local water suppliers is contrary to the law. We can't allow pollution and then rely on publicly funded water supply districts to pay for replacement water while allowing beneficial uses to become and remain impaired.

39. Comment - HCRCD asks which wells are representative when multiple wells exist.

Response - Shallow groundwater downgradient of the discharge of waste is the primary area of concern. Collecting samples from these areas are considered representative of groundwater quality that has the potential to be altered by the discharge of waste. See MRP Section I.B.2.b. for additional details on requirements.

Supply wells that are screened in the first encountered water-bearing unit could be used as representative wells. If waste is being applied in multiple locations, then multiple wells may be representative and need monitoring. On the other hand, if multiple wells are in proximity and yield similar information about groundwater quality then only one well may be necessary during the initial phases of monitoring.

40. Comment - HCRCD suggests that Geotracker input is burdensome and expensive and that Regional Water Board should do it instead of the dairies.

Response – Please see Response to Comment 29 above.

41. Comment – UCCE commented that groundwater tests are expensive for nitrate, TDS, and total coliform, totaling over \$100.

Response – Please see Responses to Comments 24 through 27 and 29 above.

42. Comment – RRK stated that dairies must electronically submit all reports and data including NMPs.

Response – Regional Water Board has posted guidelines for electronic submittal for correspondence and reports:

https://www.waterboards.ca.gov/northcoast/publications_and_forms/available_documents/pdf/2014/ECM_Letter-Guidelines.pdf

In the event that hard copies of required documents are submitted to our office, Regional Water Board staff practice is to scan the documents for filing and for public review availability. Documents submitted to the Regional Water Board are generally public information except in special circumstances as noted in Orders such as tribal consultation especially with respect to archaeological artifacts.

43. Comment – RRK commented that the public has a right to know about nitrate contamination.

Response – Please see Response to Comments 24-29 above.

44. Comment – RRK commented that the draft GWDR must increase groundwater monitoring to ensure compliance.

Response – Please see Response to Comments 24-29 above.

45. Comment – RRK commented that draft GWDR Finding 25 states that: “This Order implements the Basin Plan by requiring management measures for pollutant sources that will improve water quality in impaired watersheds.” RRK commented that the GWDR does not implement the Basin Plan, there is no baseline measured, and only minimal monitoring data.

Response – We disagree with RRK’s assertion that the proposed Order does not implement the Basin Plan. The proposed Order establishes an extensive suite of requirements for development and implementation of site-specific BMPs for managing manure and other animal wastes, protection surface and ground water, and monitoring. In addition, the proposed GWDR establishes waste discharge prohibitions and other applicable water quality regulations as enforceable provisions. See Response to Comment 4 above. With respect to GW, data collected from GAMA, SWAMP, TMDLs, and the initial round of the Dairy Program since 2012 will be used to establish baseline

conditions and/or trends (i.e., changes from the known baseline). See also surface water monitoring information in Response 23 above.

46. Comment – HBK commented that the draft GWDR will not prevent degradation of drinking water from dairy operations nor does the GWDR demonstrate compliance. They assert that the draft GWDR needs stringent groundwater monitoring and a requirement to sample for *E. coli* and other pathogens to help protect neighboring wells used for drinking.

Response – The current draft GWDR states that domestic wells at dairies are required to be tested for nitrate and total coliform. Irrigation wells representative of dairy conditions are to be tested for nitrate. The Basin Plan contains total coliform criteria of 1.1 MPN/100 mL for groundwater supplying municipal water sources (beneficial use MUN). Reporting limits are commonly set at 1.0 MPN/100 mL for the coliform test. Domestic water supply wells are to be tested for total coliform in accordance with the BP objective. It is an unnecessary burden to require bacteria testing for wells that do not supply MUN. Irrigation wells do not have to meet MUN standards. The relatively new *E. coli* objective in the Basin Plan is for REC-1 in surface waters (contact recreation). If the IDEXX Colilert analytical test is used, then the results will report both total coliform and *E. coli* bacteria. Recent examples of this include Analytical Sciences Lab in Petaluma, 2018, and Brelje and Race Lab in Santa Rosa, 2018. See also Response 5 above.

