

# TOTAL NITROGEN APPLIED REPORT INSTRUCTIONS

June 8, 2017

## GENERAL INFORMATION ABOUT TOTAL NITROGEN APPLIED REQUIREMENT

**REPORTING PERIOD:** The reporting period is from January 1<sup>st</sup> to December 31<sup>st</sup> of each year.

**TNA:** means Total Nitrogen Applied.

**TNA REPORTING DEADLINE:** TNA Reports must be received by March 1<sup>st</sup> of each year, or within 60-days after terminating a ranch.

### Records Required to Report TNA:

1. 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, slow release products, compost, compost teas, manure, and extracts;
2. Average nitrogen concentration in irrigation water applied during the annual reporting period, and the calculated or estimated nitrogen load in lbs/ranch-acre from irrigation water;
3. The total nitrogen present in the soil (lbs/crop-acre) that is available for crop uptake. The total nitrogen present in the soil must be measured at least once per annual reporting period, for each ranch.

### How to Report Crop Information:

- A. For short-term crops grown for less than 12 months and harvested during the reporting period (January 1<sup>st</sup> to December 31<sup>st</sup>), report the TNA to the entire crop throughout its growing cycle by the March 1<sup>st</sup> dateline.
  - B. For intermediate-term crops, whose growing season lasts more than 12 but less than 24 months, such as strawberries and bell peppers, and:
    - i. Were harvested during the reporting period, select the specific crop from the dropdown menu and report the TNA to the entire crop throughout its growing cycle by the March 1<sup>st</sup> dateline.
    - ii. Were NOT harvested during the reporting period, but will be harvested by the time the Total Nitrogen Applied report will be submitted (i.e., harvested between December 31<sup>st</sup> and March 1<sup>st</sup>), select the specific crop from the dropdown menu and report the TNA to the entire crop throughout its growing cycle by the March 1<sup>st</sup> dateline. Contact staff for other options.
    - iii. Were NOT harvested during the reporting period and will NOT be harvested by the time the Total Nitrogen Applied report will be submitted (March 1<sup>st</sup>), select "Crop, Not Final Harvest" from the specific crop dropdown menu. This indicates that the crop is still in the ground and will be finally harvested after the current March 1<sup>st</sup> reporting dateline. In this first submittal report the amount of nitrogen applied to the crop from the beginning of its growing cycle until December 31<sup>st</sup>. Resubmit the completed form after the crop is finally harvested (kill-date), and provide the nitrogen applied to the crop from fertilizers and other materials throughout its entire growing cycle. If possible, update the calculation for the nitrogen applied through irrigation water to include the nitrogen applied from the total amount of irrigation water applied to the crop throughout its entire growing cycle.
  - C. For crops that are long-term and grown for more than 24 months, such as blueberries, report the total nitrogen applied during the reporting period of January 1<sup>st</sup> to December 31<sup>st</sup> on an annual basis by March 1<sup>st</sup>.
- 1: For crops that are considered baby crops, such as baby lettuce, select the "crop, baby" option (e.g. Lettuce, Baby) in the specific crop dropdown menu.

- 2: Contact Water Board staff immediately (AgNOI@waterboards.ca.gov) if:
- Crops grown are NOT listed in the specific crop drop down menu
  - Crops grown for an intermediate-length of time that do not have the “Not Final Harvest” option.

**WARNING MESSAGES THAT APPEAR WHEN THE FORM IS SAVED**

The electronic form has embedded error and warning messages that will be displayed when the form is saved to alert the user if there are problems with the information reported in the form. Please make sure you read them completely and correct the problems, otherwise you will be contacted by Water Board staff. The following errors and warning messages may appear:

- Cells will be shown with RED OUTLINES if: Not all required fields have been completed and/or one or more values have been entered in an incorrect format.
- Error in Section I: the cell below the fallow acres will show a RED BACKGROUND if the Sum of all the Crop Acres plus the Fallow Acres is less than the Physical Ranch Acres Reporting. *If you receive this error, double-check to ensure that you are reporting all the crop acres grown and harvested during the reporting period and any/all acres that were fallow throughout the entire reporting period. If any acres of the ranch were fallow throughout the entire reporting period, enter them as Fallow Acres.*
- Error in Section II-E: the cell in section II-E will show a RED BACKGROUND if the estimated acre-feet of water applied per crop acre is outside a typical application values (low or high). Double-check the values entered in Sections I, II, and IV. *If you receive this error, the most common problem in an incorrect estimation of the total volume of irrigation water applied.*

**Additional Features in Form**

The form has buttons located at the top right of the first and second pages that allow information in particular sections or in the entire form to be quickly cleared to assist with growers who are reporting Total Nitrogen Applied for multiple ranches.

Reporting Period	<p>The reporting period goes from January 1<sup>st</sup> until December 31<sup>st</sup>, unless directed otherwise. Growers may modify the 12 months reporting period only under special circumstances, such as if the operator has not been farming the ranch during the entire 12-month reporting period. Therefore, if the reporting period is modified, please provide detailed information explaining the reason/s why the change was necessary in the Explanations &amp; Comments section on page 2 of the form. Water Board staff will review the explanation provided and contact you. The lack of records or required information will not be accepted as a justification to modify the reporting period.</p> <p>Note: if the reporting period is modified, both the average nitrate concentration of the irrigation water and the nitrogen applied with irrigation water (as well as the estimated volume) must correspond to the months that are now modified as part of the new reporting period.</p>
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**SECTION I: GENERAL RANCH INFORMATION**

AW#	Provide the AW identification number that is assigned to your operation.
Ranch Global ID	Provide the ranch global identification number that is assigned to the ranch. The ranch global ID can be found on the upper right corner of the specific ranch eNOI in GeoTracker. Example, Global ID: AGL020013962.

Ranch Name	Provide the specific ranch name, as identified in GeoTracker, for which you are reporting total nitrogen applied.															
Physical Ranch Acres Reporting	<p>Report the total acreage for which you are reporting total nitrogen applied. The reporting acreage should include all farmed acres, plus any fallowed acres if not all acres were under crop production. Report the fallowed acres as part of the Physical Ranch Acres Reporting box and separately in the corresponding Fallow Acres box. If part of the acreage was under cover crops, the reporting acreage must include the acres with cover crops, even if no nitrogen applications were made to the cover crops.</p> <p>Note: Growers have the option to submit multiple TNA reports for the same ranch if 1) the sum of the physical ranch acres reporting on all forms submitted for the ranch equals the total physical acres required to report, and 2) each report includes all crops, irrigation water, and nitrogen applications made to the physical ranch acres of that corresponding report (i.e., it is a complete TNA report for that portion of the ranch).</p>															
Fallow Acres	If any acreage in the ranch was fallow throughout the entire reporting period, report the number of fallow acres.															
County	Select the county or counties where the physical ranch-acres reporting are located. Note: If acreages are located in more than one county, report all other counties and APNs on the second page of the form.															
APN(s) Assessor Parcel Numbers	<p>Report all assessor parcel numbers (APNs) where the physical ranch acres reporting are located.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. Additional APN boxes are located on the second page of the form,</li> <li>2. If 20 or more APNs are reported, include a list of all APNs when emailing the Total Nitrogen Applied form to Water Board staff,</li> <li>3. Enter all the digits of one entire APN in each of the boxes provided,</li> <li>4. APN numbers are formatted by the specific counties. Make sure you are reporting the APNs correctly for your county/counties as follows:</li> </ol> <table border="1" data-bbox="483 1192 1474 1514"> <tr> <td>Ventura</td> <td>XXX-X-XXX-XXX</td> <td>10 digits</td> </tr> <tr> <td>Santa Barbara San Luis Obispo San Mateo</td> <td>XXX-XXX-XXX</td> <td>9 digits</td> </tr> <tr> <td>Monterey San Benito</td> <td>XXX-XXX-XXX or XXX-XXX-XXX-000</td> <td>9 or 12 digits</td> </tr> <tr> <td>Santa Cruz</td> <td>XXX-XXX-XX</td> <td>8 digits</td> </tr> <tr> <td>Santa Clara</td> <td>XXX-XX-XXX</td> <td>8 digits</td> </tr> </table>	Ventura	XXX-X-XXX-XXX	10 digits	Santa Barbara San Luis Obispo San Mateo	XXX-XXX-XXX	9 digits	Monterey San Benito	XXX-XXX-XXX or XXX-XXX-XXX-000	9 or 12 digits	Santa Cruz	XXX-XXX-XX	8 digits	Santa Clara	XXX-XX-XXX	8 digits
Ventura	XXX-X-XXX-XXX	10 digits														
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Santa Cruz	XXX-XXX-XX	8 digits														
Santa Clara	XXX-XX-XXX	8 digits														
If the ranch is a greenhouse, nursery, or hydroponic, select from the drop down menu	Select one of the options that best describes how the irrigation water is managed, collected, and drained out of the ranch. For example, if the greenhouse operation has a reverse osmosis (RO) system installed which 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 <i>"All excess water is captured and recycled; the only waste is dry material, which is properly disposed of"</i> .															
Sum of Total Crop Acres	This dotted cell will automatically calculate the sum of the crop acres reported in section IV. This box is intended to be a "quick review" or "help cell" to make sure all the required acres were reported. The sum of the crop acres plus the fallow acres should equal or exceed the physical ranch acres reporting. If there are special															

	<p>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. The background of this cell will be red if the sum of the crop acres plus the fallow acres is less than the physical ranch acres reporting.</p>
<p><b>SECTION II: NITROGEN APPLIED WITH IRRIGATION WATER</b>  <i>(include all sources and applications, e.g. leaching, runoff, backflush, operational spills, etc.)</i></p>	
<p><b>SECTION II-A: Water Source(s)</b></p>	
<p>Select the option that includes <u>all sources of irrigation water</u> used during the reporting period. <i>Select the <u>first</u> option in the drop down menu unless purple pipe water is used for irrigation.</i></p>	<p>Report all sources of irrigation water applied to the ranch during the reporting period. If the ranch only received well water, select the first option that reads: "Only well, city, blue valve, or other non-purple pipe water".</p> <p>Report if the ranch has received irrigation water from any of the four (4) purple pipe delivered water projects listed here: 1) PVWMA: the Pajaro Valley Water Management Agency, Watsonville Area Water Recycling Project, 2) CSIP: the Monterey County Water Resources Agency, Castroville Seawater Intrusion Project/ Salinas Valley Reclamation Project, 3) HOLLISTER PROJECT: the Hollister Tertiary Treated Recycled Water, or 4) SCRWA: the Santa Clara Valley Water District and District and the South County Regional Wastewater Authority, Gilroy and Morgan Hill Recycled Water Project. Once the drop down menu selection is made, follow the instructions that appear below the selected option to guide you from Sections II-B to II-D.</p>
<p><b>SECTION II-B: Purple Pipe Water (Recycled)</b></p>	
<p><u>Estimated Total Volume of Purple Pipe Water Applied to Entire Reporting Acres During Reporting Period</u> (gallons)</p>	<p>Enter the total gallons applied from purple pipe water, to the entire acreage that received water from any project during the January 1<sup>st</sup> to December 31<sup>st</sup> reporting period (or throughout an approved modified reporting period, if applicable). This field is not required, but is used to auto-calculate the box in section II-D: "Nitrogen Applied with Irrigation Water." The value in this field can be erased after the Nitrogen Applied with Irrigation Water box is auto-calculated.</p> <p>Note 1: Growers should contact the corresponding agency (PVWMA, HOLLISTER, CSIP, or SCRWA) to verify the volume of purple pipe water applied.  Note 2: The Total Volume of purple pipe Irrigation Water Applied should include any water volume applied for leaching, runoff, backflush, operational spills, etc.  Note 3: rain water should not be included.</p>
<p>Average Concentration of Purple Pipe Water NO<sub>3</sub>-N (mg/L)</p>	<p>Water Board staff will coordinate with the corresponding agency/ies to automatically populate the values based on the corresponding purple pipe water (recycled) selected. For any purple pipe delivered water that is not listed in the drop-down menu, growers should contact their delivery agency to obtain the most accurate value of the total nitrogen concentration and volume of water applied from the purple pipe.</p> <p>Total Nitrogen concentration and the volume reported in Section II-B are used to calculate the Nitrogen Applied with Irrigation Water in Section II-D.</p> <p>The auto-populated values can be changed if a grower measured the total nitrogen concentration, or obtained their average total nitrogen value, for their purple pipe irrigation water that was delivered to their particular ranch.</p>
<p>Average Concentration of Purple Pipe Water Total Nitrogen (mg/L)</p>	
<p><b>SECTION II-C: Well/City water (or other non-purple pipe water)</b></p>	

