

**RANCH WATER QUALITY PLAN,  
COMPLIANCE MONITORING &  
ANNUAL CERTIFICATION  
TEMPLATES**

for

**CONDITIONAL WAIVER OF WASTE DISCHARGE  
REQUIREMENTS FOR GRAZING OPERATIONS IN THE  
NAPA RIVER & SONOMA CREEK WATERSHEDS  
IN THE CALIFORNIA REGIONAL WATER QUALITY  
CONTROL BOARD SAN FRANCISCO BAY REGION**



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**Websites:** <http://ucanr.edu/napasonomagrazingwaiver>  
[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/grazing/napa\\_sonoma\\_grazing.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/grazing/napa_sonoma_grazing.shtml)

**Prepared by:** University of California Cooperative Extension

**In partnership with:** Napa County Resource Conservation District  
Southern Sonoma County Resource Conservation District  
USDA Natural Resources Conservation Service  
Napa County Farm Bureau  
Sonoma County Farm Bureau  
Sonoma/Marin Cattlemen's Association  
Western United Dairymen  
San Francisco Bay Regional Water Quality Control Board

The partnering organizations provided support to complete these templates and/or endorsed the use of this Ranch Water Quality Plan for the local ranching community. Endorsement of these templates and the Ranch Water Quality Plan does not imply endorsement of the water quality regulations.

**Adapted from:** Conditional Waiver for Grazing Operations in the Napa River & Sonoma Creek Watersheds 2017  
[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/grazing/napa\\_sonoma\\_grazing.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/grazing/napa_sonoma_grazing.shtml)  
Ranch Water Quality Plan, Compliance Monitoring & Annual Certification Templates for Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Tomales Bay Watershed in the California Regional Water Quality Control Board San Francisco Bay Region 2013  
[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/grazing/tomalesbay\\_grazing.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/grazing/tomalesbay_grazing.shtml)  
USDA Conservation Planning Process  
[https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/technical/cp/?cid=nr cs144p2\\_064048](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/technical/cp/?cid=nr cs144p2_064048)  
University of California Cooperative Extension Rangeland Water Quality Short Course Planning Workbook 1997  
[http://californiarangeland.ucdavis.edu/rwqp\\_files/rwqp.htm](http://californiarangeland.ucdavis.edu/rwqp_files/rwqp.htm)

**Financial support from:** US Environmental Protection Agency

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## BACKGROUND

This document provides the templates for Ranch Water Quality Plans, Compliance Monitoring, and Annual Certification requirements of the San Francisco Bay Regional Water Quality Control Board (Water Board) Resolution No. R2-2017-0043 or *Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Napa River and Sonoma Creek Watersheds in the San Francisco Bay Region*. This resolution was approved by the Water Board on November 8, 2017 and renewed the existing Conditional Waiver for a second five year term as part of the Water Board's implementation of the Napa River and Sonoma Creek watersheds' Total Maximum Daily Loads (TMDL) for sediment and pathogens.

The templates and supporting instructions were developed to assist ranchers and livestock agricultural managers in compliance with the regulatory requirements of the Conditional Waiver. They cover potential nonpoint source pollution concerns including pathogens, nutrients, sediment, and riparian or stream areas as required by the Conditional Waiver. Ranchers can use these templates to complete the Ranch Water Quality Plan and is to be kept on-site accessible for recording observations in the ranch/farm office. Additionally, the templates provide guidance for rancher completion of compliance monitoring and include a required Annual Certification form to be submitted on November 15 of each year to the Water Board.

These tools were adapted from earlier voluntary ranch water quality education and planning activities, including the University of California Cooperative Extension's Ranch Water Quality Planning Short Course. Additionally, these templates were informed by the Conservation Activity Plan framework of the United State Department of Agriculture Natural Resources Conservation Service. The result was first tested with ranching landowners in the Tomales Bay Watershed during 2009 where tools were developed to capitalize upon earlier ranch planning and water quality projects completed. Ranchers, within and outside the Napa River and Sonoma Creek watersheds, can use this Ranch Plan to conduct planning that will prioritize future projects and facilitate participation in technical or financial assistance programs.

## USER INSTRUCTIONS

The following instructions provide direction for completing Ranch Plans, conducting Compliance Monitoring, and completing the Annual Certification required by the Conditional Waiver. Completed Ranch Plans are to be filed on-site and available for review by Water Board staff. An Annual Certification is to be submitted by the landowner or tenant by November 15 of each year. Refer to these instructions in completing the forms on subsequent pages. Prior to filling out the forms, make copies and keep one blank set as a master. It will be useful to have ranch maps available while completing the forms.

### **PROPERTY INFORMATION – Page 8 (required & kept on-site)**

- List ranch contact information.
- Describe where the property is located including specific parcels with Assessor Parcel Number(s) (APNs) of utilized rangeland (i.e. livestock duration > 45 days/year).
- Identify the appropriate Water Board(s) for the ranch. Napa River and Sonoma Creek watersheds are in Region 2. For other watersheds, refer to [http://www.waterboards.ca.gov/waterboards\\_map.shtml](http://www.waterboards.ca.gov/waterboards_map.shtml).
- List who owns and manages the land including any tenants.
- Identify other plans for the ranch that have been completed.