47. Comment – WUD commented that the Regional Water Board should identify bad producers and minimize the burden on good producers, but that the draft GWDR is contrary to this approach and that the groundwater monitoring program that will cost \$1,000 per dairy per five years with the requirement to sample years 1, 2, 3, 5, 7, 9,... WUD requests that the Regional Water Board consider requiring a reduced groundwater sampling schedule such as year 1, 2, 5, 10, 15...unless a well has shown ≥ 7 mg/L nitrate. This would reduce the financial burden on dairies with low nitrate. Groundwater changes very slowly.

Response – Partly agreed. Indeed, groundwater concentrations can change slowly, however, nitrate is also very difficult and costly to remediate. This point is underscored by Dr. Thomas Harter's work (2012) relative to groundwater contamination from nitrate in the California Central Coast Regional Water Quality Control Board (Region 3) and Central Valley Regional Water Quality Control Board (Region 5). Regional Water Board does not support allowing the nitrate action level to be at 7 mg/L before requiring a work plan for further investigation.

In response to the request for reduced groundwater sampling for dairies with good water quality, the following information has been added to the draft MRP: "The Regional Water Board will consider requests for reduced groundwater sampling from dairies that: (a) have results from four groundwater samples as collected on their dairy resulting in < 5 mg/L nitrate; and (b) can explain how the sample results are representative of first encountered groundwater below or downgradient of the production area and/or fields with regular manure application.

The reduced sampling that the Regional Water Board will consider is every other year. That means that if the dairy meets conditions (a) and (b) above, then the Regional Water Board will notify the dairy that they could skip groundwater collection during year 2 (thus sampling year 1, 3, 5, 7, 9...). Please also see Response to Comments 24-27 and 29 above.

Manure Manifests

48. Comment – RRK states that manure manifests showing manure sold, etc., should be submitted to Regional Water Board.

Response – Manure manifests record the transfer of waste to outside facilities. The manifests are required by draft GWDR Conditions under Provision 7 and in the NMP sections H and I. They are to be kept onsite as part of the NMP. If Regional Water Board requests a copy of an NMP, then the manifests must be submitted too.

Appendix 1 - Water Quality Plan (WQP) Comments

49. Comment – RRK commented that WQPs should be public information and should be updated periodically.

Response - Documents submitted to the Regional Water Board are generally public information except in special circumstances as noted in the draft Order, such as in the case of tribal consultation, particularly with respect to archaeological artifacts. WQPs (form found in Attachment D MRP: Appendix 1) as required by the 2019 draft GWDR are only to be submitted once to the Regional Water Board by each dairy. The Annual Reports contain questions regarding updates to the Water Quality Plan. The discharger can describe these updates in the Annual Report or attached to the Annual Report. The Annual Reports are public documents submitted to the Regional Water Board and are due November 30 of each year, starting in 2020.

50. Comment – DNRCD, HCRCD, and UCCE recommend removing some of the groundwater well questions in the WQP. HCRCD and UCCE recommend that the WQP questions be streamlined for existing dairies because much of the needed information is in the 2012 WQPs, will be included in the 2019 NOIs, and will be answered by the required maps. HCRCD and UCCE recommend that the words “majority of” be added to WQP section II.I.1. on page 10, in reference to nutrient application dates. Also, UCCE recommends the addition of the words “Nutrient application should be done according to NMP” and that there should be an allowance to apply fall or winter application of manure during drought.

Response – Regarding depth to GW, please see Response to Comments #34 above. Regarding streamlining, the WQPs required under the 2012 dairy program do not transfer to the 2019 draft dairy program. The new regulations under the 2019 dairy program require new information and a new certification, especially since many dairies

have changed operators in the past seven years. However, the WQP is a form that has some redundancy especially with respect to the 2012 dairy program. 2012 Water Quality Plans will be made available to any operator for information that can be easily copied into the new WQPs. Regional Water Board staff agree with the recommended wording “majority of,” “Nutrient application should be done according to NMP,” and an allowance to apply fall or winter applications of manure during drought, will be added to the WQP with conditions designed to avoid discharges of waste to surface waters and GW.