<p>Average Nitrate Concentration in <u>Well/City Water</u> (mg/L)</p>	<p>Report the average nitrate concentration in the irrigation water used on this ranch. This number should include the amount of nitrate naturally dissolved in the irrigation water as it is pumped out of the ground, or delivered to your ranch by the city, blue valve pipe, irrigation district, water agency, etc. This number should <u>not</u> include liquid fertilizers applied during fertigation. To report the average nitrate concentration you must, at a minimum, obtain a laboratory analysis or utilize a portable measuring device that results in a discrete numeric result for nitrate concentration from the <u>primary source of irrigation water applied</u> to the ranch, during the reporting period.</p> <p>In the case that more than one well is used to irrigate, and their individual nitrate concentrations are known, operators must estimate the volume applied from each source of irrigation water to obtain the weighted average nitrate concentration from all sources and to calculate the nitrogen applied with irrigation water. To help calculate the weighted concentration averages, if multiple wells are in use, click on the blue link in the form to access a simple excel file developed to calculate the weighted average. The excel file may also be found on the ILRP website, <a href="http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources">http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources</a>, and is titled "<b>weighted_avg_water</b>".</p> <p>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, e.g. backup wells. Note 2: mg/L = ppm</p>
<p>Units of Nitrate Concentration (<i>select one</i>)</p>	<p>Select the proper units you are using to report the irrigation water nitrate concentration. Nitrate as Nitrate (commonly shown as NO<sub>3</sub> in laboratory reports) or Nitrate as Nitrogen (commonly shown as N, NO<sub>3</sub>-N, or NO<sub>3</sub>NO<sub>2</sub>N in laboratory reports).</p>
<p>Estimated Total <u>Volume of Well/City Water</u> Applied to Entire Reporting Acres During Reporting Period (<i>gallons</i>)</p>	<p>Enter the total gallons of water from wells (or other sources, excluding purple pipe water) applied to the entire reporting acreage during the typical reporting period of January 1<sup>st</sup> to December 31<sup>st</sup> (or throughout an approved modified reporting period, if applicable). This field is used to auto-calculate the next box titled "Nitrogen Applied with Irrigation Water." To convert the total volume applied to gallons, if calculated as acre-feet or acre-inches, click on the blue link in the form to access a simple excel file developed to convert acre-feet or acre-inches to total gallons applied. The excel file may also be found on the ILRP website, <a href="http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources">http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources</a>, and is titled "<b>convert_to_gallons</b>". The value in this field is not required to be submitted with the final report, and can be erased after the Nitrogen Applied with Irrigation Water box is auto-calculated.</p> <p><i>The Estimated Total Volume of Irrigation Water Applied should include any water applied for leaching, runoff, backflush, operational spills, etc. Note: rain water should never be included, and water from purple pipe should not be included in Section II-C.</i></p>
<p><b>SECTION II-D: Nitrogen applied</b></p>	
<p>Nitrogen Applied with <u>Irrigation Water</u> (water from all sources) (<i>lbs/ranch acre</i>)</p>	<p><u>Auto-calculation</u> For simplicity, use the form's built-in automatic calculation feature. The value in this cell will be automatically calculated by reporting the following information:</p> <ol style="list-style-type: none"> <li>1. If only water from a <u>Well/City Water</u> was used (no purple pipe water was used): provide a value for the Physical Ranch-Acres Reporting and Fallow Acres (Section I); and provide values for the irrigation water nitrate concentration,</li> </ol>

- units of concentration (nitrate as NO<sub>3</sub> or nitrate as NO<sub>3</sub>-N), and the total gallons of well/city water applied (Section II-C). Section II-D will auto-calculate.
2. If only purple pipe water was used: provide a value for the Physical Ranch-Acres Reporting and Fallow Acres (Section I); either provide or use the total nitrogen concentration, and provide a value for the total gallons of purple pipe water applied (Section II-B). Section II-D will auto-calculate.
  3. If purple pipe water was used and water from another source (such as a well) was also used: provide a value for the Physical Ranch-Acres Reporting and Fallow Acres (Section I); either provide or use the total nitrogen concentration, and provide a value for the total gallons of purple pipe water applied (Section II-B); provide values for the irrigation water nitrate concentration of the well/city (non-purple pipe) water, the units of concentration (nitrate as NO<sub>3</sub> or nitrate as NO<sub>3</sub>-N), and the total gallons of non-purple pipe irrigation water applied (Section II-C). Section II-D will auto-calculate and will sum the nitrogen applied with purple pipe water and the nitrogen applied with the water from the well/city.

Note: This value corresponds to the pounds of nitrogen applied to each ranch-acre (physical ranch-acre) that received irrigation water during the reporting period (that is, acres that were not fallow throughout the entire reporting period).

Manual Calculation

The instructions below apply only to those ranches where only well/city (non-purple pipe, recycled projects) water was applied.

Calculate and report the total nitrogen applied with irrigation water. The information must be reported as the total pounds of nitrogen applied to each acre of the ranch that received irrigation water during the reporting period. If any acres of the ranch were fallow for the entire reporting period, they should be excluded from this calculation. To report the amount of nitrogen applied with irrigation water (to all the crops grown on the ranch during the reporting period), the following information must be known:

1. The average nitrate concentration in the primary source of irrigation water, or the weighted average of nitrate concentration in the irrigation water applied, if more than one well is used for irrigation.
2. Total volume of irrigation water applied (to all the crops grown on the ranch, during the reporting period).

To calculate the total amount of nitrogen applied with irrigation water in lbs/ranch-acre (counting only irrigated acres, and excluding all acres that were fallow for the entire reporting period), in cases where more than one water source is used to irrigate crops in the ranch, the volume of water applied from each source should be accurately measured or estimated. The Nitrogen Applied with Irrigation Water can be manually calculated by following the steps outlined in the example described on pages 11 and 12.

If purple pipe water was used during the reporting period, for simplicity, it is recommended that the auto-calculation capabilities of the form be used rather than manual calculations. Growers may still choose to perform the calculations manually.

Note 1: The Total Nitrogen concentration must be used to calculate the Nitrogen Applied with irrigation water for all water from purple pipe.

**SECTION II-E: Volume check**

This dotted cell will automatically calculate the estimated average acre-feet of water applied to each crop-acre. This cell is intended to be a “quick review” or “help cell” to make sure the reported volumes correspond to the acre-feet of water applied to each crop acre. The background of this cell will be red if the estimated acre-feet of water applied to each crop-acre is not typical for crops grown in this region. If the cell indicates that the water applied to each crop acre is not typical, or if the value does not correspond with your estimated volume of water applied to your crops, review all information reported in Section I, II, and IV to make sure that the volume you are using in the form is correct.

**SECTION III: NITROGEN APPLIED WITH COMPOST AND AMENDMENTS (Not to a Specific Crop)**

Physical Acres Receiving <u>Compost &amp; Amendments</u>	Report the total number of ranch acres (physical-acres) where nitrogen applications from compost and amendments were made.
Nitrogen Applied In <u>Compost &amp; Amendments</u> (TOTAL lbs)	<p>Report in this section the total number of pounds of nitrogen applied from compost, amendments, and all other nitrogen containing materials (such as compost teas, humic acids, bacterial extracts, soil enhancers, but NOT including fertilizers, which must be reported in Section IV) if the applications were:</p> <ol style="list-style-type: none"> <li>1. Applied to improve the soil physical and/or chemical properties (increase organic matter, improve structure or moisture retention), and usually applied when there are no crops growing on the ground, or</li> <li>2. Intended for multiple crops, so the nitrogen would be distributed to many crops and the nitrogen is not already distributed among all the crops and reported in section IV.</li> </ol> <p>Note 1: Also report in this section all other applications of nitrogen that are not reported in section IV.          Note 2: In the case where multiple applications are made during the year, sum the applications and report the <u>total applied nitrogen in pounds</u>.          Note 3: Make sure the value reported from the compost and amendment applications is converted from pounds or tons of the gross material to pounds of nitrogen.          Example 1: if you apply 20 pounds of N to 10 physical ranch-acres, then 30 pounds of N to a different 5 physical ranch-acres of the ranch, and finally 30 more pounds of N to another 10 physical ranch-acres; report 80 pounds of N to a total of 25 ranch-acres.          Example 2: if you apply 20 pounds of N to 10 physical ranch-acres, then 30 pounds of N to those same 10 physical ranch-acres, and finally 30 more pounds to the same 10 physical ranch-acres; report 80 pounds of N to 10 ranch-acres.</p>

**SECTION IV: NITROGEN APPLIED WITH FERTILIZERS & OTHER MATERIALS AND NITROGEN PRESENT IN SOIL**

Specific Crop(s) Grown and Harvested During Reporting Period ( <u>Select from List</u> )	<p>Select specific crop/s from the form drop-down menu. A list of the crops is attached at the end of the instructions, and on page 3 of the form. Notes: a) See picture-examples below to determine under what circumstances a specific crop can be reported as mixed greens or spring mix, b) Review page 1 above, to determine how to report crop information.</p> <p>Report information for each specific crop grown on the ranch during the reporting period. Growers also have the option to report information for a specific crop separately (more than one line) if the amounts of water or fertilizer inputs differ, specifically in those cases where 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, the grower can report information for lettuce crops on two reporting lines.</p>
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	<p>Different specific crops can be aggregated and reported on one line only if: these crops were intermingled with individual plants of different specific crop growing next to each other in the same row on the same field at the same time, and receiving the same amount of water and fertilizer. For examples, refer to the pictures below.</p> <p>Growers with intermediate-term crops (grown longer than 12 months but less than 24 months) other than strawberries or bell peppers should contact Water Board staff to add their “Crop (Not Final Harvest)” selection to the specific crop dropdown menu.</p> <p>Crop options. 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 special programs. Spinach, kale, and spring mix growers can also report crops with multiple cuttings. 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.</p> <p>Note: Cover crops should be selected in the Specific Crops Grown dropdown menu, and the cover crop acreage should be provided.</p>
	<p>This example can be reported as “spring mix” or “mixed greens” if it represents a mix of different specific crops growing together such as radicchio, escarole, and arugula; are intermingled, grown on the same row and field; and at the same time and receiving the same amount of water and fertilizer.</p>
	<p>This is an example of different varieties of lettuce that are grown together, next to each other at the same time in the same row. This should be reported on a single line as “lettuce, leaf”.</p>
	<p>This is an example of alternating rows of different crops. If the crops are different varieties of the same specific crop, such as red-leaf lettuce, green-leaf lettuce, butter-head lettuce, etc., these can be aggregated together and reported as “lettuce, leaf” on one reporting line on the form.</p> <p>If the crops are different crops in the alternating rows, such as radicchio, arugula, escarole, lettuce, etc., each of these must be reported on a separate line on the form.</p>
<p>Total Crop Acres</p>	<p>Report the crop-acres in each row for each specific crop reported. If a specific crop is grown and harvested more than one time during the annual reporting period, and the specific crop is being reported in only one line on the form, then the total crop acres of that crop equals the sum of the acres planted of that crop each time (each rotation). Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres, a second crop with 10 acres of broccoli, and then a third crop with head lettuce on 10 acres, they would report 20 acres head lettuce and 10 acres broccoli. Therefore, each individual Total Crop Acres box on the form can be the same, more, or less than the total acreage of the entire ranch.</p>

	<p>Note: if the grower chooses to report their crops seasonally (such as reporting Lettuce (Spring/Summer) and Lettuce (Fall/Winter) on separate lines, then the crop-acre reported for each crop should correspond to the acres grown and harvested for that particular crop only. In the example above, the grower would report 10 acres of Lettuce, Head (Fall/Winter) and on another line would report 10 acres of Lettuce, Head (Spring/Summer).</p>
<p>Nitrogen Present in <u>Soil</u> (lbs/crop-acre)</p>	<p>Report the nitrogen present in the soil. This information must be reported as the total pounds of soil nitrogen present on each acre of the specific crop. 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 that is available in the soil for the subsequent crop uptake.</p> <ul style="list-style-type: none"> <li>• To meet the requirement to record total nitrogen in the soil, growers may either take a soil sample for laboratory analysis, use the nitrate quick test, or use an alternative method to evaluate nitrogen content in soil, prior to planting, prior to seeding the field, prior to pre-sidedressing, or when appropriate to determine nitrogen available in the soil for the following crop.</li> <li>• Report the content of available nitrogen present in the soil in lbs/acre. For the purpose of measuring nitrogen content in the soil, in those cases where many small blocks exist in the ranch, the grower has the option to group the blocks into a large management unit to comply with the soil measurement requirement.</li> <li>• 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 ppm (parts per million) in the effective root-zone must be converted to pounds of nitrogen per acre.</li> <li>• Reporting of available soil N content depends on the approach used to collect the samples. If multiple soil-samples are collected from different parts of the ranch, then are mixed into a composite sample to measure available N in the soil of the whole ranch, resulting in only one result from the lab, report this amount on the line corresponding to each crop where fertilizer applications will be modified based on N present in soil. If samples are gathered to determine nitrogen availability by specific crop(s), field(s), or soil type(s), report the average soil nitrogen content from the samples under the subsequent crop(s).</li> <li>• Some crops may not have a soil nitrogen content to be reported on this form because the nitrogen present in the soil was not measured prior to that particular crop. In these cases, the soil nitrogen content cell for that crop on the form should be left blank.</li> <li>• Growers must maintain information of the amount(s) of nitrogen content in the soil, the date(s) of measurement, along with a justification for the timing of the measurements in the Farm Plan.</li> <li>• Review the conversions on page 13.</li> </ul> <p>Note 1: The proper timing to measure the nitrogen content in the soil depends on the crop growing cycles and fertilizer management. Measure nitrogen content in the soil at the time of the year when soil nitrogen content is high and must be accounted for as a source of nitrogen for the following crop and prior to or at the time when the crop fertilizer application decisions are made. It would be 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 your local crop advisor to</p>

	<p>determine the appropriate time to measure soil nitrogen content in a particular situation.</p> <p>Note 2: This value corresponds to the pounds of nitrogen present on each acre of the crop (crop-acre).</p>
<p>Nitrogen Applied in Fertilizers and Other Materials (lbs/crop-acre)</p>	<p>Report the total nitrogen applied in fertilizers, amendments (if not reported in Section III above), and all other materials/products containing nitrogen, to each specific crop(s) harvested during the reporting period. This section includes organic fertilizer and composts, manures and any other N-containing organic materials that provide nitrogen to the specific crop if they were not reported in Section III. This information must be reported as the total pounds of nitrogen applied to a crop-acre of a specific crop grown on the ranch that was finally harvested (kill-date) during the reporting period (this applies to short term crops; see page 1 of this document for additional information on how to report intermediate and long-term crops).</p> <p>Note: in the case of multiple crop rotations of the same specific crop, the total nitrogen applied in pounds/crop-acre is the average applied on all the rotations and on all the acres. Refer to the example below for guidance on how to correctly calculate the average application. You can click on the blue link in the Section IV header on the form to access a simple excel file developed to calculate the value to report in the case of multiple plantings and harvests of a specific crop on different acres. The file can also be found at the ILRP website and it titled "<a href="http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources">N_from_fertilizers</a>", <a href="http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources">http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources</a></p> <p>Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres and applies nitrogen at 200 pounds/crop-acre, a second crop of lettuce on 50 acres and applies nitrogen at 400 pounds/crop-acre, and then a third crop of lettuce on 100 acres and applies nitrogen at 300 pounds/crop-acre, they would then calculate the total applied on all acres as follows: 200 pounds/crop-acre x 10 crop-acres + 400 pounds/crop-acre x 50 crop-acres + 300 pounds/crop-acre x 100 crop-acres = 2,000 + 20,000 + 30,000 pounds. Then divide this total by all the crop-acres (160 crop-acres). This is 52,000 pounds divided by 160 crop-acres. The final number to report is 325 pounds/crop-acre in the Nitrogen Applied in Fertilizers and Other Materials box in Section IV of the form.</p> <p>For long-term crops, report the total amount of nitrogen applied during the 12 months reporting period (Note: see the first page of these instructions, letter C under "How to Report Crop Information").</p> <p><u>To calculate the amount of N applied with fertilizers</u>, 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 nitrogen including urea, ammonia, ammonium, nitrate, and all other nitrogen containing materials/products. Liquid fertilizers and other materials applied through the irrigation as fertigation should be accounted for in this section.</p> <p>Note: This value corresponds to the pounds of nitrogen applied to each crop-acre.</p>
<p>O / C</p>	<p>Specify if the crop was certified organic (O) or conventionally (C) grown.</p>
<p>Additional information</p>	<p>Report any additional information corresponding to the specific crop reported in Section IV.</p>

	<p>Nursery, greenhouses and hydroponic operations will need to select the option that best describes how the crops were grown. Additional options for propagation crops (grown for transplant) and crops grown under hoop houses are also available.</p> <p>Select R if the crop is grown as part of a research trial or study and “not to maximize yields” and “not for human consumption.”</p> <p>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.</p> <p>Note: All crops must be reported/included if they have been harvested, killed, disked in, left on field, or, in other words, terminated, during the reporting period.</p>
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**ADDITIONAL CROPS AND COUNTIES - CONTINUED FROM SECTION I AND IV**

Specific Crop(s) Grown and Harvested During Reporting Period	Report all crops grown during the reporting period and all other required information.
County	Report all additional counties where the reported acres are located.
APN(s) Assessor Parcel Numbers	Report all additional APNs where the reported acres are located. Use APN format by county provided in Page 3.

**SECTION V: BASIS FOR THE AMOUNT OF TOTAL NITROGEN THAT WAS APPLIED**

Identify the basis for the amount of total nitrogen applied. Report the source of the information you used to guide you in your fertilizer application decisions. This type of information refers to the known values of the amount of nitrogen taken up and/ or needed by the crop(s) to grow and produce a desired yield.

Note: Cells in this section will remain red (incomplete), unless one is checked.

**SECTION VI: EXPLANATIONS AND COMMENTS**

Other comments/notes	Provide a brief explanation in this box if the information on this form does not represent the entire 12-month reporting period, if the reporting acreage is different than the ranch acreage (e.g., due to fallowed acres), if any other section in the form is incomplete, or if additional comments and explanations are needed to assist with the processing of the form.
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**SECTION VII: CERTIFICATION**

*This form must be reviewed and certified by the Operator/Responsible Party listed in the eNOI.*

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.
Indicate that you have read the terms	Check the box to indicate that you have read and accept the above terms.
Operator/Responsible Party and Preparer Information	Provide the name of the operator/responsible party and the preparer of the report, the preparer title, the preparer contact information, and the date prepared. The preparer and the operator/responsible party should be knowledgeable and understand the ranch specifics regarding the total nitrogen applied and present in the soil for the selected reporting period. Both the preparer and the operator/responsible party should be available to respond to questions from Water Board staff.

The operator/responsible party, as listed on the operation's eNOI, must review the report prior to submittal.

## CALCULATIONS AND CONVERSIONS

<p>Estimate volume of water applied per ranch-acre</p>	<p>Section-II of the form provides an auto-calculation to calculate the total nitrogen applied with irrigation water. In order to use the auto-calculation, you will need to first complete all of Section-I, then begin to complete Section-II working from left-to-right.</p> <p>Manual calculation: If you want to calculate the total nitrogen applied with irrigation water yourself and not use the auto-calculation feature, use the following instructions.</p> <p>First, you need to convert your estimated volume of water used from gallons to acre-feet, by doing the following: 1<sup>st</sup>. Estimate the total gallons applied to the entire acres that were irrigated during the reporting period (acres that were not fallow throughout the entire reporting period). 2<sup>nd</sup>. Calculate the acre-feet applied per ranch acre.</p> <p>Example (if volume is known in gallons): Ranch = 10 acres Gallons applied = 5,000,000</p> <p>-Convert gallons to acre-feet using the following formula: <u>Gallons applied</u> ÷ 325,851 Example use the numbers above: 5,000,000 ÷ 325,851 = 14.17 acre-feet of water applied to entire ranch</p> <p>-Now, divide total acre-feet (from above) by the ranch reporting acres (from Section-I of the form) 14.17 acre-feet on entire ranch ÷ 10 ranch-acres = 1.41 acre-feet per ranch-acre</p> <p>If volume is known as acre-feet per crop-acre: Use the Excel file found on the ILRP website, <a href="http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources">http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources</a>, and is titled "<b>convert_to_gallons</b>". This tool will allow you to convert from acre-feet of water applied per crop-acre grown to total gallons of water applied to all crops grown.</p>
<p>Calculate the Pounds of Nitrogen applied with the irrigation water (non-purple pipe water)</p>	<p>To determine pounds of nitrogen applied with the irrigation water (required in Section II of the form) you will need the nitrate concentration of your irrigation water and the total volume of water used (in acre-feet from above calculation). The basic formula is:</p> <p>= <u>Nitrate concentration in water</u> x <u>Total volume water applied</u> x <u>conversion factor</u></p> <p>The conversion factor to use depends on the units the lab used to report nitrate concentration. They typically use either Nitrate-Nitrogen (NO<sub>3</sub>-N) or Nitrate-Nitrate (NO<sub>3</sub>-NO<sub>3</sub>)</p> <p>For nitrate-nitrogen (NO<sub>3</sub>-N) use the following formula: Lbs N applied per ranch-acre = <u>NO<sub>3</sub>-N concentration</u> x <u>ac-ft. water used per ranch-acre</u> x <u>2.72</u></p> <p>For nitrate-nitrate (NO<sub>3</sub>-NO<sub>3</sub>) use this formula:</p>

