



Irrigated Lands Program Total Nitrogen Applied (TNA) Report Instructions

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TNA Report Instructions Summary

The purpose of this document is to provide guidance on the information necessary to submit the TNA Report and instructions on how to report in GeoTracker.

Annually by March 1, growers with ranches located in Groundwater Phase Areas 2 and 3 must report crop types and acres grown, the total amount of nitrogen applied from all sources, whether crops were grown using organic or conventional methods, and information describing the basis for the amount of nitrogen applied.

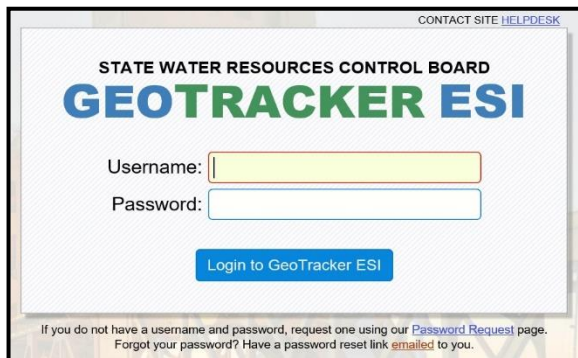
Please refer to Geotracker to determine the ranch Groundwater Phase Area designations, and the Agricultural Order 4.0 Compliance Calendar to determine corresponding years to submit the TNA Report:

https://www.waterboards.ca.gov/rwqcb3/water_issues/programs/ilp/compliance_calendar/index.html

How to Report TNA in Geotracker

To submit the TNA Report, log in to GeoTracker by navigating to <http://geotracker.waterboards.ca.gov/esi>.

Enter your username and password and click on, Login to GeoTracker ESI.

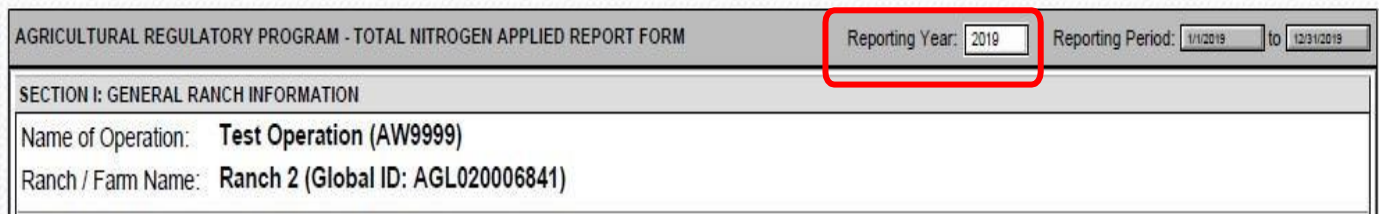


To submit the TNA report click on the “[SUBMIT TNA REPORT]” link, located to the right of each ranch name.

EDIT OPERATION INFORMATION			PRINT OPERATION FORM				ADD RANCH / FARM TO THIS OPERATION			
	RANCH / FARM NAME	ADDRESS	CITY	IRRIGATED ACRES	TAILWATER ACRES	GW PHASE AREA	SW PRIORITY AREA			
[EDIT RANCH INFO]	TEST RANCH 2	895 AEROVISTA PLACE	SAN LUIS OBISPO	10	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT]	[SUBMIT INMP REPORT]
[EDIT RANCH INFO]	TEST RANCH 3	900 AEROVISTA	SAN LUIS OBISPO	100	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT]	[SUBMIT INMP REPORT]
[EDIT RANCH INFO]	TEST: SARAH TEST 1	895 AEROVISTA PLACE, SUITE 101	SAN LUIS OBISPO	100	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT]	[SUBMIT INMP REPORT]

How to Submit the TNA Report

Select the TNA reporting year from the dropdown menu “Reporting Year” located in the upper right corner of the form.



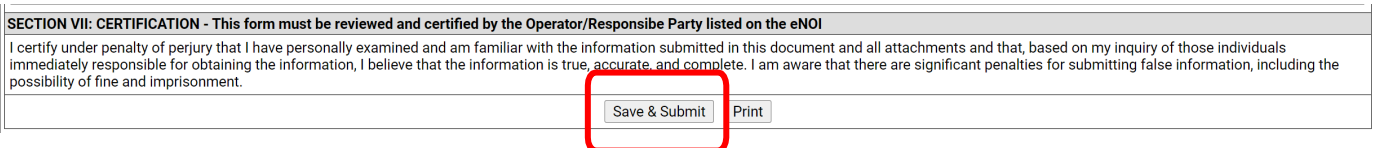
AGRICULTURAL REGULATORY PROGRAM - TOTAL NITROGEN APPLIED REPORT FORM

Reporting Year: 2019 Reporting Period: 1/1/2019 to 12/31/2019

SECTION I: GENERAL RANCH INFORMATION

Name of Operation: Test Operation (AW9999)
Ranch / Farm Name: Ranch 2 (Global ID: AGL020006841)

Complete all sections of the TNA Report and click on the “SAVE & SUBMIT” button located at the bottom of the form.



SECTION VII: CERTIFICATION - This form must be reviewed and certified by the Operator/Responsible Party listed on the eNOI

I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this document 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.

Save & Submit Print

If the TNA Report is complete, a pop-up message will appear stating that the TNA Report has been successfully saved and submitted. This confirms that the TNA Report has been submitted. Click on “OK”.

Warning Pop-up Messages

Some sections of the form contain warning pop-up messages, when the value entered is below or above a typical range. The warning pop-up message will appear in red to alert the user to check the value and/or units (i.e., pounds nitrogen/crop acre). These warning pop-up messages will not prevent the TNA Report from being saved or submitted.

Example warning pop-up message:

The water volume applied does not fall within the typical range.
Review all information reported in Section I, II and IV to verify the estimation of water volume applied is correct.

How to Correct Submittal Errors

Geotracker will not allow an incomplete TNA Report to be saved or submitted. If a TNA Report is incomplete and the “Save & Submit” is clicked on, a highlighted yellow list of incomplete and required fields will appear at the top of the form. If this occurs, please correct the errors listed in yellow at the top of the page.

Example of a highlighted yellow list of errors.

- *PHYSICAL RANCH ACRES REPORTING* IS A REQUIRED FIELD.
- *TOTAL VOLUME OF WELL / CITY WATER / SURFACE WATER* IS A REQUIRED FIELD.
- *AVERAGE NITRATE CONCENTRATION IN WELL / CITY WATER / SURFACE WATER* IS A REQUIRED FIELD.
- *NITRATE / NITROGEN SELECTION* IS A REQUIRED FIELD.
- *CROP TYPE* IS A REQUIRED FIELD.
- *TOTAL CROP ACRES* IS A REQUIRED FIELD.
- *NITROGEN PRESENT IN SOIL* IS A REQUIRED FIELD.
- *NITROGEN APPLIED IN CONVENTIONAL FERTILIZERS* IS A REQUIRED FIELD.
- *AT LEAST ONE NITROGEN PRESENT IN SOIL MUST BE > 0*
- *BASIS* IS A REQUIRED FIELD.

After errors are corrected, click on the “Save & Submit” button at the bottom of the form. If the report is complete, a pop-up message will appear stating that the TNA Report has been successfully saved and submitted. This confirms that the TNA Report has been submitted. Click on “OK”.

How to View a Saved TNA Report

To view a previously submitted TNA Report, click on the “[SUBMIT TNA REPORT]” link located to the right of each ranch name. Once on the reporting page, select the TNA Report year from the dropdown menu “Reporting Year” located in the upper right corner of the form click on the dropdown menu for Reporting Year at the top of the report in the grey box and select the reporting year.

EDIT OPERATION INFORMATION			PRINT OPERATION FORM				ADD RANCH / FARM TO THIS OPERATION		
	RANCH/ FARM NAME	ADDRESS	CITY	IRRIGATED ACRES	TAILWATER ACRES	GW PHASE AREA	SW PRIORITY AREA		
[EDIT RANCH INFO]	TEST RANCH 2	895 AEROVISTA PLACE	SAN LUIS OBISPO	10	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT] [SUBMIT INMP REPORT]
[EDIT RANCH INFO]	TEST RANCH 3	900 AEROVISTA	SAN LUIS OBISPO	100	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT] [SUBMIT INMP REPORT]
[EDIT RANCH INFO]	TEST: SARAH TEST 1	895 AEROVISTA PLACE, SUITE 101	SAN LUIS OBISPO	100	0	3	4	[EDIT COMPLIANCE INFO]	[SUBMIT TNA REPORT] [SUBMIT INMP REPORT]

Information Needed to submit a TNA Report

TNA reporting period: January 1st to December 31st of each year.

TNA reporting deadline: TNA Reports must be received by March 1st of each year, or within 60 days after terminating a ranch.

Records Required to Report TNA:

- Total nitrogen applied in pounds per crop-acre (lbs./crop-acre) in fertilizers and amendments and all other materials/products containing nitrogen in any form or concentration, including but not limited to, organic and inorganic fertilizers, foliar fertilizers, slow-release fertilizers, compost, compost teas, manure, and extracts;
- Average nitrogen concentration in the estimated volume of irrigation water applied during the annual reporting period and the calculated or estimated nitrogen load in pounds/ranch-acre from irrigation water; and

- c. Total nitrogen present in the soil (pounds/crop-acre) available for crop uptake. The Total nitrogen present in the soil must be measured at least once per annual reporting period for each ranch and only needs to be reported once for the first crop listed on the report form.

How to Report Crop Information:
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- a. For short-term crops grown less than 12 months and harvested during the reporting period (January 1st to December 31st): report the total nitrogen applied to the entire crop throughout its growing cycle.
- b. For intermediate-term crops, grown more than 12 months but less than 24 months (such as strawberries and bell peppers) and harvested during the reporting period (January 1st to December 31st) select the specific crop from the dropdown menu and select "I-FH, Intermediate-term Crop (12 to 24 months long), Final Harvest" in the Crop Duration column. Report the total nitrogen applied to the crop throughout its entire growing cycle
- c. For intermediate-term crops, grown more than 12 but less than 24 months (i.e., strawberries and bell peppers) for the first reporting period (January 1st to December 31st) when the crop is initiated or planted and not harvested, select the specific crop from the dropdown menu and select "I-NFH, Intermediate-term Crop (12 to 24 months long), NOT Final Harvest" in the Crop Duration column. This indicates that the crop is still in the ground and will be harvested after the end of this first reporting period. In this first TNA report, include the amount of nitrogen applied to the crop from the beginning of its growing cycle until December 31st. In the following (second) year or reporting period (January 1st to December 31st), when the intermediate-term crop is harvested, select the crop duration as "I-FH, Intermediate-term Crop (12 to 24 months long), Final Harvest". The nitrogen applied in fertilizers should be updated to reflect the TNA applied to the crop for the *entire growing cycle*. Note: for intermediate-term crops, you will be reporting the nitrogen applied to the crop multiple times. First, for the first year when the crop was planted. Then the total amount of nitrogen applied in fertilizers during *the entire crop entire growing cycle* is reported in the TNA form for the year when the crop is harvested. In the second reporting year (TNA form) the volume of irrigation water applied must include the volume applied to the intermediate- term crop throughout its entire growing cycle.
- d. For long-term crops, grown more than 24 months (i.e., blueberries): report the total nitrogen applied during the reporting period (January 1st to December 31st) on an annual basis.
- e. For crops that are considered baby crops (i.e., baby lettuce): select the "crop, baby" option in the specific crop dropdown menu.

Section I: General Ranch Information

Name of Operation, AW#, Ranch Name, and Global ID

This information is auto filled from the ranch information page (ranch eNOI) in Geotracker.

Note: information in the eNOI must be current and accurate prior to submitting the TNA Report.

Physical Ranch Acres Reporting

Report the total acreage for which the TNA Report applies. Note: reporting acreage must include cover crops acres, even if no nitrogen was applied to the cover crops.

The physical reporting acreage includes all farmed acres plus any fallowed acres (not under crop production) during the entire reporting period (January 1st to December 31st). Report the fallowed acres in the "Physical Ranch Acres Reporting" box and separately in the corresponding "Fallow Acres" box.

Fallow Acres

Report any fallowed acres that were not under crop production during the entire reporting period (January 1st to December 31st).

Sum of Total Crop Acres

This value is automatically calculated from crop acres reported in "Section IV: Nitrogen Applied with Conventional and/or Organic Fertilizers". This value is intended to help ensure all required acres are reported.

The sum of the crop acres plus the fallow acres should equal or exceed the physical ranch acres reported. If any acres of the ranch were fallow throughout the entire reporting period, enter them in the "Fallow Acres" box. If there are unusual circumstances where the sum of the total crop acres plus fallow acres are less than the physical ranch acres reporting, provide an explanation in "Section VI: Explanations and Comments".

Dropdown Menu Selections for Greenhouse, Nursery, or Hydroponic Ranches

Select one of the options to best describe how the irrigation water is managed, collected, and drained out of the ranch.

Example: If the greenhouse operation has a reverse osmosis (RO) system installed that recycles the water up to 5 times, and the salts (brine) of the RO system is cleaned and removed as dry material, then the proper selection is "All excess water is captured and recycled; the only waste is dry material, which is properly disposed of."

APN(S) Assessor Parcel Numbers

The Assessor Parcel Number APN information is automatically generated and updated in the TNA Report from the ranch eNOI. Select the APN(s) that corresponds to acreage included in the TNA Report.

If APN(s) are not selected, provide an explanation in “Section IV: Explanations and Comments”.

In instances where an APN(s) was removed from the ranch eNOI, prior to TNA Report submittal, the APN(s) must be temporarily added back to the ranch eNOI. After the TNA Report is submitted, remove the APN(s) from the ranch eNOI.

Errors in Section I

The field “Physical Ranch acres reporting is a required field. Make sure you report the number of acres that correspond to the TNA report.

The background of the "Sum of Total Crop Acres" cell will be pink if the sum of the crop acres reported in “Section IV: Nitrogen Applied with Conventional and/or Organic Fertilizers” and in “Fallow Acres”, is less than the “Physical Ranch Acres Reporting”. If this error is received, double-check that crop acres grown and harvested during the reporting period and acres fallowed during the entire reporting period (January 1st to December 31st) are reported.

Section II: Nitrogen Applied with Irrigation Water

Include water sources and applications of water (leaching, runoff, backflush, operational spills, etc.). Do not include rainwater.

Section II-A: Water Source(s)

Report the primary source of irrigation water applied to the ranch during the reporting period. If the ranch used water from more than one type of water source, select the one that provided the most volume. This section contains two dropdown menus; the first one includes options to select if the primary source is from a well, city, or surface water source. The second includes options to select if the irrigation water comes from a recycled/reclaimed source.

If the ranch used well, city water, and/or surface water, the nitrogen applied with this source of irrigation water is reported by completing "Section II-B: Well / City Water / Surface Water". If the ranch used water from a recycled or reclaimed water project, the nitrogen applied with this source of irrigation water is reported by completing "Section II-C: Recycled / Reclaimed Water". If the ranch used well, city, and/or surface water and a recycled / reclaimed source, complete both sections and select the recycled / reclaimed water option that includes the words "and another source" at the end. If the ranch used water from more than one type of recycled / reclaimed source, select the one that provided the most volume.

Section II-B: Well / City Water / Surface Water

Average Nitrate Concentration in Well / City Water / Surface Water (mg/L)

Report the average nitrate concentration, in milligrams per liter (mg/L) of well, city, or surface water used as the primary source of irrigation water on the ranch. This number should include the amount of nitrate naturally dissolved in the water during use. This number should not include liquid fertilizers applied during fertigation.

To determine the average nitrate concentration you must, obtain a laboratory analysis or utilize a portable measuring device that provides a discrete numeric result for the nitrate concentration of the primary source of irrigation water, at a minimum, applied to the ranch, during the reporting period.

Select the proper units to report the average nitrate concentration of irrigation water: Nitrate as Nitrate (commonly shown as NO₃ in laboratory reports) or Nitrate as Nitrogen (commonly shown as N, NO₃-N, or NO₃NO₂N in laboratory reports).

If more than one source of water is used to irrigate, and concentrations for each source are known, estimate the volume applied from each source of irrigation water to obtain the weighted average nitrate concentration.

Note 1: A discrete measurement is required for the primary source of irrigation water applied. However, any methodology, such as nitrate quick test, can be used to measure the concentration of all other sources of irrigation water applied (i.e., backup wells).

Note 2: milligrams per liter (mg/L) = parts per million (ppm)

Estimated Total Volume of Well / City Water / Surface Water Applied to Entire Reporting Acres During Reporting Period (gallons)

Enter the estimated total gallons of city or surface water applied to the entire reporting acreage during the reporting period (January 1st to December 31st).

The estimated total volume of irrigation water applied should include any water applied for leaching, runoff, backflush, operational spills, etc.

Rainwater should not be included.

The average nitrogen concentration and the estimated total volume reported in Section II-B are used to calculate the “Nitrogen Applied with Irrigation Water (lbs./ranch-ac)” value under “Section II-D: Nitrogen Applied”.

Section II-C: Recycled / Reclaimed Water

Report if Recycled / Reclaimed irrigation water was used on the ranch from any of the nine recycled or reclaimed water projects and/or the four general categories listed below.

Contact the processing facility directly to obtain the total nitrogen concentration in the recycled water, and the community services, the sanitation district, or the city(ies) to obtain the total nitrogen concentration in reclaimed water. If the total nitrogen concentration is not available, you must sample the recycled/reclaimed water used to irrigate crops and report the total nitrogen concentration.

The contact information for each project are listed below. Projects include:

- Blue Valve, San Benito County Water District Delivered Water. Water District Website: <https://www.sbcwd.com/about-us/>, Delivered Water: <https://www.sbcwd.com/recycled-water/>, Phone: (831) 637-8218.
- CSIP, Monterey County Water Resources Agency, Castroville Seawater Intrusion Project/ Salinas Valley Reclamation. Water Agency Website: <https://www.co.monterey.ca.us/government/government-links/water-resources-agency/about/contact>, Email: mcwater@co.monterey.ca.us, Seawater Intrusion Project: <https://www.montereyonewater.org/210/Castroville-Seawater-Intrusion-Project-O>, Email: customerservice@my1water.org, Phone: (831) 372-3367 or (831) 422-1001.
- Hollister Domestic Recycled Water Plant, Hollister Tertiary Treated Recycled Water. Website: <https://hollister.ca.gov/government/city-departments/community-services/utilities-sewer/>, Email: pio@hollister.ca.gov, Phone: (831) 637-7100.
- Laguna County Sanitation District, Santa Maria. District Website: <https://www.countyofsb.org/1355/Laguna-Sanitation>, Phone: 805-803-8750.
- Los Osos Water Recycling Facility, Los Osos. Waste Water Project Website: <https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Los-Osos-Wastewater-System.aspx>, Email: publicworks@co.slo.ca.us, Phone: (805) 781-5252.

- PVWMA, Pajaro Valley Water Management Agency. Recycle Water Website: <https://www.pvwater.org/recycled-water>, Email: Info@PVWater.org, Phone: (831) 722-9292.
- Santa Cruz Davenport Reclamation Facility, Davenport County Sanitation District. District Website: <https://dpw.co.santa-cruz.ca.us/Home/SewerWater/DavenportCountySanitationDistrict.aspx>, Email: dpwsanitation@santacruzcounty.us, Phone: (831) 454-2160.
- SCRWA, Santa Clara Valley Water District and South County Regional Wastewater Authority, Gilroy and Morgan Hill Recycled Water. Wastewater Authority (SCRWA) Website: <https://www.cityofgilroy.org/561/South-County-Regional-Wastewater-Authori>, Email: scrwamail@ci.gilroy.ca.us, Phone: (408) 848-0480.
- Trilogy Master Plan Community Reclaimed Water in Nipomo, Woodlands Water Recycling Facility. Facility Website: <http://woodlandsmwc.com/water-conservation/water-conservation-at-the-woodlands/>, Email: lonnier@wallacegroup.us, Phone: (805) 540-5208.

General Categories include:

- Domestic Reclaimed Water with Secondary Treatment.
- Fruit and Vegetable Processing Facility (Recycled Water),
- Olive Processing Facility (Recycled Water),
- Winery Processing Facility (Recycled Water).

Average Total Nitrogen Concentration of Recycled / Reclaimed Water (from agency data)

Contact the agency or facility to obtain the total nitrogen concentration and volume of recycled or reclaimed water applied during the reporting period. If the monitoring of the total nitrogen concentration (sampling location) is upstream of any other source of water blended into the flow (i.e., from additional wells), consider sampling the water used to irrigate crops and report the total nitrogen concentration.

Estimated Total Volume of Recycled / Reclaimed Water Applied to Entire Reporting Acres During Reporting Period (gallons)

Enter the estimated total gallons of recycled or reclaimed water applied to the ranch during the period (January 1st to December 31st).

Contact the corresponding agency or facility to verify the volume of recycled or reclaimed water delivered. The estimated total volume of irrigation water applied should include water applied for leaching, runoff, backflush, operational spills, etc. Rainwater should not be included.

The total nitrogen concentration and the estimated total volume reported in Section II-C are used to calculate the “Nitrogen Applied with Irrigation Water (lbs./ranch-ac)” value under “Section II-D: Nitrogen Applied”.

Section II-D: Nitrogen Applied with Irrigation Water

Nitrogen Applied with Irrigation Water (water from all sources) (pounds/ranch-acre)

This value corresponds to the pounds of nitrogen from irrigation water applied to each ranch-acre (lbs./ranch-ac) during the reporting period.

The value is automatically calculated using information provided in “Section I: General Ranch Information” and “Section II: Nitrogen Applied with Irrigation Water”.

Section II-E: Volume Check

This value corresponds to the estimated average acre-feet of water applied to each crop-acre and is intended to help ensure that reported volumes of water and crop-acre information is entered accurately.

The value is automatically calculated using information provided in “Section II: Nitrogen Applied with Irrigation Water” and “Section IV: Nitrogen Applied with Conventional and/or Organic Fertilizers.”

Errors in Section II

“Section II-A: Water Source(s)” is a required field.

“Section II-B” and/or “Section II-C”, nitrogen concentration in water and estimated total volume of water applied to entire reporting acres during reporting period are required fields.

Report nitrogen and volume information for irrigation water applied.

“Section II-E: Volume Check” background will be pink if the estimated acre-feet of water applied to each crop-acre is not typical for crops grown in the central coast region. Review all information reported in Sections I, II, and IV of the form to ensure that the estimated average acre-feet of water applied to each crop-acre grown is correct.

Section III: Nitrogen Applied with Compost and Other Materials

Material Applied

Report information for each specific compost or amendment applied to the ranch during the reporting period by selecting the type of material applied from the dropdown menu. If the same type of material is applied more than once, applications can be reported individually on separate rows or combined and reported together on one row. If combined, report the total pounds of nitrogen applied from all applications, the total acres that received all the applications, and the weighted average for the C:N ratio, as applicable. The dropdown list of materials to report includes “Compost, Mulch, Amendments (High Carbon), Amendments (Other), and Other”. If “Other” is chosen, a text field will appear, and you must provide a description of this material.

Nitrogen Applied in Compost and Other Materials (total pounds)

In pounds, report the total nitrogen applied from compost, amendments, and all other nitrogen containing materials (such as compost teas, humic acids, bacterial extracts, soil enhancers, but do not include the nitrogen applied with conventional and/or organic fertilizers, which must be reported in “Section IV: Nitrogen Applied with Conventional and/or Organic Fertilizers”. The value(s) reported for compost and/or amendment applications must be converted from pounds or tons of gross material to pounds of nitrogen.

Example 1:

If a grower applies 20 pounds of nitrogen to 10 physical ranch-acres, then applies 30 pounds of nitrogen to a different 5 physical ranch-acres, and finally applies 30 more pounds of nitrogen to another 10 physical ranch-acres; report 80 pounds of nitrogen ($20+30+30=80$) to a total of 25 ranch-acres ($10+5+10=25$).

Example 2:

If a grower applies 20 pounds of nitrogen to 10 physical ranch-acres, then applies 30 pounds of nitrogen to those same 10 physical ranch-acres, and finally applies 30 more pounds to the same 10 physical ranch-acres; report pounds of nitrogen ($20+30+30=80$) to 10 ranch-acres.

Ranch Physical Acres Where Compost and Other Materials were Applied

Report the total number of ranch acres (physical acres) that received nitrogen applications from compost and amendments and all other materials were made.

C: N Ratio of Compost and Other Materials (optional)

The carbon-to-nitrogen ratio (C:N ratio), is a ratio of the mass of carbon to the mass of nitrogen in a substance. The C:N ratio is not a required field. However, to determine eligibility for a discount or credit that relies on reported C:N ratio information, the C:N ratio of the compost or other material applied must be provided in this section. To determine the

C:N ratio of compost or other material, contact an agricultural laboratory and inquire about this type of testing. The following three laboratories are available and provide this service:

- Dellavalle Laboratory Inc
<https://dellavallelab.com/agricultural-services/>
- ALC Consolidated
<https://aglaboratory.com/plant-analysis-2/>
- FGL Agricultural Lab
<http://www.fglinc.com/frmCustomerServices.php?choice=agronomics¤tpage=CustomerServices>

Section IV: Nitrogen Applied with Conventional and / or Organic Fertilizers

Specific Crop(s) Grown During Reporting Period

Report information for each specific crop grown on the ranch during the reporting period. Select specific crop(s) from the dropdown menu. A list of crops is included at the end of these instructions. Note: if the crop/s you are reporting on are not listed, select "Other" and enter the specific crop name in the text box that pops up.

Strawberry Crops

Strawberry growers now have the option to select from a list of multiple strawberry options for varieties with different lengths of time in the ground, or other special cropping programs.

Cover Crops

Cover crops should be selected in the "Specific Crops Grown During Reporting Period" dropdown menu, and the cover crop acreage should be provided. Select the irrigated or non-irrigated option of the specific cover crop grown on the ranch during the reporting period. Report the nitrogen applied in fertilizers to the cover crop if any application(s) was made. The selection of "Cover Crop, R_{SCAVENGE}" in the dropdown menu is included for the future Irrigation and Nutrient Management Plan Summary Report. If selected in the TNA form, the crop will be considered a cover crop.

Specific Crops

Information for a specific crop can also be reported separately (more than one row) if the amounts of water or fertilizer inputs differ greatly, especially if the specific crop is grown during different seasons. For example, water and fertilizer inputs might be different for lettuce crops grown and harvested in the winter versus the summer. In this case, report information for lettuce crops on two reporting rows.

Different specific crops can be aggregated and reported on one row only if these crops were intermingled with individual plants of different specific crops growing next to each other, on the same field, at the same time, and received the same amount of water and fertilizer.

Bell pepper growers can indicate single-harvest or multiple-harvest. And lastly, broccoli, cauliflower, and lettuce growers can report different crop seasons, such as winter or summer options. See examples below to determine under what circumstances a specific crop can be reported as mixed greens or spring mix.

- Mix of crops planted together: A mix of different specific crops grown together such as radicchio, escarole, and arugula, that are intermingled in the same row and receive the same amount of water and fertilizer can be reported on a single line as "spring mix" or "mixed greens".



- Mix of lettuces planted together: Different varieties of lettuce grown together, such as red-leaf lettuce, green-leaf lettuce, and butter lettuce, that are intermingled on same row and/or field and receive the same amount of water and fertilizer can be reported on a single line as "lettuce, leaf".



- Mix of crops planted separately: Alternating rows of different crops, such as radicchio, arugula, escarole, and lettuce, that are grown on the same field but not the same row must be reported on separate lines.
- Mixed of lettuces planted separately: If the rows have different varieties of the same type of crop, such as red-leaf lettuce, green-leaf lettuce, butter-head lettuce, etc., they can be reported as "lettuce, leaf" as one crop in the TNA form.



Crops with Multiple Cuttings

Short-term and intermediate-term crops. Crops such as spinach, kale, and spring mix can be reported as crops with multiple cuttings. If the crop is of short or intermediate term, meaning it is grown for less than 24 months, it must be reported as one crop even if it is harvested multiple times. In other words, multiple cuttings don't mean multiple crops.



Crops with Annual Harvests

Long-term crops. Avocados, grapes, lemon crops are long-term crops, meaning they are grown for more than 24 months. They do not produce fruits (yield) and therefore are not harvested for first few months (or years) after planting. During this period of time, select the not annual harvest option from the Crop Duration dropdown menu.

Crops with Selective Harvesting Crops such as flowers and herbs may be selectively harvested, meaning portions of the plant/crop are selectively harvested and remaining green material (green tissues and leaves) continues growing. This is similar to harvesting avocados, lemons, other tree fruits, and other perennials crops. In this case, harvesting does not necessarily represent a new crop. The crop duration of flower and herb crops (short-term, intermediate-term, or long-term) must be selected based on length of time the plant/crop green material is in the ground until final harvest (or sold/shipped). Information about reporting intermediate-term or long-term crops is provided in the “How to Report Crop Information” section, above.

Bulbed Crops

Crops such as flowers and herbs are completely harvested when there is no green material left. This applies specifically to bulb crops that regrow throughout the year(s). Every time the crop is harvested to the point where all green material is removed, it should be considered a new crop. In this case, every new crop must be reported under the corresponding year when it's harvested. For every new crop report the crop duration and nitrogen applied as it's explained in the “How to Report Crop Information” section, above.

Total Crop Acres

Report the crop-acres in each row for each specific crop reported. If a specific crop is grown more than one time during the annual reporting period, and the specific crop is on one line, then crop acres equals the sum of acres planted each time (each rotation).

Example: If on the same ranch, a grower has a crop of head lettuce on 10 acres, then a crop of broccoli on 10 acres, and then a crop of head lettuce on 10 acres, they would report 20 acres head lettuce (10+10=20) and 10 acres broccoli. Therefore, each individual crop's "Total Crop Acres" can be equal to,, more than, or less than the physical ranch acres.

Note: If the grower chooses to report their crops seasonally (such as reporting “Lettuce (Spring/Summer)” and “Lettuce (Fall/Winter)” on separate rows), then the crop-acres reported for each crop should correspond to the acres grown and harvested for that crop only. In the example above, the grower would report 10 acres of “Lettuce, Head (Fall/Winter)” and, on another line, 10 acres of “Lettuce, Head (Spring/Summer)”.

Nitrogen Present in the Soil (pounds/crop-acre)

Report the nitrogen present in the soil in pounds per crop-acre (lbs./crop-ac). Nitrogen present in the soil must be reported for at least one crop. This information must be reported as the total pounds of soil nitrogen present per acre where the crop was grown. The content of nitrogen in the soil must be measured at least once per annual reporting period for the ranch. The goal is to measure the content of nitrogen present in the soil that is available for subsequent crop uptake.

- a. To meet the requirement to report total nitrogen present in the soil, either take a soil sample for laboratory analysis, use a nitrate quick test, or use an alternative method to evaluate nitrogen content in soil, prior to planting, prior to seeding in the field, prior to pre-side dressing, or when appropriate to determine nitrogen available in the soil for the following crop.
- b. If a ranch has many small blocks then blocks can be grouped into a large management unit to comply with the soil measurement requirement.
- c. The method chosen to measure nitrogen content, the forms of nitrogen to measure (nitrate, urea, ammonia, all) and the effective rooting depth, should be decided when samples are taken. Unit conversions also apply, nitrogen in parts per million (ppm) in the effective root-zone must be converted to pounds of nitrogen per crop-acre.
- d. Reporting of available soil nitrogen content depends on the approach used to collect the samples. If multiple soil samples are collected from different parts of the ranch, and then mixed into one composite sample to measure available nitrogen in the soil for the whole ranch, resulting in only one result from the lab, then report the soil nitrogen content on the line for each crop reported, as applicable. If multiple soil samples are collected to determine nitrogen availability by specific crop(s), field(s), or soil type(s), then report the average soil nitrogen content on the line for each crop reported, as applicable.
- e. The proper timing to measure soil nitrogen content in the soil depends on the crop growing cycles and fertilizer management. Measure nitrogen content in the soil when soil nitrogen content is high and must be accounted for as a source of crop nitrogen and prior to or when crop fertilizer application decisions are made. It is incorrect to measure nitrogen in the soil after the rainy season, when values are low, or at a time when no fertilizer application decisions are made. In the Salinas Valley, with multiple crop rotations, the appropriate time is between the first and second crops or in the spring. For strawberry crops, the appropriate measurement may be prior to slow-release fertilizer applications. Consult with a local crop advisor to determine the appropriate time to measure soil nitrogen content.
- f. Soil nitrogen content should not be reported for crops if the nitrogen present in the soil was not measured prior to planting. For these crops, the "Nitrogen Present in the Soil" column on the report should be left blank.

Note: Growers must maintain records of the amount(s) of nitrogen content in the soil, the date(s) of measurement, and justification for the timing of the measurements in the Irrigation and Nutrient Management Plan section of the Farm Water Quality Control Plan (Farm Plan).

Nitrogen Applied in Conventional Fertilizers (pounds/crop-acre)
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Report the total nitrogen applied in conventional fertilizers to each specific crop grown during the reporting period in pounds per crop-acre (lbs./crop-ac). Nitrogen applied in compost, amendments, manure, and all other materials containing nitrogen must be reported in "Section III: Nitrogen Applied with Compost and Other Materials."

In the case of multiple crop rotations of the same specific crop, the total nitrogen applied (pounds/crop-acre) in conventional fertilizers is the average applied to all rotations and to all acres.

Refer to the example below to correctly calculate the average amount of nitrogen applied.

Example: A grower has a first crop of head lettuce on 10 acres and applies conventional fertilizer nitrogen at 200 pounds/crop-acre, a second crop of head lettuce on 50 acres and applies conventional fertilizer nitrogen at 400 pounds/crop-acre, and a third crop of head lettuce on 100 acres and applies conventional fertilizer nitrogen at 300 pounds/crop-acre. The total nitrogen applied to all acres is calculated as follows.

Calculate total crop-acres: $10+50+100 = 160$ crop-acres

Calculate total pounds of nitrogen applied: $(10 \text{ crop-acres} \times 200 \text{ pounds/crop-acre}) + (50 \text{ crop-acres} \times 400 \text{ pounds/crop-acre}) + (100 \text{ crop-acres} \times 300 \text{ pounds/crop-acre}) = (2,000 + 20,000 + 30,000 = 52,000)$, 52,000 pounds of nitrogen.

To calculate total pounds of nitrogen applied per crop acre: $(52,000 \text{ total pounds of nitrogen} / 160 \text{ total crop acres} = 325 \text{ pounds/crop-acre})$. The final number to report in the "Nitrogen Applied in Conventional Fertilizers (lbs./crop-ac)" column for head lettuce is 325 pounds/crop-acre.

For long-term crops, report the total amount of nitrogen applied during the 12-month reporting period.

To calculate the amount of nitrogen applied with conventional fertilizers, convert the fertilizer N-P-K % to pounds of nitrogen by multiplying the percent nitrogen content in the fertilizer product by the total amount of fertilizer applied per acre. Report the nitrogen applied with fertilizers containing urea, ammonia, ammonium, nitrate, and all other nitrogen containing materials. Liquid fertilizers and other materials applied through the irrigation as fertigation must be reported in this section.

Nitrogen Applied in Organic Fertilizers (pounds/crop-acre)

Report the total nitrogen applied in organic fertilizers to each specific crop grown and harvested during the reporting period in pounds of nitrogen per crop-acre (lbs./crop-ac).. For more information on reporting specific crop types, refer to instructions provided in section, "How to Report Crop Information", above.