51. Comment – Regarding WQP section II.J. #5: HCRCD and UCCE commented that it is burdensome and costly to sample manure annually, that local labs may not process the samples, and that previous CNMP samples were shipped to Central Valley. UCCE also states that organic dairies are notoriously short of nutrients for crops and that there is no need to measure manure nutrient content. They recommend the WQP state that “Dairies may need to perform annual manure sampling, which could depend upon risks to water quality.”

Response – Partly Agreed. The following language has been added and/or edited: “Dairies may need to perform annual manure sampling if there is a high risk of discharge to surface waters or groundwater. Regional Water Board may contact the dairy to require analysis of manure and other organic by-product including total nitrogen, ammonium, total phosphorus, total potassium, and percent moisture.” Please see revised NMP requirements below for dairies with and without NMPs.

Riparian Management Plan Comments

52. Comment – CDFW and CACC both recommend stricter limits or total exclusion in riparian zones with fencing at fixed distances from the stream or riparian zone.

Response - Rather than set specific riparian buffer widths, the approach taken in the draft Order is to establish clear expectations of riparian functions to be attained, to assess on the ground site specific riparian conditions, to identify where changes in practices are needed, and to implement new practices where necessary to appropriately protect riparian areas and water quality.

53. Comment – Alexandre Dairy, DNRCD, HCRCD, and UCCE commented that the Riparian Management Plan performance requirement is too restrictive regarding livestock to be removed from riparian areas when stubble height reaches 4 inches or livestock shift preference to browsing woody species, whichever comes first. They maintain that the objective is to have sufficient residual stubble height to protect soil from rain and runoff caused erosion and/or provide some filtering of organic matter and that the requirement could be achieved by setting a performance standard.

Response – Regional Water Board staff agree that the objective of the stubble height requirements is as expressed in the comments and propose the addition of the following language in GWDR Conditions section B.4. and MRP Appendix 1 RMP section I to provide flexibility to dairy operators:

“Dairies are required to submit an RMP by November 30, 2020. Riparian areas on dairy property shall be managed to protect water quality including compliance with the performance measures listed below. Dischargers may propose alternative management measures that provide equal or better protection subject to approval by Regional Water Board Executive Officer.”

54. Comment - UCCE recommends that the water conservation section of the WQP be removed because it relates to no other part of the draft GWDR.

Response - Draft GWDR Finding 39 discusses Governor Brown’s Executive Order B-40-7 to encourage water conservation. The section of the WQP on water conservation is for educational purposes only and has no requirements.

Appendix 2 - Nutrient Management Plan Comments

55. Comment – WUD, Alexandre Dairy, and UCCE requested more time for dairies to complete NMPs. They recommend that new dairies and dairies without NMPs be the priority for obtaining their first NMP due to shortages of Technical Service Providers (TSPs) and the overlapping need due to new regulations from other regional water quality control boards. UCCE recommends that the credentials of the service providers and staff working on NMPs be revised. They recommend that existing dairies that already have Comprehensive Nutrient Management Plans (CNMP) for the whole farm and NMPs for the manure application to fields from the NRCS should be given more time to meet the Regional Water Board requirements. In addition, they pointed out that some dairies with CNMPs and NMPs from NRCS may not need updating.

Response – In response to comments, Regional Water Board staff has developed a questionnaire for dairies to fill out about their CNMP/NRCS NMP to meet NMP requirements yet still have nutrient plan and application information at the Regional Water Board for review and requests.

56. Comment – As discussed in Comment 51 above, HCRCD and UCCE recommend that dairies not be required to perform annual manure sampling and instead the wording be changed to may be required to perform annual manure sampling. They state that the need to perform the tests could depend upon risk to water quality.