	<p>Lbs N applied per ranch-acre = <u>NO<sub>3</sub>-NO<sub>3</sub> concentration</u> x <u>ac-ft. water used per ranch-acre</u> x <u>0.62</u></p> <p>Example, following from above:  Total volume of water = 1.41 acre-feet per ranch-acre  Average nitrate concentration = 20 mg/l as NO<sub>3</sub>  Conversion factor = 0.62</p> <p>Calculation: <u>1.41 acre-feet/ranch-acre</u> x <u>20 mg/l</u> x <u>0.62</u> = <u>17.5 lbs. N/ranch-acre</u></p> <p>Report the result in Section II-D of the form.</p>
<p>Conversion 1  Fertilizer grade from Pounds of fertilizer applied to Pounds of Nitrogen applied.</p>	<p><u>Dry fertilizer</u> and its active ingredients are expressed as a weight per area. For this type of fertilizer, the calculations are fairly straightforward. For example, 100 pounds of a 10-20-30 fertilizer-grade material contains 10 pounds of active ingredients nitrogen (N), 20 pounds of phosphorus (P<sub>2</sub>O<sub>5</sub>), and 30 pounds potassium (K<sub>2</sub>O), equaling 60 pounds total of active ingredients, while the remaining 40 pounds consist of inactive materials.</p> <p>Example:  Pounds of fertilizer applied per acre = 50 lbs.  (Fertilizer grade) = 10-20-30.  Percent Nitrogen content = 10/100 = 10% = 0.1  Lbs. of N applied = 50 lbs. fertilizer x 0.1 nitrogen = 5 Lbs. N</p> <p><u>Liquid fertilizer</u>. The density of the liquid fertilizer is a key detail because it is impossible to know the weight of a liquid fertilizer before the density is known. Typically, the net volume and net weight are available on the liquid fertilizer label. The liquid density can be calculated based on these values.  For a few more examples visit <a href="http://edis.ifas.ufl.edu/hs1200">http://edis.ifas.ufl.edu/hs1200</a></p>
<p>Conversion 2  Interconverting Nitrate as Nitrate (Nitrate-NO<sub>3</sub>) and Nitrate as Nitrogen (Nitrate-N)</p>	<p>To convert Nitrate-NO<sub>3</sub> (mg/L) to Nitrate-N (mg/L):  <u>Nitrate-NO<sub>3</sub> (mg/L) x 0.2259 = Nitrate-N (mg/L)</u></p> <p>For example, to convert 45 mg/L NO<sub>3</sub>-NO<sub>3</sub> to NO<sub>3</sub>-N:  <u>0.2259 x 45 mg/L NO<sub>3</sub>-NO<sub>3</sub> = 10.2 mg/L NO<sub>3</sub>-N</u></p> <p>And to convert Nitrate-N (mg/L) to Nitrate-NO<sub>3</sub> (mg/L):  Nitrate-NO<sub>3</sub> (mg/L) = 4.4268 x Nitrate-N (mg/L)</p> <p>For example, to convert 10 mg/L NO<sub>3</sub>-N to NO<sub>3</sub>-NO<sub>3</sub>:  <u>4.4268 x 10 mg/L NO<sub>3</sub>-N = 44.3 mg/L NO<sub>3</sub>-NO<sub>3</sub></u></p> <p>Note: Some laboratories might have provided the nitrogen concentration in the irrigation water as Nitrate + Nitrite as Nitrogen (NO<sub>3</sub>NO<sub>2</sub>-N). In these cases, the conversions that apply to the concentrations expressed as NO<sub>3</sub>-N (Nitrate as Nitrogen) apply.</p>
<p>Conversion 3  Soil analysis conversion from Soil Nitrogen content in parts per million (ppm) to Pounds of Nitrogen</p>	<p>N (lbs/acre) = Nitrate-N (NO<sub>3</sub>-N) concentration (ppm) x 2 x soil sample thickness (in.) ÷ 6 in.  (Assuming 2 million pounds of dry soil in upper 6 in/acre)</p> <p>Example:  Depth NO<sub>3</sub>-N (nitrate expressed as N) is  0 - 6 inch is 8 ppm  6 - 24 inch is 4 ppm</p>

present in soil per acre (lbs/acre).	<p>Then:</p> <p>Lbs N in 0 - 6 inch soil depth = <math>8 \text{ ppm} \times 2 \times 6 \text{ in} \div 6 \text{ in} = 16 \text{ lbs. N/acre}</math></p> <p>Lbs N in 6 - 24 inch soil depth = <math>4 \text{ ppm} \times 2 \times 18 \text{ in} \div 6 \text{ in} = 24 \text{ lbs. N/acre}</math></p> <p>Lbs N total in 0 - 24 inch profile = 16 lbs + 24 lbs = <b>40 lbs. N/acre</b></p> <p>For conversions that apply when using the Nitrate quick test to measure nitrogen content in the soil, review the supplemental sheets with calculations.</p>
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### LIST OF GREENHOUSE/NURSERY/HYDROPONIC DROPDOWN MENU OPTIONS (SECTION I)

- 1a - No recycling occurs; all excess water is captured and conveyed to a surface water ditch or stream
- 1b - No recycling occurs; all excess water infiltrates into the ground
- 1c - No recycling occurs; all excess water is captured and conveyed to a lined evaporation pond
- 1d - No recycling occurs; some excess water is captured and conveyed to a surface water ditch or stream and some infiltrates into the ground
- 1e - No recycling occurs; all excess water is captured and conveyed to a stormdrain, sewer, or city channel collection system
  
- 2a - All excess water is captured and recycled; brine/flush water is conveyed to a field or pond for percolation into the ground
- 2b - All excess water is captured and recycled; brine/flush water is conveyed to a lined evaporation pond
- 2c - All excess water is captured and recycled; brine/flush water is conveyed to a surface water ditch or stream
- 2d - All excess water is captured and recycled; some brine/flush water is conveyed to a surface water ditch or stream, and some is conveyed to a field or pond for percolation into the ground
- 2e - All excess water is captured and recycled; brine/flush water is conveyed to a stormdrain, sewer, or city channel collection system
- 2f - All excess water is captured and recycled; the only waste is dry material, which is properly disposed of
- 2g - All excess water is captured and recycled; brine/flush water is conveyed to a pond and used to irrigate other crops on the ranch
  
- 0 - Other, contact Water Board staff

### LIST OF ADDITIONAL INFORMATION DROPDOWN MENU SELECTIONS (SECTION IV)

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| <ul style="list-style-type: none"> <li>• N/A – None Apply</li> <li>• GC – Greenhouse in Container</li> <li>• GG – Greenhouse in Ground</li> <li>• NC – Nursery in Container</li> </ul> | <ul style="list-style-type: none"> <li>• NG – Nursery in Ground</li> <li>• HH – Hoop house</li> <li>• HY – Hydroponic</li> <li>• P – Propagation Crop</li> </ul> | <ul style="list-style-type: none"> <li>• R – Research, not for human consumption</li> <li>• LY – Low Yield</li> <li>• NY – No Yield</li> </ul> |
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**LIST OF SPECIFIC CROPS IN DROPDOWN MENU (SECTION IV) *Contact Water Board if your crop is not on this list***

Alfalfa	Chicory	Lettuce, Baby	Peas, Seed
Amaranth	Chile	Lettuce, Baby (Fall/Winter)	Peas, Snap or Sugar
Anise	Chinese Greens (A Choy)	Lettuce, Baby (Spring/Summer)	Peppers, Bell (Not Final Harvest)
Apples	Chinese Greens (Bok Choy)	Lettuce, Head	Peppers, Bell (Final Harvest; Multiple Harvest Variety)
Apricots	Chinese Greens (Bok Choy, Baby)	Lettuce, Head (Fall/Winter)	Peppers, Bell (Final Harvest; Single Harvest Variety)
Artichoke, Annual	Chinese Greens (Bun Choy)	Lettuce, Head (Spring/Summer)	Peppers, Chili
Artichoke, Perennial	Chinese Greens (Gai Choy)	Lettuce, Iceberg	Pimiento
Artichoke, Seed	Chinese Greens (Gai Lan)	Lettuce, Iceberg (Fall/Winter)	Pineapple
Arugula	Chinese Greens (On Choy)	Lettuce, Iceberg (Spring/Summer)	Pistachio
Arugula, Baby	Chinese Greens (Shanghai Bok Choy)	Lettuce, Leaf	Potato
Arugula, Wild	Chinese Greens (Snow Pea Tips)	Lettuce, Leaf (Fall/Winter)	Pumpkin
Asparagus	Chinese Greens (Tong Ho)	Lettuce, Leaf (Spring/Summer)	Radicchio
Beans	Chinese Greens (Yam Leaves)	Lettuce, Romaine	Radish
Beans, Dry	Chinese Greens (Yu Choy)	Lettuce, Romaine (Fall/Winter)	Rapini
Beans, Lima	Chives	Lettuce, Romaine (Spring/Summer)	Raspberry
Beans, Seed	Cilantro	Lettuce, Romaine Hearts	Rosemary
Beet	Cilantro, Bunch	Lettuce, Romaine Hearts (Fall/Winter)	Ryegrass, Winter
Blackberry	Collard Greens	Lettuce, Romaine Hearts (Spring/Summer)	Safflower
Blueberry	Corn	Lemon/Lime	Seed Crops
Bok Choy	Corn, Sweet	Mache	Shallots
Bok Choy, Baby	Cover Crop, Legume (Irrigated)	Malabar	Sorrel
Borage	Cover Crop, Legume (Non-Irrigated)	Mango	Spinach, Baby
Boysenberry	Cover Crop, Non-Legume (Irrigated)	Marjoram	Spinach, Baby (multiple cuttings)
Broccollette	Cover Crop, Non-Legume (Non-Irrigated)	Melon	Spinach, Bunch
Broccoli	Cress	Mint	Spinach, Bunch (multiple cuttings)
Broccoli (Fall/Winter)	Cucumber	Mixed Greens	Spinach, Clip
Broccoli (Spring/Summer)	Dandelion Greens	Mixed Greens, Baby	Spinach, Clip (multiple cuttings)
Broccoli, Seed	Daikon	Mizuna	Spring Mix
Broccoli Rabe	Dill	Mustard	Spring Mix (multiple cuttings)
Broccolini	Eggplant	Mustard, Baby	Spring Mix, Baby
Brussels Sprouts	Endive	Nectarine	Spring Mix, Baby (multiple cuttings)
Cabbage	Escarole	Nursery Perennials	Sprouts
Cabbage, Chinese	Fennel	Nursery Shrubs	Squash, Summer
Cabbage, Green	Flowers	Nursery Trees	Squash, Winter
Cabbage, Napa	Frisee	Oat Hay	Squash, Zucchini
Cabbage, Red	Garlic	Olive	Strawberry (Not Final Harvest)
Cabbage, Savoy	Grapefruit	Onions	Strawberry, Up to 12-months variety (Final Harvest)
Cantaloupe	Grapes, Table	Onions, Dry	Strawberry, Greater than 12-months variety (Final Harvest)
Carrots, Baby	Grapes, Wine	Onions, Green	Strawberry, 2nd year (Final Harvest)
Carrots, Full-Sized	Greenhouse Flowers	Orach	Strawberry, 2-step program, 1st step (Final Harvest)
Cauliflower	Greenhouse Perennials	Orange	Strawberry, 2-step program, 2nd step (Final Harvest)
Cauliflower (Fall/Winter)	Greenhouse Shrubs	Orchids	Thyme
Cauliflower (Spring/Summer)	Hay	Oregano	Tomatillo
Cauliflower, Seed	Jalapeno	Oriental Lily	Tomato
Celery	Kale	Papaya	Turnip
Chard, Green	Kale (multiple cuttings)	Parsley	Walnuts
Chard, Red	Kale, Baby	Parsnip	Watercress
Chard, Swiss	Kale, Baby (multiple cuttings)	Peach	Watermelon
Cherimoya	Kalettes	Pear	Wheat
Cherry	Kohlrabi	Peas	Zucchini
	Leek		