### **RANCH/FARM GOALS – Page 9 (optional)**

This is an optional form for listing short and long-term ranch goals for production, quality of life, and natural resource and water quality. Check the boxes that apply or write in additional goals.

### **PASTURE INVENTORY – Page 10 (optional)**

This form is used to compare pasture and rangeland characteristics that inform Residual Dry Matter (RDM) management and water quality planning decisions.

- List each agricultural production field used on the property for producing forage and/or grazing livestock using the ranches naming or number system.
- Using your soil map to record the soil series or soil type(s).
- Provide best estimate of pasture or field slope, acres, and woody vegetation cover.
- Provide an expectation of the minimum RDM objective for each pasture and rangeland unit based on slope, woody vegetation, and grassland type (annual vs. hardwood rangeland vs. coastal prairie) from Tables 1-3 in: <http://anrcatalog.ucanr.edu/pdf/8092.pdf>

### **PASTURE/RANCH ASSESSMENT – Page 11 (required & kept on-site)**

The series of questions provide an exercise to explore sites of potential water quality concern. Use the assessment form to evaluate potential sediment, nutrient, and pathogen sources with the understanding that identifying a source does not in and of itself imply causation by management. While responding to these questions, make notes on the ranch maps and on the tables on pages 13 and 14. These two tables provide for documenting projects already completed and planning for additional projects to improve or maintain water quality. For more information, refer to <http://anrcatalog.ucanr.edu/pdf/21626.pdf> or <http://anrcatalog.ucanr.edu/pdf/8014.pdf>.

- Answer “yes,” “no,” or “not sure” for each question.
- Where the response is “yes”, briefly describe the location(s) and conditions /concerns.
- Additionally with a “yes” response make the best determination as to the cause, including historic, natural, or current management.

**STREAM ASSESSMENT – Page 12 (required & kept on-site)**

The series of questions provide an exercise to explore potential sites of water quality concern. Use the assessment form to evaluate stream conditions. While responding to these questions, make notes on the ranch maps and on the tables on pages 13 and 14. These two tables provide for documenting projects already completed and planning for additional projects. For more information, refer to <http://anrcatalog.ucanr.edu/pdf/8089LR.pdf>.

- Answer “yes,” “no,” or “not sure” for each question.
- Where the response is “yes”, briefly describe the location(s) and conditions /concerns.
- Additionally with a “yes” response make the best determination as to the cause including historic, natural, or current management.

**COMPLETED WATER QUALITY PROJECTS – Page 13 (optional)**

This table documents actions already taken to improve or maintain water quality on the ranch. Use it to list all past water quality problem sites with evaluations of previous fixes and any ongoing maintenance and management. While completing the table it will be useful to make notes on the ranch map of identified projects.

- For each identified site label it with a number or name consistent with ranch records.
- Briefly describe the site and water quality concern.
- List in which pasture or field the site is located (refer to Pasture Inventory – Page 10).
- Document practices implemented or management taken to improve or maintain water quality.
- Identify any ongoing maintenance or management required.
- Provide assessment on the need for additional work.
- Indicate if photographs of the site and management practice construction and maintenance are available.

**FUTURE WATER QUALITY PROJECTS – Page 14 (required & kept on-site)**

This table is used to plan future water quality improvement or maintenance projects. List potential problem sites with evaluations of previous fixes, alternative options of future improvement practices with estimated costs and project priority. While completing the table it will be useful to make notes on the ranch map of identified projects.

- For each identified site label it with a number or name consistent with ranch records.
- Briefly describe the water quality concern at the site and its cause.
- List in which pasture or field the site is located (refer to Pasture Inventory– Page 10).
- Make a list of potential practices to implement or management measures that could be taken to improve or maintain water quality. To guide the development and assessment of rangeland management and conservation practices, refer to <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/?&cid=stelprdb1045811>.
- Make an initial estimate of the cost and feasibility to implement the identified potential practices of management measures.
- Assign a priority to the site indicating relative to other sites in what order the site will be addressed. Assignment of a priority recognizes that management practice implementation is dependent upon availability of technical and financial assistance.
- List steps taken or planned to access technical and financial assistance or implement practices independent of such programs.

**MAPPING RANCH FACILITIES AND RESOURCES – Page 15 (optional)**

Use this guide and corresponding ranch maps to locate ranch roads, ponds, fences, completed water quality projects, future water quality projects, etc.

**RANCH MAPS – Page 16 (required & kept on-site)**

Insert copies of the aerial, topographic, soils, or other maps desired. The map scale should be 1:12,000 or better (finer resolution) and contact local Resource Conservation District or Natural Resources Conservation Service for assistance.

**PASTURE USE RECORDS – Page 17 (optional)**

Note how and when each pasture was utilized by livestock during the year.

**COMPLIANCE MONITORING – Page 18 (required & kept on-site)**

The compliance monitoring required by the Water Board is summarized including visual inspections, Residual Dry Matter (RDM), and photographs. Space is provided to record field observations made during inspections, RDM estimates/interpretation, and photo-point descriptions.