Response – It is only necessary to perform manure sampling annually if there are changes in the dairy operation. If herd sizes and field application are the same as when the CNMP was finalized, then no additional sampling of manure application is necessary, especially if nutrient application is historically lower than plant needs. Soil sampling and documentation of manure application as listed in the GWDR NMP still apply (see NMP section F). It should be noted that the following requirement from GWDR NMP section C.6 still applies: “The NMP must include calculations showing all sources of nutrients used by the facility and demonstrating that nutrients are applied at rates that are protective of water quality. These calculations must be reviewed annually

and updated if there are any significant changes in conditions or practices at the dairy that necessitate changes in the NMP.”

57. Comment – HCRC and UCCE recommend that the following requirement in the NMP section C.7.c. be removed: “The NMP must:... c. List the areas that are used for manure pond application and a general schedule for periods of time when manure ponds are reaching maximum capacity and rainstorms are eminent.” HCRC and UCCE commented that the typical winter period in the North Coast Region extends from October through April.

Response – NMP section C.7.c. is for listing fields where liquid manure is applied under all conditions. For clarity, the language has been edited to read: “The NMP must: ...c. List the areas where liquid manure is applied under normal, drought, and in emergency situations such as when manure ponds are reaching maximum capacity and rainstorms are eminent. The goal is to avoid discharges of manure to surface water and groundwater.”

58. Comment – UCCE states that the requirement that NMPs be updated within 30 days when changes occur should be changed to 90 days. In addition, the NMPs should only be required to be updated when real measured data shows new and different information from that originally used or when acreage changes that requires more concentrated nutrient application to the land.

Response – The NMP, section A, states that the NMP must be revised within 30 days when discharges from a land application area results in exceedance of water quality objectives. That language will remain the same due to the seriousness of exceedances of water quality objectives. Revisions within 90 days are already allowed for other site-specific information under A.1) through A.5) which meets the concerns stated by UCCE.

59. Comment – UCCE recommends that a table be inserted on NMP pages 5 and 8 with clear instructions for media and analytes and frequency of sampling, that irrigation well sampling is not necessary if the well is sampled, to allow microwave moisture content for solid manure, and that if nitrogen is somewhat similar in the same source of manure, then less frequent sampling should be allowed. UCCE warned that there would be challenges on lab availability to analyze the samples and that the requirement for Standard 590 forage tissue analysis is excessive. Instead, UCCE recommends 10 grab sample composite samples from the field. It states that moisture analysis on process water is not needed. Rather, that dairies could just report the data and apply manure to pastures as-is.

Response – Regional Water Board responses are in **(bold)**: UCCE recommends that a table be inserted on NMP pages 5 and 8 with clear instructions for media and analytes and frequency of sampling **(A table will be distributed prior to the NMP due date in 2020 such as at the annual workshop)** that irrigation well sampling is not necessary if the well is sampled **(Agreed, see NMP revision D on page 5)**, to allow microwave moisture content for solid manure **(Agreed, see NMP revision F on page 10)**, and the if nitrogen is somewhat similar in the same source of manure, then less frequent

sampling should be allowed (**Agreed, see NMP revision D on page 6**). UCCE warned that there would be challenges on lab availability to analyze the samples and that the requirement for Standard 590 forage tissue analysis is excessive. Instead, UCCE recommends 10 grab sample composite samples from the field (**Agreed, see NMP revision F page 10**). Moisture analysis on process water is not needed. Rather, that dairies could just report the data and land apply as-is (**Agreed, see NMP revision I.2.c. on page 11**). Please note that language has been added to the NMP Appendix 2 that states: “A certified and implemented Comprehensive Nutrient Management Plan or Nutrient Management Plan from the below list of specialists may substitute for this appendix if the CNMP or NMP meets the purpose of the GWDR and this appendix for the protection of water quality.”

