YouTube Transcript: Total Nitrogen Applied (TNA) Recordkeeping Tutorial

This video is for all growers enrolled in the Central Coast Water Board's Irrigated Lands Program.

Link to tutorial: https://youtu.be/Y-w882JKz0w

In this video, you will learn …

Which records to maintain for total nitrogen applied reporting. This information will be used for both the Total Nitrogen Applied (or TNA) report and the Irrigation and Nutrient Management Plan (or INMP) Summary report.

Who is required to keep TNA records?

All growers in Region 3 must begin keeping TNA records starting January 1, 2023.

When do growers need to begin keeping TNA records to submit a TNA Report or INMP Summary report?

The recordkeeping period is January 1st to December 31st of each year.

Growers must submit their report by March 1st of the following year.

For example, growers who start recordkeeping in 2023 will need to report those records by March 1, 2024.

What is the TNA report?

The TNA report is an annual report on the total amount of nitrogen applied to a ranch from all sources throughout the year, including:

- Irrigation Water
- Fertilizer (such as synthetic and organic), and
- Compost and amendments

What is the INMP Summary report?

The INMP Summary report is a report on the total nitrogen applied to and removed from a ranch from all sources throughout the year, plus irrigation management. The first section of the INMP Summary report is identical to the TNA report, which is why this video covers TNA records to keep for both reports.

Growers who submit an INMP Summary report do not also need to submit a separate TNA report.

Please watch the INMP Summary Report Recordkeeping video linked below for information on keeping records for the nitrogen removed and irrigation management sections of the INMP Summary report.

INMP Summary Report Recordkeeping video: https://youtu.be/1gyspUMqqKg

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Who is required to keep records and submit a TNA or INMP Summary Report?

Growers whose ranches are in Groundwater Phase area 1 should begin INMP recordkeeping on January 1, 2023, or the first day they begin farming activities, so they can submit an INMP summary report in 2024 and annually thereafter.

Growers whose ranches are in groundwater phase area 2 should begin TNA recordkeeping in 2023 so they can submit TNA reports annually until 2025. Then they should begin additional recordkeeping for INMP in 2025 so they can submit an INMP Summary report in 2026 and annually thereafter.

Growers whose ranches are in groundwater phase area 3 should begin TNA recordkeeping in 2023 so they can submit TNA reports annually until 2027. Then they should begin additional recordkeeping for INMP in 2027 so they can submit an INMP Summary report in 2028 and annually thereafter.

Eventually, all growers will be required to submit the INMP Summary Report.

Which Groundwater Phase Area are my ranches in?

The groundwater phase area where a ranch is located determines when growers are required to keep records and submit either a TNA or INMP Summary Report for that ranch.

To find each ranch's groundwater phase area, log in to GeoTracker. Link: https://geotracker.waterboards.ca.gov/esi/login.

The groundwater phase area is located on your GeoTracker dashboard next to each ranch name.

If you have multiple ranches, please check the groundwater phase area for each individual ranch, as they could be different.

Please contact Irrigated Lands Program staff if you have questions.

What TNA records must be maintained for TNA and INMP reporting?

Growers must maintain records on:

The total amount of nitrogen applied from all sources, including:

- Irrigation water.

- Fertilizer (synthetic and organic); and
- Compost and amendments if they were applied

Growers will also need to:

- take annual measures of the nitrogen content in their soil and
- maintain detailed records of the crops produced, as well as
- acres planted and harvested annually, crop by crop.

Let's dive in!

Irrigation Water Records

Growers needs to keep records of:

- the total volume of irrigation water applied to an entire ranch; and
- the nitrogen concentration in irrigation water.

This information will be used to calculate the total nitrogen applied to the ranch from irrigation water.

Irrigation Water Records - Volume

The total volume of irrigation water (reported in gallons) applied to the ranch from all irrigation sources can be estimated for the TNA report but must be measured for the INMP Summary Report. All growers also need to estimate, and are encouraged to measure, the volume of water applied to each specific crop. This includes but is not limited to water used for leaching salts, water that runs off from the field, water used to backflush filters, and water released at the pump due to operational spills. This does not include rainwater.