**ANNUAL CERTIFICATION FORM – Page 19 (required & submitted)**

Summarize the inspection monitoring and water quality fixes completed over the past year. Prior to November 15, mail it to the Water Board at the address indicated on the bottom of the page. We suggest that you send it registered mail and retain the return receipt with a copy of the form in the Ranch Plan. Alternatively, you may email a scanned or saved ‘.pdf’ file to the email address provided on the Annual Certification form.

- Write the ranch/farm name, mailing address, and list all Assessor Parcel Number(s) (APNs) with livestock as identified in the Notice Of Intent (NOI) and Ranch Plan.
- Indicate if the Ranch Water Quality Plan is completed and the year of completion as well as when updates will be made. Alternatively, indicate that the plan is not yet completed and when it will be.
- List the dates when annual visual inspections were completed - five during the wet season monthly, two during the dry season with one in September, and one survey of streams above and below the ranch.
- Summarize RDM monitoring data and explain results below minimum objectives.
- Indicate if during the visual inspections further management practices and measures were needed to improve or maintain water quality.
- List any potential water quality concerns/problems identified during the inspections including the location, brief description and note management practices.
- Include name of contact person filing Annual Certification paperwork with the Water Board which may be landowner or tenant, phone/email, and signature. Copy page for files.

**LANDOWNER AND TENANT RESPONSIBILITIES**

Sometimes entire ranches or specific pastures and fields within a ranch are being leased for grazing. In these situations, questions arise about the responsibilities and roles of the landowner and tenant to comply with the Conditional Waiver through completion of the Ranch Water Quality Plan, conducting compliance monitoring, and submitting Annual Certification.

Ultimately, the **landowner is responsible for insuring that the Conditional Waiver regulatory requirements are met.** Who completes the Ranch Plan, conducts yearly monitoring and submits

the Annual Certification is a decision the Water Board will leave to the landowner (lessor) and tenant (lessee). It is advised that both parties review the Ranch Plan, monitoring observations and Annual Certification on a yearly basis.



## PROPERTY INFORMATION *(required and kept on-site)*

Ranch/Farm Location			
Ranch/Farm Name:			
Mailing Address or P.O. Box:			County:
City, State, ZIP Code:		What Water Board Region(s) is the ranch/farm in?  <input type="checkbox"/> R1 (North Coast) <input type="checkbox"/> R2 (San Francisco Bay) <input type="checkbox"/> R3 (Central Coast) <input type="checkbox"/> R4 (Los Angeles) <input type="checkbox"/> R5 (Central Valley) <input type="checkbox"/> R6 (Lahontan) <input type="checkbox"/> R7 (Colorado River) <input type="checkbox"/> R8 (Santa Ana) <input type="checkbox"/> R9 (San Diego)	
Phone:	Size (acres):		
List all Assessor Parcel Numbers (APNs) or legal description (Township, Range, Sections) for each parcel, pasture, or silage field included in this plan:			
Owner			
Name(s):			
Mailing Address or P.O. Box: <input type="checkbox"/> same as ranch address			
City, State, ZIP Code:			
Phone:		E-mail (optional):	
Tenant/Manager (if not owner)			
Name(s):			
Mailing Address or P.O. Box: <input type="checkbox"/> same as ranch address			
City, State, ZIP Code:			
Phone:		E-mail (optional):	
Plans & Certifications			
Check the box for the plans, certifications, or other documents that exist for the ranch:			
<input type="checkbox"/> Conservation Easement	<input type="checkbox"/> Dairy Quality Assurance Program	<input type="checkbox"/> Erosion Control Plan	<input type="checkbox"/> Fire Management Plan
<input type="checkbox"/> Fish Friendly Farming	<input type="checkbox"/> Grass-Fed Certification	<input type="checkbox"/> Grazing Management Plan	<input type="checkbox"/> UCCE Ranch Plan
<input type="checkbox"/> Salmon Safe Certification	<input type="checkbox"/> NRCS Conservation Plan	<input type="checkbox"/> Dairy Nutrient Management	<input type="checkbox"/> Dairy Waste Management Plan
<input type="checkbox"/> Timber Harvest Plan	<input type="checkbox"/> Organic Certification	<input type="checkbox"/> Succession Plan	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## RANCH/FARM GOALS *(optional)*

Date(s) Updated: \_\_\_\_\_

<p>Ranch goals are divided into production, quality of life, and natural resource goals. These goals should reflect what you are trying to accomplish on your property. They are used to identify management strategies and practices for accomplishing your goals as well as to help you identify goals that might conflict with each other. Check any goal statements below that reflect your plans, reword them if needed, and/or write in your own. Consider prioritizing them in discussions with family and managers.</p>
<b>Production</b>
<input type="checkbox"/> pass on the farm/ranch to the next generation
<input type="checkbox"/> reduce family/farm debt
<input type="checkbox"/> expand farm/ranch enterprises
<input type="checkbox"/> develop new enterprises
<input type="checkbox"/> increase farm/ranch profitability
<input type="checkbox"/> reduce operating costs
<input type="checkbox"/> purchase or lease more ranch/farm property
<input type="checkbox"/> other:
<input type="checkbox"/> other:
<b>Quality of Life</b>
<input type="checkbox"/> reduce energy consumption in the farm/ranch operation
<input type="checkbox"/> provide for our children's college education
<input type="checkbox"/> provide financial or other support for community organizations
<input type="checkbox"/> reduce household operating expenses
<input type="checkbox"/> build an emergency fund
<input type="checkbox"/> raise livestock or crops during retirement
<input type="checkbox"/> build a retirement fund
<input type="checkbox"/> other:
<input type="checkbox"/> other:
<b>Natural Resources &amp; Water Quality</b>
<input type="checkbox"/> manage rangeland to protect soil from erosion
<input type="checkbox"/> manage cropland, pastureland or forestland to protect soil from erosion
<input type="checkbox"/> manage ranch roads to reduce movement of sediment into streams and other water bodies
<input type="checkbox"/> reduce erosion of streambanks and gullies
<input type="checkbox"/> manage to increase tree cover and/or ground cover in riparian areas or along streams
<input type="checkbox"/> reduce concentration of livestock in or near streams, wetlands, or other water bodies
<input type="checkbox"/> manage to reduce entry of sediment, nutrients and pathogens to streams or wetlands
<input type="checkbox"/> reduce wildfire hazard
<input type="checkbox"/> maintain or enhance oak woodland, native grass, or other plant communities
<input type="checkbox"/> maintain or enhance wildlife or fisheries habitat or other aquatic resources
<input type="checkbox"/> reduce/manage invasive weeds
<input type="checkbox"/> reduce/manage predator impacts on the ranching operation
<input type="checkbox"/> meet water quality regulations
<input type="checkbox"/> other:
<input type="checkbox"/> other:

## PASTURE INVENTORY (optional)

Date(s) Updated: \_\_\_\_\_

Describe each pasture, paddock, and open rangeland on the ranch/farm with estimations of area, slope, and woody vegetation cover. Large or complex pastures may be subdivided into subsection units for management and/or mapping purposes. Look up the minimum objective for Residual Dry Matter (RDM) monitoring in Tables 1, 2, and 3 in *Guidelines for Residual Dry Matter (RDM) Management* (<http://anrcatalog.ucanr.edu/pdf/8092.pdf>) and note which table your use. Soil information is available online at [casoilresource.lawr.ucdavis.edu/drupal/](http://casoilresource.lawr.ucdavis.edu/drupal/) and [websoilsurvey.nrcs.usda.gov/app/](http://websoilsurvey.nrcs.usda.gov/app/).

Pasture/Field		Soil Map Unit(s)	Size (acres)	Slope(s) (%)	Woody Vegetation Cover (%)	RDM Table Number	RDM Minimum (lb/acre)
#	Name/Location						

[Click to go to additional page](#)

## PASTURE/RANCH ASSESSMENT *(required and kept on-site)*

Date(s) Updated: \_\_\_\_\_

The following questions are intended to help assess ranch/farm water quality and potential sources of pollution in the watershed. It is important to note that identified pollution sources **may not be caused by current livestock grazing activities.** This assessment is intended to be used on each pasture/field utilized for agricultural production purposes on the ranch/farm. Multiple fields or the entire ranch may be assessed at once. Describe the condition and pasture/field location. Note any recorded problem conditions as caused by current livestock management (**C**), a historic legacy site (**H**), or natural causes (**N**). For more information, refer to <http://anrcatalog.ucanr.edu/pdf/21626.pdf> or <http://anrcatalog.ucanr.edu/pdf/8014.pdf>

Question	Potential Source	Location ( <i>pasture/field</i> ) & Description of Condition	Cause ( <i>C, H, or N</i> )
<b>SEDIMENT</b>			
<b>RANGELAND &amp; PASTURE FIELDS</b>			
Bare soil visible throughout the rainy season?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Rill or sheet erosion present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Gullies, slumps, or headcuts present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
<b>ROADS</b>			
Surface erosion present on road(s) (rills, gullies)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Culverts or ditches cause gullies or erosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Sediment fills drainage ditches after winter?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
<b>PATHOGENS AND NUTRIENTS</b>			
<b>LIVESTOCK DISTRIBUTION</b>			
Storm runoff from corrals connects to stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Corrals used throughout the winter?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Feeding, salting, or watering areas near stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Do livestock congregate in the stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
<b>COMPOST &amp; MANURE MANAGEMENT</b>			
Compost stockpile runoff connects to stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Compost applied to pasture less than 2 weeks before a runoff generating rain storm?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Compost applied to pastures is stored (aged) less than one month?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		

## STREAM ASSESSMENT *(required and kept on-site)*

Date(s) Updated: \_\_\_\_\_

This assessment is intended for perennial or intermittent streams that provide habitat for fish or frogs or support riparian vegetation. If you do not have streams with riparian vegetation, assess the larger intermittent stream channels that flow during the entire rainy season. Assess ranch/farm streams while standing near the creek. It is important to note that **concerns identified may not be caused by current livestock grazing activities.** Describe the condition and location. Note any recorded problem conditions as caused by current livestock management (**C**), a historic legacy site (**H**), or natural causes (**N**). For more information, refer to *Visual Assessment of Riparian Health* ( <http://anrcatalog.ucanr.edu/pdf/8089LR.pdf>).

Question	Potential Concern	Location ( <i>pasture/stream</i> ) & Description of Condition	Cause ( <i>C, H, or N</i> )
<b>STREAM CHANNEL</b>			
Bare soil along banks of stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Unstable or eroding stream banks?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Does the stream have the potential to support trees (look for remnant trees/shrubs along the channel)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Are crossings for livestock unstable?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Grazing in riparian areas takes place all season?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
<b>STREAM TEMPERATURE</b>			
Is stream exposed to full sun?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Wide and shallow streams?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
Does stream flow appear inadequate, given stream channel size?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		
<b>NUTRIENTS</b>			
Algae growth excessive in stream?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure		

### COMPLETED WATER QUALITY PROJECTS *(optional)*

List all past water quality concerns on the ranch/farm and describe the issue. **A concern does not indicate that livestock grazing or current management caused it.** Describe any previously implemented management practice(s) intended to fix the problem. This includes steps to plan or receive technical/financial assistance (phone calls, ranch visits, applications, etc.), actual implementation or management changes (fencing, seeding, headcut repairs, etc.), and the maintenance of projects or ranch infrastructure (cleaning culverts, scraping corrals, weed removal, etc.). Evaluate whether more work is needed to improve water quality for each listed concern. Attach any old photographs of the concern, including work completed, if available. Use additional sheets if needed.

Water Quality Concern		Location <i>(pasture/ field)</i>	Conservation Practice(s) Completed	Maintenance Needs	Evaluation <i>(Is more work needed?)</i>	Photo Avail- able?
#	Description					

[Click to go to additional page](#)

## FUTURE WATER QUALITY PROJECTS *(required and kept on-site)*

Date(s) Updated: \_\_\_\_\_

List all future potential water quality concerns on the ranch/farm with the expected pollutants from each. **A concern does not indicate that livestock grazing or current management caused it.** This includes locations where your current maintenance prevents problems, such as maintaining ranch roads following winter storms. Consider multiple options for fixing water quality concerns, such as implementing new practices and changing management or maintenance routines. Estimate the approximate cost of each option as well as the amount of time needed to conduct maintenance. Give each project a priority relative to other potential projects, indicating preferred order for implementing the project. Assignment of priority recognizes that the availability of financial and technical assistance determines when work will be done. List the steps taken to plan for the project, including participation in technical and financial assistance programs (ranch visits, meetings, applications, expected contract dates, etc). Use additional sheets if needed.

Water Quality Concern		Location <i>(pasture/ field)</i>	Options for Maintenance, Management Changes, or Practice(s) to Implement	Estimated Cost of Each Option	Priority	Implementation Planning
#	Description					

[Click to go to additional page](#)

## MAPPING RANCH FACILITIES AND RESOURCES *(optional)*

### Mapping

Note the type, scale, and features added on ranch maps. The map scale should be 1:12,000 or finer resolution. Contact local RCD or NRCS for assistance. Resources are available online at [casoilresource.lawr.ucdavis.edu/drupal/](http://casoilresource.lawr.ucdavis.edu/drupal/) (ability to interface with Google Maps or smart phones) and [websoilsurvey.nrcs.usda.gov/app/](http://websoilsurvey.nrcs.usda.gov/app/).

Which map types are being used for this ranch plan?

- topographic (USGS Quadrangle)
- aerial photograph(s) – dates: \_\_\_\_\_
- soil map units
- \_\_\_\_\_
- \_\_\_\_\_

What is the scale of your map(s)?     1:12,000     \_\_\_\_\_  
 \_\_\_\_\_     \_\_\_\_\_

Locate the following important ranch/farm features on your map and attach the map to this plan:

- property lines for each APN
- barns, holding areas, or corrals
- ranch roads, ponds, bridges, or culverts
- pastures, fence lines, or gates
- future water quality projects
- completed water quality projects
- monitoring points for photographs, visual inspections, or Residual Dry Matter (RDM)
- water troughs, tanks, spring developments, or pipelines
- supplements, minerals, or salt blocks
- leased pastures or rangeland
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Watershed Assessment

What types of stream(s) are on the ranch/farm?     Seasonal (intermittent)     Perennial     Both

Name(s) of stream(s) on your ranch/farm (if named):

\_\_\_\_\_

Name of creek, river, waterbody, or wetland downstream (lake, bay, etc.):

\_\_\_\_\_

Is a municipal or domestic water supply source downstream?     Yes     No     Not Sure



**RANCH MAPS *(required and kept on-site)***



## COMPLIANCE MONITORING *(required and kept on-site)*

### Visual Inspections

Annual compliance monitoring consists of

- 1) Wet-season inspections of the ranch following storms or every month (December through April).
- 2) Two dry-season inspections, including one of the entire ranch in September prior to the rainy season.
- 3) One stream survey above and below (upstream and downstream) of the ranch.

Use these inspections with Pasture and Stream Assessments (pages 11 and 12) to decide whether further management practices are needed to improve water quality on the ranch. For indicators of pasture and rangeland health, refer to [http://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/IIRH\\_v4\\_8-15-05.pdf](http://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/IIRH_v4_8-15-05.pdf).

Start the yearly task of compliance monitoring on the ranch in December with the wet-season inspections. Follow these up with two dry-season inspections (one must be in September) to make preparations and implement conservation practices before the winter rains arrive. To monitor more efficiently, conduct the stream survey above and below the ranch during one of the wet-season or dry-season inspections.

In the table below, note the results of monitoring activities for 1) field observations of potential water quality concerns found during visual inspections, 2) estimates of Residual Dry Matter (RDM), and 3) photographs taken. List the dates when inspections were completed on the Annual Certification Form (page 19) that will be submitted to the Water Board by November 15 of each year.

### Residual Dry Matter (RDM) & Photo-Monitoring

Estimate RDM in the fall using visual and clip/dry/weigh methods ([www.wildlandsolutions.com/rdm/](http://www.wildlandsolutions.com/rdm/)). Interpret data as less than (<), equal to (=), or greater than (>) the minimum RDM objective for each pasture using the Pasture Inventory on page 10 based on *Guidelines for Residual Dry Matter (RDM) Management* (<http://anrcatalog.ucanr.edu/pdf/8092.pdf>).

Photographs are taken from the same location over time to document 1) RDM monitoring, 2) implemented conservation practices such as upgrading culverts, and 3) improvements at a site over time, such as increased vegetation cover. List and describe the locations of photo points and attach photos if possible (see *Photo-Monitoring for Better Land-Use Planning and Assessment*, <http://anrcatalog.ucanr.edu/pdf/8067.pdf>).

Date	Location (pasture/site)	RDM Estimate (check method, photo, minimum)	Photo-pt. Directions, Low RDM Reasons, Inspection Notes
		<input type="checkbox"/> visual <input type="checkbox"/> clip <input type="checkbox"/> photo RDM = _____ lb/ac <input type="checkbox"/> > min. <input type="checkbox"/> = min. <input type="checkbox"/> < min.	
		<input type="checkbox"/> visual <input type="checkbox"/> clip <input type="checkbox"/> photo RDM = _____ lb/ac <input type="checkbox"/> > min. <input type="checkbox"/> = min. <input type="checkbox"/> < min.	
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**ANNUAL CERTIFICATION (required to be completed and submitted annually)  
REPORTING PERIOD OF OCTOBER 1, 20\_\_ THROUGH SEPTEMBER 30, 20\_\_**

This ranch/farm is in compliance with the Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Napa River and Sonoma Creek Watersheds, Resolution No. R2-2017-0043.

Farm / Ranch Name:	Phone:
	Email:
Mailing Address or P.O. Box:	City, State, ZIP Code:
List all Assessor Parcel Numbers (APNs) or legal description (Township, Range, Sections) for rangeland and pasture fields included in this plan. Indicate if the parcels were not previously included in the Annual Certifications and may not be part of the Notice of Intent originally filed:	
Were there Grazing Operations during the reporting period?	Y / N
Is your grazing operation still eligible for waiver enrollment (100 acres or larger)?	Y / N
During the reporting period, were changes made to your grazing operation (for example, expansion or change in herd type, addition or subtraction of parcels grazed, etc.) that would require update of your Ranch Water Quality Plan?	Y / N

**Ranch Plan** (check one)

- Ranch Water Quality Plan was completed in \_\_\_\_\_ (year) and will be updated in \_\_\_\_\_ (year).  
 Ranch Water Quality Plan is expected to be finished in \_\_\_\_\_ (year).

**Compliance Monitoring Inspections** (fill in dates when monitoring inspections were completed)

- 1) Wet-season inspections conducted on: Dec. \_\_\_\_\_ Jan. \_\_\_\_\_ Feb. \_\_\_\_\_  
March \_\_\_\_\_ April \_\_\_\_\_
- 2) Dry-season inspections occurred on: June \_\_\_\_\_ Sept. \_\_\_\_\_
- 3) Survey of stream(s) below and above ranch (Grazing Operations) completed on: \_\_\_\_\_
- 4) RDM results:  All fields > minimum  Most fields = min.  Most fields < min.  All fields < min.

Explanation:

\_\_\_\_\_

\_\_\_\_\_



## GLOSSARY

APN (Assessor's Parcel Number): Unique number assigned to each tract of land by the Tax Assessor.

Animal-Unit (AU): considered to be one mature cow approximately 1,000 pounds, either dry or with calf up to 6 months of age, or their equivalent, based on a standardized amount of forage consumed.

Animal-Unit month (AUM): amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day. The term AUM is commonly used in three ways: (a) stocking rate, as in "X acres per AUM" (b) Forage allocations, as in "X AUMs in allotment A" (c) Utilization, as in "X AUMs taken from Unit B".

Available Forage: portion of the forage production that is accessible for use by a specified kind or class of grazing animal.

Carrying capacity: maximum stocking rate possible which is consistent with maintaining or improving vegetation or related resources. It may vary from year to year on the same area due to fluctuating forage production.

Cover: (1) the combined aerial parts of plants expressed as percent of the total area in question. (2) Shelter and protection for wildlife.

Discharge: the volume of water that passes a given location within a given period of time. Usually expressed in cubic feet per second.

Erosion: the process in which a material is worn away by a stream of liquid (water) or air, often due to the presence of abrasive particles in the stream.

Exclosure: an area fenced to exclude animals.

Exclusion: range that is closed to grazing by livestock.

Flood, 100-year: a 100-year flood does not refer to a flood that occurs once every 100 years, but to a flood level with a 1 percent chance of being equaled or exceeded in any given year.

Flood plain: a strip of relatively flat and normally dry land alongside a stream, river, or lake that is covered by water during a flood.

Grade stabilization: a structure used to control the vertical and horizontal cutting in natural or artificial channels.

Grazing, Heavy: a comparative term which indicates that the stocking rate of a pasture is relatively greater than that of other pastures. Often erroneously used to mean overuse.

Grazing, Light: a comparative term which indicates that the stocking rate of one pasture is relatively less than that of other pastures. Often erroneously used to mean proper use.

Grazing Management Plan: a program of action designed to secure the best practicable use of the forage resources with grazing or browsing animals.

Grazing Period: the length of time that animals are allowed to graze on a specific area.

Grazing Season: (1) On public lands, an established period for which grazing permits are issued. May be established on private land in a grazing management plan. (2) The time interval when animals are allowed to utilize a certain area.

Grazing System: a specialization of grazing management which defines the periods of grazing and non-grazing. Descriptive common names may be used; however, the first usage of a grazing system name in a publication should be followed by a description using a standard format. This format should consist of at least the following: The number of pastures (or units) number of herds, length of grazing periods, length of non-grazing periods for any given unit in the system followed by an abbreviation of the unit of time used.

Gully: an erosion channel formed by concentrated surface runoff; larger than 1 square foot in cross-sectional area (larger than 1 foot deep by 1 foot wide).

Headwater(s): (1) the source and upper reaches of a stream; also the upper reaches of a reservoir. (2) the water upstream from a structure or point on a stream. (3) the small streams that come together to form a river.

Historical influence: sediment delivery that has a decades-long history.

Hydrological connectivity: degree to which water from a source site or unstable area is conveyed to the network of the natural watercourse of concern.

Impermeable layer: a layer of solid material, such as rock or clay, which does not allow water to pass through.

Infiltration: flow of water from the land surface into the subsurface.

Landslide treatment: treating in place material such as mine spoils, mine waste, or overburden to reduce downslope movement of sediment.

Management induced: sediment delivery traced to land management and use.

Mass wasting: downslope movement of soil mass under force of gravity; often used synonymously with “landslide.”

Mercury: A silvery-white poisonous metallic element, liquid at room temperature and used in thermometers, barometers, vapor lamps, and batteries and in the preparation of chemical pesticides.

Methylmercury: An organic form of mercury that is highly toxic and is the main culprit in mercury poisoning. Methylmercury is easily absorbed into the living tissue of aquatic organisms, is not easily eliminated, and therefore accumulates in fish that are predators. The degree to which mercury is transformed into methylmercury and transferred up the food chain through bioaccumulation depends on factors such as water chemistry and the complexity of the food web.

Natural: sediment delivery resulting from natural influences only.

Non-point source (NPS) pollution: pollution discharged over a wide land area, not from one specific location. These are forms of diffuse pollution caused by sediment, nutrients, organic and toxic substances originating from land-use activities, which are carried to lakes and streams by surface runoff. Non-point source pollution is contamination that occurs when rainwater, snowmelt, or irrigation washes off plowed fields, city streets, or suburban backyards. As this runoff moves across the land surface, it picks up soil particles and pollutants, such as nutrients and pesticides.

Nutrients: Nutrients are chemical elements and compounds found in the environment that plants and animals need to grow and survive. For water-quality investigations the various forms of nitrogen and phosphorus are the nutrients of interest. The forms include nitrate, nitrite, ammonia, organic nitrogen (in the form of plant material or other organic compounds), and phosphates (orthophosphate and others). Nitrate is the most common form of nitrogen and phosphates are the most common forms of phosphorus found in natural waters. High concentrations of nutrients in water bodies can potentially cause eutrophication and hypoxia.

Overgrazing: continued heavy grazing which exceeds the recovery capacity of the community and creates a deteriorated range.

Overstocking: placing a number of animals on a given area that will result in overuse if continued to the end of the planned grazing period.

Overuse: utilizing an excessive amount of the current year's growth which, if continued, will result in range deterioration.

Pathogen: a disease-producing agent; usually applied to a living organism. Generally, any viruses, bacteria, or fungi that cause disease.

Peak flow: the maximum instantaneous discharge of a stream or river at a given location.

Photo-point: an established point used to conduct photographic monitoring.

Legacy: something received from an ancestor or predecessor or from the past.

Range condition: (a) A generic term relating to present status of a unit of range in terms of specific values or potentials. Specific values or potentials values or potentials must be stated. (b) Some agencies define range condition as follows: The present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site.

Residual Dry Matter (RDM): the old plant material left standing or on the ground at the beginning of a new growing season. It indicates the combined effects of the previous season's forage production and its consumption by grazing animals of all types. RDM remaining in the fall will influence subsequent species composition, forage production and sheet/rill erosion. Management objectives of RDM targets and minimum standards are influenced by slope, woody vegetation, utilization, and annual precipitation. As a result, monitoring results are not intended for regulatory purposes and need interpretation to properly inform rangeland managers and improve grazing practices.

Rest: leaving an area ungrazed, thereby foregoing grazing of one forage crop. Normally rest implies absence of grazing for a full growing season or during a critical portion of plant development, i.e., seed production.

Rest-rotation: a grazing management scheme in which rest periods for individual pastures, paddocks, of grazing units, generally for the full growing season, are incorporated in to a grazing rotation.

Revegetation: to plant or replant (barren or denuded land) with vegetation.

Rill: an erosion channel formed by concentrated surface runoff; less than 1 square foot in cross-sectional area (less than 1 foot deep by 1 foot wide).

Riparian zone: the banks and adjacent areas of water bodies, water courses, seeps, and springs whose waters provide soil moisture sufficiently in excess of that otherwise available locally so as to provide a more moist habitat than that of contiguous flood plains and uplands.

Road cut failure: sediment delivery influenced by the failure of the slope left after a hillside is cut to make a road.

Road drainage design: sediment delivery influenced by the concentration and channeling of runoff from a road.

Road fill failure: sediment delivery influenced by the failure of materials built up to form a road.

Road improvement: measures to reduce road-associated erosion, including culvert improvement, road grading, and road surfacing.



Rotational grazing: a grazing scheme where animals are moved from one grazing unit (paddock) in the same group of grazing units to another without regard to specific graze rest periods or levels of plant defoliation.

SFBRWQCB (San Francisco Bay Regional Water Quality Control Board): Resource agency charged with protecting the quality of California waters.

Sacrifice area: a portion of the range, irrespective of site, that is unavoidably overgrazed to obtain efficient overall use of the management area.

Sediment: material transported and deposited by water or air.

Sheet erosion: the loss of thin layers of soil across a large surface area.

Short-duration grazing: grazing management whereby relatively short periods (days) of grazing and associated non-grazing are applied to range or pasture units. Periods of grazing and non grazing are based upon plant growth characteristics. Short duration grazing has nothing to do with intensity of grazing use.

Stocking density: the relationship between number of animals and area of land at any instant of time. It may be expressed as animal units per acre, animal units per section, or AU/ha.

Stocking plan: the number and kind of livestock assigned to one or more given management areas or units for a specified period.

Stocking rate: the number of specific kinds and classes of animals grazing or utilizing a unit of land for a specified time period. May be expressed as animal unit months or animal unit days per acre, hectare, or section, or the reciprocal (area of land/animal unit month or day). When dual use is practiced (e.g., cattle and sheep), stocking rate is often expressed as animal unit months/unit of land or the reciprocal.

Stream: a general term for a body of flowing water; natural water course containing water at least part of the year.

Streambank protection: stabilization and protection of streambanks, lakes, estuaries, or excavated channels against erosion.

Surface treatment: efforts such as mulching used to control erosion on exposed, disturbed, or bare soils.

TMDL (Total Maximum Daily Load): the assessment of problems, sources, and control actions to restore and protect water quality in individual bodies of water.

Trampling: treading underfoot; the damage to plants or soil brought about by movements or congestion of animals.

Tributary: a smaller river or stream that flows into a larger river or stream. Usually, a number of smaller tributaries merge to form a river.

Turbidity: the amount of solid particles that are suspended in water and that cause light rays shining through the water to scatter. Thus, turbidity makes the water cloudy or even opaque in extreme cases. Turbidity is measured in nephelometric turbidity units (NTU).

Undergrazing: the act of continued underuse.

Unstable area: site with potentially deliverable sediment.

Water quality: a term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.

Watershed: the land area that drains water to a particular stream, river, or lake. It is a land feature

that can be identified by tracing a line along the highest elevations on a map, often a ridge.

**PASTURE INVENTORY, additional page (optional)**

Date(s) Updated: \_\_\_\_\_

Pasture/ Field		Soil Map Unit(s)	Size (acres)	Slope(s) (%)	Woody Vegetation Cover (%)	RDM Table Number	RDM Minimum (lb/acre)
#	Name/ Location						

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**COMPLETED WATER QUALITY PROJECTS, additional page (optional)**

Water Quality Concern		Location <i>(pasture/ field)</i>	Conservation Practice(s) Completed	Maintenance Needs	Evaluation <i>(Is more work needed?)</i>	Photo Available?
#	Description					

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**FUTURE WATER QUALITY PROJECTS, additional page *(required and kept on-site)***

Date(s) Updated: \_\_\_\_\_

Water Quality Concern		Location <i>(pasture/ field)</i>	Options for Maintenance, Management Changes, or Practice(s) to Implement	Estimate Cost of Each Option	Priority	Implementation Planning
#	Description					

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**PASTURE USE RECORDS, additional page (optional)**

Field/Pasture		Livestock Number	Animal Type	Date(s) In	Date(s) Out	Notes (pasture/animal needs)
#	Name/Location					

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**COMPLIANCE MONITORING, additional page (required and kept on-site)**

Date	Location (pasture/site)	RDM Estimate (check method, photo, minimum)	Photo-pt. Directions, Low RDM Reasons, Inspection Notes
		<input type="checkbox"/> visual <input type="checkbox"/> clip <input type="checkbox"/> photo RDM = _____ lb/ac <input type="checkbox"/> > min. <input type="checkbox"/> = min. <input type="checkbox"/> < min.	
		<input type="checkbox"/> visual <input type="checkbox"/> clip <input type="checkbox"/> photo RDM = _____ lb/ac <input type="checkbox"/> > min. <input type="checkbox"/> = min. <input type="checkbox"/> < min.	
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