Solid manure may be tested for nutrients using methods described by the Manure Analyses Proficiency (MAP) Testing Program or by the University of California. A current MAP example is Denele Lab in Turlock, California:

<https://www2.mda.state.mn.us/webapp/lis/maplabs.jsp>

Process wastewater can be tested by a MAP lab or a lab accredited by Environmental Laboratory Accreditation Program (ELAP). Current ELAP certified labs are located in Arcata, Ukiah, and other areas in or near the North Coast region:

https://www.waterboards.ca.gov/drinking_water/certlic/labs/

More information on sampling and analyses can be found on the CVRWQCB-Region 5 website:

https://www.waterboards.ca.gov/centralvalley/water_issues/confined_animal_facilities/general_order_guidance/dairy/sampling_analysis/sampling_and_analysis_21feb08.pdf

60. Comment – UCCE recommends duplicate information be deleted on page 11. Item j. Storm water sampling should not be a function of NMPs, and to remove record keeping of that. UCCE asks if the Regional Water Board will develop appropriate record keeping tools for producers to use to maintain nutrient application information.

Response –NMP section I.2.j. (page 11) refers to record keeping and is intended to be used for NMP revisions. However, some duplicate information has been deleted. UCCE states that storm water sampling should not be a function of NMPs so remove record keeping of that. (**Agreed, see NMP revision**). With regards to whether the Regional Water Board will develop appropriate record keeping tools for producers to use to maintain nutrient application information, the answer is no, the Regional Water Board is not developing such as tool. However, in response, Regional Water Board has developed a questionnaire to help dairies meet NMP requirements. See NMP Questionnaire attached to the NMP Appendix 2.

61. Comment – HCRC and UCCE request that NMPs not be submitted to the Regional Water Board upon request. CCA and RRK prefer that the NMPs be submitted to the Regional Water Board and be made available for public review. RRK is concerned that without Regional Water Board review of NMPs the Board cannot determine if

management measures are effective, and requests information on the process for updating NMPs.

Response – Comprehensive Nutrient Management Plans (CNMPs) for whole farm and Nutrient Management Plans for fields, such as those specifically done through USDA-Natural Resources Conservation Service (NRCS), may contain all the requirements in the Regional Water Board’s GWDR Appendix 2-NMPs. NRCS keeps their information confidential. However, the GWDR Appendix 2-NMPs contains a questionnaire developed to help dairies meet NMP requirements. Dairies are required to submit the questionnaire to the Regional Water Board for review by November 30, 2021 and will be available for public review. Updates to the NMP are required in response to changing conditions as discussed in Appendix 2, sections A. and C.6. Tracking of discharges is discussed in Response to Comment 4 above.

62. Comment – Regarding water quality nutrient offset trading projects, RRK recommends that dairies moving manure offsite should not receive credits.

Response – GWDR Conditions section C paragraph 16 discusses management practices above and beyond the minimum requirements and states that credits may be generated as part of a nutrient offset program. NMP section A also states that: “The Regional Water Board may approve an alternative schedule for submittal of MRP reports, including for the NMP, to dairies implementing an approved nutrient offset project.” Any trading and credit allowances would be allowed if not in violation of the dairy GWDR, would be reviewed through both the dairy program and the nutrient offset program, and may result in additional monitoring requirements in the dairy MRP.

63. Comment – CACC commented that the NMP section E.4. referring to waters of the U.S. should be changed to waters of the state to better protect water quality. Also, add “culverts” to section E.3. listing conduits.

Response – Agreed. “Culverts” has been added as a conduit to E.3. The change “U.S.” to “state” in NMP section E.4. has been made.

64. Comment: RRK and CCKA request that NMPs be publicly available for review and periodically updated as necessary.

Response: The GWDR requires that NMPs be developed by individual dairies and kept on site. The Order further requires that NMPs be made available for Regional Water Board review and evaluation. The Water Quality Plan, which must be submitted to the Regional Water Board requires that dairies indicate that they have implemented the NMP and requires that NMPs be updated and additional samples collected when conditions change and the NMP is no longer effective in preventing periodic discharges of manure or process water. The GWDR requires most dairies to complete and implement NMPs by October 1, 2020. To ensure that the practices required by the NMP are being implemented and are not causing or contributing to exceedances of water quality objectives, the Regional Water Board will require dairies to submit annual reports that document the measures required by the NMP and verify the measures are

protective of water quality. Such reports will include the information required by sections C. and I. of the NMP. See also Response to Comments #59 and 60 above.