The total volume of irrigation water reported should include all water sources, including water from a well, water delivered by the city, any recycled or reclaimed water projects, or water pumped from surface waterbodies, creeks, or streams.

Irrigation Water Records – How to Measure Volume

To estimate the total volume of irrigation water for TNA reporting, growers could refer to their well pump's electrical usage or measure the volume of water delivered to the field. This can be done by measuring the individual sprinkler or drippers flow rate in gallons per minute. Multiply that by the total number of sprinkler or drippers in a ranch, block, or irrigation set. This calculated volume must be multiplied by the total number of hours the system is on during the year.

To measure the total volume of irrigation water for INMP Summary reporting, you should use a flow meter, or another volume measuring device. Some water agencies

that deliver water to ranches provide the volume of irrigation water delivered or pumped out of the ground on an annual basis. If this applies to you, contact your local water agency for more information.

The TNA and INMP Summary Report instructions on the Irrigated Lands Program website provides a list of water agencies and can be found at this link: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/tna_inmp.html.

Irrigation Water Records – Nitrogen Concentration

Growers submitting a TNA report must obtain a precise nitrogen concentration measurement from their primary irrigation source during the reporting period. "Precise" means an exact measurement, like 2.5 mg/L or 4 mg/L, and not a range, like 1 to 5 mg/L.

Growers submitting an INMP Summary Report must obtain a precise nitrogen concentration from all irrigation water sources (not just the primary irrigation well). An excel spreadsheet for calculating the weighted average nitrogen concentration can be found at this link: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fgeotracker.waterboards.ca.gov%2Fagland%2Fweighted_avg_conc.xlsx&wdOrigin=BROWSELINK

Growers can also contact one of the qualified laboratories listed on the Irrigated Lands Program website, available at this link: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/gw_labs.pdf. Or use a portable measuring device to measure the precise nitrogen concentration.

Growers using recycled or reclaimed water should contact their supplier for information about the total nitrogen concentration of their delivered water. If the water supplier does not have the data or if growers blend their water with another source, growers should take a sample of the water delivered to their ranch and precisely measure the nitrogen concentration.

Fertilizer Records

Growers will need to maintain records on the nitrogen applied with both organic and synthetic fertilizers to each specific crop during the reporting period, including the amount applied to cover crops, throughout the year.

For granular fertilizer, keep records on pounds of fertilizer applied and the N-P-K value, or nitrogen (N), phosphorus (P), and potassium (K) value.

For liquid fertilizer, keep records on the net weight and net volume, and the N-P-K values.

Also keep records on crop acres.
This will be reported as the average pounds of nitrogen applied per crop-acre for each crop produced and harvested during the year.

Fertilizer Records – Calculate Crop Acre

To calculate a crop acre, add the total number of acres where a crop was grown and harvested during the reporting period. For example, if a grower has a crop of a head lettuce on 10 acres, then a crop of broccoli on that same 10 acres, and then a crop of head lettuce also on that same 10 acres, they report 20 acres of head lettuce (10+10=20) and 10 acres of broccoli (10).

Fertilizer Records – Granular

Keep track of the nitrogen content on all fertilizer labels so you can convert from pounds of fertilizer to pounds of nitrogen per acre for reporting.

To calculate pounds of nitrogen applied if you use granular synthetic fertilizer, for example, identify the pounds of nitrogen applied by looking at the fertilizer label. Note that if a fertilizer has a value of 10-5-5 N-P-K, or nitrogen (N), phosphorus (P), and potassium (K), this means it contains 10% nitrogen. If you apply 100 pounds of this fertilizer on 10 acres of crops, you applied 10 pounds of nitrogen per 10 crop acres, which is an average of one pound of nitrogen per crop acre.

Also refer to this link: https://geotracker.waterboards.ca.gov/agland/n_from_fertilizers.xlsx which will help growers calculate and report the weighted average of fertilizer applications.

Fertilizer Records – Liquid

For liquid fertilizers, keep track of the fertilizer net weight and net volume. Also keep record of the percentage of total nitrogen by noting the N-P-K value.

Refer to this link: https://edis.ifas.ufl.edu/publication/hs1200 for an example on how to calculate the pounds of nitrogen applied from liquid fertilizers, which is located on page 21 of the TNA Report Instructions.

Compost Records

Compost and other non-fertilizer amendments are a source of nitrogen and other soil benefits, such as improved soil structure, water holding capacity, nutrient retention, biodiversity, and more. Amendments include all non-fertilizer materials containing nitrogen, such as mulch, compost teas, humic acid, or soil enhancers.

Compost Records

If you apply compost or other amendments to your ranch, you must maintain records on each specific compost or amendment applied on the ranch during the reporting period, the total pounds of nitrogen applied, and the total acreage that received the compost or other amendments.

To report the nitrogen applied in compost, you need to know the amount of nitrogen present in the compost material. The carbon-to-nitrogen ratio (C:N ratio) is a ratio of carbon to nitrogen in a substance. The carbon-to-nitrogen ratio is optional and should be reported if you intend to claim a discount.

The compost "discount" incentivizes growers to implement management practices that improve soil health, and the discount varies based on the carbon-to-nitrogen ratio of the compost applied.

Please contact Irrigated Lands Program staff for additional information on discounts.

Soil Records

Nitrogen present in the soil must be measured at least once per annual reporting period for at least one crop. The goal is to measure the content of nitrogen present in the soil that is available for crop uptake. To achieve this, measure the nitrogen in the soil for one crop prior to planting, seeding or pre-side dressing, during a time of the year when nitrogen content is high and will be a source of nitrogen for future crops.

To obtain this measurement, take a soil sample for laboratory analysis or use a nitrate quick test or alternative method, such as a Cardy nitrate meter or hand-held device.

Crop Records

Growers must maintain a list of all crops grown and crop acreage produced during the reporting year.

This includes crops that produced no yield, were disked in, or grown for research purposes only and not for maximum crop yield. Please keep records of nitrogen applied to these crops, as well.

What else needs to be in the TNA report?

All growers will need to keep additional records on the total acres under production and fallowed acreage, and any other information used to make nitrogen application decisions.

It is important to note that the TNA and INMP Summary reports must be reviewed by the Operator/Responsible Party. They are required to verify that the information submitted is true and accurate based on their best knowledge.

How do I submit a TNA or INMP Summary report?

Growers who <u>are</u> members of the approved third-party program Central Coast Water Quality Preservation Inc., also referred to as "Preservation, Inc.," can contact them directly to ask about TNA or INMP Summary reporting.

Growers who are not members of the approved third-party program and who are complying with Ag Order requirements individually must submit their TNA or INMP Summary reports on GeoTracker.

It is important to note that all growers are required to submit the same information in their TNA or INMP Summary reports, regardless of third-party program member status.

Why is reporting required?

The central coast has 4,000 square miles of groundwater basins and 86% of our water supply comes from groundwater. Our most recent data indicates that 31% of domestic wells sampled in our region exceed drinking water standards for nitrate as nitrogen, which means that people relying on those drinking water wells may need to get their water from other sources to prevent health problems.

Groundwater contamination is caused by not accounting for nitrogen already in the soil or irrigation water, applying more fertilizer than crops need, and irrigating inefficiently. These factors contribute to excess nitrogen in the soil which then leaches into groundwater.

Collecting data on nitrogen application is key to reducing groundwater contamination to protect human and environmental health.

Where can I find more information on TNA and INMP reports?

To find additional information on TNA and INMP record keeping and reporting, visit the Irrigated Lands Program website. Scroll down to the “I am looking for” section and select Total Nitrogen Applied Report / Irrigation and Nutrient Management Summary Report.

This page provides you detailed instructions about TNA and INMP recordkeeping and reporting.

It also provides a link to the Compliance Calendar, available in English, Spanish and Chinese, which provides detailed information on what is required and when.

Thank you for working to protect water quality!

For assistance, please email or call Irrigated Lands Program staff at:

AgNOI@waterboards.ca.gov

or (805) 549-3148

Members of the Third-Party Program can contact Preservation, Inc. at:

support@ccwqp.org or (831) 761-8644.