If crops receive both nitrogen applied in conventional fertilizers and nitrogen applied in organic fertilizers, the total pounds of nitrogen applied per crop-acre must be distinguished

and reported in respective columns. For multiple crop rotations of the same specific crop reported on one crop row, report the average nitrogen applied in organic fertilizers in pounds/crop-acre to all rotations and acres. Refer to the example below to correctly calculate and report the average application of nitrogen applied in conventional and organic fertilizers.

*Example: A grower has a crop of head lettuce on 10 acres and applies conventional fertilizer nitrogen at 200 pounds/crop-acre, a crop of head lettuce on 50 acres and applies conventional fertilizer nitrogen at 400 pounds/crop-acre, and another crop of head lettuce on 100 acres and applies **organic** fertilizer nitrogen at 300 pounds/crop-acre in addition to **conventional** fertilizer nitrogen at 100 pounds/crop-acre. The total nitrogen applied on all acres is calculated as follows:*

Calculate total crop-acres: $10+50+100 = 160$ crop-acres

*Calculate total pounds of nitrogen applied in **conventional** fertilizers: $(10 \text{ crop-acres} \times 200 \text{ pounds/crop-acre}) + (50 \text{ crop-acres} \times 400 \text{ pounds/crop-acre}) + (100 \text{ crop-acres} \times 100 \text{ pounds/crop-acre}) = (2,000 + 20,000 + 10,000) = 32,000$ pounds of nitrogen*

*Calculate pounds of nitrogen applied in **conventional** fertilizers per crop acre: $32,000 \text{ pounds of nitrogen} / 160 \text{ acres} = 200$ pounds of nitrogen per crop acre. The final number to report in the "Nitrogen Applied in Conventional Fertilizers (lbs./crop-ac)" column for head lettuce is 200 pounds/crop-acre.*

*Calculate total pounds of nitrogen applied in **organic** fertilizers: $100 \text{ crop-acres} \times 300 \text{ pounds/crop-acre} = 30,000$ pounds of nitrogen from organic fertilizers.*

*Calculate total pounds of nitrogen applied in **organic** fertilizers per crop acre: $30,000 \text{ pounds of nitrogen} / 160 \text{ acres} = 187.5$ pounds nitrogen from organic fertilizers/crop acre. The final number to report in the "Nitrogen Applied in Organic Fertilizers (lbs./crop-ac)" column for head lettuce is 187.5 pounds/crop acre.*

C: N Ratio of Organic Fertilizer

The carbon-to-nitrogen ratio (C:N ratio), is a ratio of the mass of carbon to the mass of nitrogen in a substance. Please note that the C:N ratio is not a required field. However, to receive a discount for nitrogen applied in organic fertilizers the C:N ratio must be reported in this section.

When a ranch begins submitting the Irrigation and Nutrient Management Plan Summary Report it will receive a discount for organic fertilizers reported in this section that include the C:N ratio and qualify to receive a discount. However, the C:N Ratio cell must be left blank if the organic fertilizer reported do not qualify to receive a discount. Products that do not have organic compounds (long chain carbon compounds), do not depend on microbial mineralization to release N to mineral form, do not have available C:N info, are slow-release fertilizers, or organic liquid fertilizers that are in the liquid and/or emulsified form (excluding organic foliar applications) do not qualify to receive a discount.

Growers must contact the manufacturer of the organic fertilizer they apply to obtain fertilizer C:N ratio information.

Certified Organic / Conventionally Grown

Specify if the crop was certified organic or conventionally grown.

Crop Duration

Report the crop term duration: short-term, intermediate-term or long-term. In addition, report if the intermediate-term or long-term crops were harvested during the reporting period, as follows:

- S- Short-term Crop (< 12 months long)
- L-NFAH, Long-term Crop (> 24 months long), Not Final or Annual Harvest
- L-FAH, Long-term Crop (> 24 months long), Final or Annual Harvest
- I-NFH, Intermediate-term Crop (12 to 24 months long), Not Final Harvest
- I-FH, Intermediate-term Crop (12 to 24 months long), Final Harvest

A Short-term Crop should be reported in the reporting year when it is harvested. For example, if a lettuce crop is planted in December 2020 but harvested in February of 2021, that lettuce crop must be included in the year 2021 TNA Report, submitted by March 1, 2022. The TNA Report must include all nitrogen applied during the entire crop cycle from December 2020 until harvest in 2021.

An Intermediate-term Crop should be reported each reporting year when it is harvested. Select the "I-FH" option if it was the final harvest or the "I-NFH" option if it was not the final harvest.

A Long-term Crop should be reported each reporting year. Select the "L-FAH" option if it was harvested or the "L-NFAH" option if it was not harvested.

Additional information

Report any additional information corresponding to the specific crop reported in "Section IV: Nitrogen Applied with Conventional and/or Organic Fertilizers."

Nursery, greenhouses, and hydroponic operations will need to select the option that best describes how crops were grown. Additional options for propagation crops (grown for transplant) and crops grown under hoop houses are also available.

Select "R" if the crop is grown as part of a research trial or study and "not to maximize yields" or "not for human consumption."

Select "NY (no yield)" or "LY (low yield)" if applications of nitrogen were made to a crop, but all or a portion of the crop was lost, such as if the crop was "disked in" due to pests, disease, etc.

Note: All crops must be reported even if they have not been harvested, or otherwise, been killed, disked in, left on field, or, in other words, terminated but not harvested, during the reporting period.

Errors in Section IV

Crop reporting must start at Crop Row # 1. All crop reporting must include acreage, nitrogen present in soil for at least one crop, nitrogen in fertilizers and farming methods.

Specific crop is a required field. At least one crop must be reported unless all acres were fallowed during the entire reporting period.

Nitrogen present in soil is a required field. Report the nitrogen content in the soil for at least one crop, this must be reported on Crop Row # 1.

Nitrogen applied in conventional fertilizers is a required field for all crops reported. If no applications were made, please report "0", zero.

Crop Duration is a required field. Select the option that describes the duration of each crop.

Certified organic or conventionally grown is a required field for all crops reported.

Section V: Basis for Amount of Total Nitrogen Applied

The basis for nitrogen applied is a required field for all TNA Reports. At least one option must be selected. Select all the boxes that apply to identify the basis for total nitrogen applied. Report the informational source used to know the amount of nitrogen taken up and/or needed by each crop to grow and produce a desired yield, and to guide fertilizer application decisions.

Section VI: Explanations and Comments

Provide a brief explanation in this section if the information reported does not represent the entire 12-month reporting period, reporting acreage is different than the ranch acreage (e.g., due to fallow acres), any section in the report is incomplete, an APN(s) is deselected (provide an explanation for why total nitrogen applied is not being reported for the APN), or additional comments and explanations are needed to assist with evaluating the TNA Report.

Section VII: Certification

This report must be reviewed and certified by the list Operator/Responsible Party on the Operation enrollment form (eNOI) in GeoTracker.

Water Code Section 13267

Review the declaration stating that, to the best of your knowledge and belief, under penalty of perjury, the information provided is true, accurate, and complete.

Click on Save & Submit

By clicking on this button, you declare that you have read, understand, and accept the terms described in the Water Code Section 13267.

Questions About the TNA Report

Please contact Irrigated Lands Program Staff:

By Email: AqNOI@waterboards.ca.gov

By Phone: (805) 549-3148

By Mail: Irrigated Lands Program
Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

Calculations and Conversions

Calculate the Pounds of Nitrogen applied with the Irrigation Water

Multiply the nitrogen concentration of irrigation water by the total volume of water used (in acre-feet from above calculation) and the appropriate conversion factor:

Nitrate concentration in water x Total volume water applied x Conversion factor.

The conversion factor to use depends on the units the lab used to report nitrate concentration. They typically use either Nitrate-Nitrogen (NO₃-N) or Nitrate-Nitrate (NO₃-NO₃).

For nitrate-nitrogen (NO₃-N) use the following formula:

$$\text{Lbs. N applied per ranch-acre} = \text{NO}_3\text{-N concentration} \times \text{ac-ft. water used per ranch-acre} \times 2.72$$

For nitrate-nitrate (NO₃-NO₃) use this formula:

$$\text{Lbs. N applied per ranch-acre} = \text{NO}_3\text{-NO}_3 \text{ concentration} \times \text{ac-ft. water used per ranch-acre} \times 0.62$$

Example (Continued from above example):

Total volume of water = 1.41 acre-feet per ranch-acre

Average nitrate concentration = 20 mg/L as NO₃

Conversion factor = 0.62

1.41 acre-feet/ranch-acre X 20 mg/L X 0.62 = 17.5 pounds of nitrogen / ranch-acre

Conversion 1 – Fertilizer grade from Pounds of fertilizer applied to Pounds of Nitrogen Applied

Dry fertilizer and its active ingredients are expressed as weight per area. For example, 100 pounds of a 10-20-30 fertilizer-grade material contains 10 pounds of active ingredients nitrogen (N), 20 pounds of phosphorus (P₂O₅), and 30 pounds potassium (K₂O), equaling 60 pounds total of active ingredients, while the remaining 40 pounds consist of inactive materials.

Example:

50 Pounds of fertilizer applied per acre

Fertilizer grade = 10-20-30

Percent nitrogen content in fertilizer = 10/100 = 10% = 0.1

50 pounds fertilizer X 0.1 nitrogen = 5 pounds of nitrogen applied per acre

Liquid fertilizer active ingredients are expressed on a volume basis. Typically, the net volume and net weight of a liquid fertilizer are available on the label. The liquid density can be calculated based on these values (divide the weight by the volume) and used to determine pounds of nitrogen. For a few examples visit the website on "[How to Convert](#)

[Liquid Fertilizer into Dry Fertilizer in Fertigation for Commercial Vegetable and Fruit Crop Production](#)".

Conversion 2 – Converting Between Nitrate as Nitrate (Nitrate-NO3) and Nitrate as Nitrogen(Nitrate-N)

To convert Nitrate-NO3 (mg/L) to Nitrate-N (mg/L):

$$\text{Nitrate-NO3 (mg/L)} \times 0.2259 = \text{Nitrate-N (mg/L)}$$

For example, to convert 45 mg/L NO3-NO3 to NO3-N: $0.2259 \times 45 \text{ mg/L NO3-NO3} = 10.2 \text{ mg/L NO3-N}$

To convert Nitrate-N (mg/L) to Nitrate-NO3 (mg/L):

$$\text{Nitrate-NO3 (mg/L)} = 4.4268 \times \text{Nitrate-N (mg/L)}$$

For example, to convert 10 mg/L NO3-N to NO3-NO3: $4.4268 \times 10 \text{ mg/L NO3-N} = 44.3 \text{ mg/L NO3-NO3}$

Note: Laboratories might provide the nitrogen concentration in the irrigation water as Nitrate + Nitrite as Nitrogen (NO3NO2-N). In this case, apply the conversions for concentrations expressed as NO3-N (Nitrate as Nitrogen) apply.

Conversion 3 - Soil analysis conversion from Soil Nitrogen content in parts per million (ppm) to Soil Nitrogen content in pounds per crop-acre (lbs./crop-ac)

N (lbs./acre) =

$$\text{Nitrate-N (NO3-N) concentration (ppm)} \times 2 \times \text{soil sample thickness (inches)} \div 6 \text{ in.}$$

Note: Assuming 2 million pounds of dry soil in upper 6 inches/acre

Example:

Soil depth nitrate concentration (express as N) between 0 - 6 inches, is 8 ppm and between 6 - 24 inches, is 4 ppm

Then:

Pounds of nitrogen in 0 - 6-inches soil depth:

$$8 \text{ ppm} \times 2 \times 6 \text{ inches} \div 6 \text{ inches} = 16 \text{ pounds nitrogen/crop-acre}$$

Pounds nitrogen in 6 - 24-inches soil depth:

$$4 \text{ ppm} \times 2 \times 18 \text{ inches} \div 6 \text{ inches} = 24 \text{ pounds nitrogen/crop-acre}$$

Pounds nitrogen in 6 - 24-inches profile:

$$16 \text{ pounds} + 24 \text{ pounds} = \text{The total is 40 pounds of nitrogen/crop-acre}$$