Appendix 3 - Annual Report Comments

65. Comment – HCRC and UCCE recommend that page 7 question 5: “By what date this year is nutrient application to pastures and cropland complete?” be reworded due to year-round plant growth in the North Coast. They recommend “the majority of” be added before the word “nutrient.” Also, UCCE recommends rearrangement of section F, Water Quality Monitoring, according to the following sequence: 1.b., 1.a., and 1.c. for group monitoring.

Response – Agreed. Also, additional spaces will be added to the form to allow dairy operators to provide explanations for their answers reflecting regional variability. Annual Report section F has been arranged as recommended.

66. Comment – HCRC and UCCE recommend avoiding repetitious information in the NMP and Annual Report.

Response – GWDR requirements vary by dairy type. For instance, dairies that do not spread manure, have pastures, or have small herd sizes, may not need to have an NMP. Thus, there is a need for nutrient management questions in the Annual Report for these dairies. Also, the Annual Report will be available electronically so that operators can save copies from earlier years and keep the answers the same when there are no changes to the dairy. Once a dairy is familiar with the Annual Report form, it shouldn't take long to complete.

Attachment E - Tribal Cultural Resources Mitigation Program Comments

Comments from the commenting Tribal Government and corresponding response from the Regional Water Board are confidential. No changes were made by the Regional Water Board to Attachment E – Tribal Cultural Resources Mitigation Program.

Attachment F - Initial Study and Mitigated Negative Declaration Comments

Comment - CACC commented that: “For the CEQA checklist IX.j., it may be relevant to acknowledge that dairy land in the Eel River Basin/Humboldt Bay and Smith River coastal plain are subject to tsunami inundation, in addition to flooding during severe storm events.”

Response – Agreed. Initial Study section IX(j) now states: “Dairy land in coastal plain areas may be subject to tsunami inundation, in addition to flooding during severe storm events. This particularly applies to the Eel River, Eureka Plain, and Smith River Hydrologic Units. As stated above, existing dairies account for all dairies that will be covered by the GWDR at the time of adoption. No change from baseline conditions will occur as a result of adoption of the Order for those dairies located within tsunami hazard zones. Prior to development, any new dairies will be subject to all applicable

state and local laws and permits, including the Coast Act. Please see IX(h) above for discussion of this item regarding the risk of mudflows. Inundation by seiche would not occur due to the small size of reservoirs that have levees or dams.”

References

Biostimulatory Substances/Biological Integrity Science Advisory Panel. State Water Resources Control Board. 2017-2019.
https://www.waterboards.ca.gov/water_issues/programs/biostimulatory_substances_biological_integrity/science_panel/

King, A., Jensen, V., Fogg, G.E. & Harter, T. (2012) Groundwater Remediation and Management for Nitrate. Technical Report 5 in: *Addressing Nitrate in California's Drinking Water with a Focus on Tulare Lake Basin and Salinas Valley Groundwater. Report for the State Water Resources Control Board Report to the Legislature*. Center for Watershed Sciences, University of California, Davis.

Porter-Cologne Water Quality Control Act. California Water Code, Division 7. Water Quality. Office of Chief Counsel. State Water Resources Control Board. 2018.
https://www.waterboards.ca.gov/laws_regulations/docs/portercologne.pdf

US Environmental Protection Agency, Office of Science and Technology. EPA-822-R-13-001 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater .2013.
<https://www.epa.gov/sites/production/files/2015-08/documents/aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf>

Water Quality Control Plan for the North Coast Basin. North Coast Regional Water Quality Control Board. June 2018.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf