



# David Vander Schaaf Dairy

## 2023 Annual Report

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|--|--|
| <input checked="" type="checkbox"/> Report Form  | <input type="checkbox"/> NA Attachment H                           |
| <input checked="" type="checkbox"/> Attachment A | <input type="checkbox"/> NA Attachment I                           |
| <input checked="" type="checkbox"/> Attachment B | <input type="checkbox"/> NA Attachment J                           |
| <input checked="" type="checkbox"/> Attachment C | <input type="checkbox"/> NA Manure Tracking Manifests              |
| <input checked="" type="checkbox"/> Attachment D | <input type="checkbox"/> NA New or Revised Waste Water Agreements  |
| <input checked="" type="checkbox"/> Attachment E | <input checked="" type="checkbox"/> Groundwater Monitoring Samples |
| <input checked="" type="checkbox"/> Attachment F | <input type="checkbox"/> NA Monitoring Well Report                 |
| <input checked="" type="checkbox"/> Attachment G | <input type="checkbox"/> NA Owner/Operator Change Form             |

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Enclosed are the required documents to be submitted to the Regional Water Quality Control Board Central Valley Region in compliance with Order No. R5-2013-0122 Waste Discharge Requirements, General Order for Existing Milk Cow Dairies for July 1, 2024.

(See attached delivery confirmation)

# Annual Report

## David Vander Schaaf Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

Facility Information:

|                  |  |
|------------------|--|
| Name of Dairy    | David Vander Schaaf Dairy                  |
| Facility Address | 7524 S. Fairfax Road, Bakersfield CA 93307 |

Owner/Operator as of 12/31/2023

|                |                     |
|----------------|---------------------|
| Operator Name  | David Vander Schaaf |
| Operator Phone | (909) 214-8641      |
| Owner Name     | David Vander Schaaf |
| Owner Phone    | (909) 214-8641      |

1. Beginning and end dates of the annual reporting period: crops harvested January 1, 2023 through December 31, 2023.
2. Maximum and average number and type of animals (see Attachment A).
3. Estimated amount of total manure and process wastewater generated by the facility (see Attachment A).
4. Estimated amount of total manure and process wastewater applied to each land application area (see Attachment B).
5. Quantified ratio of total nitrogen applied to land application areas and total nitrogen removed by crop harvest (see Attachment B).
6. Estimated amount of total manure and process wastewater transferred to other persons by the facility (see Attachment C).
7. Total number of acres and the Assessor Parcel Numbers for all land application areas that were not used for application of manure or process wastewater (see Attachment D).
8. Total number of acres and the Assessor Parcel Numbers for all land application areas that were used for land application of manure and process wastewater (see Attachment D).

9. Summary of manure and process wastewater discharges from the production area

Provide a summary of all manure and wastewater discharges from the production area to surface water or to land areas (land application areas or otherwise) when not in accordance with the facility's Nutrient Management Plan, that occurred during the annual reporting period, including the date, time, location, approximate volume, a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:

- No discharges occurred during the reporting period.  
 Yes. \_\_\_\_\_ Number of discharges occurred (see Attachment H).

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**  
**CENTRAL VALLEY REGION**

**10. Summary of storm water discharges from the production area**

Provide a summary of all storm water discharges from the production area to surface water, that occurred during the annual reporting period, including the date, time, approximate volume, duration, location, a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:

- No discharges occurred during the reporting period.  
 Yes. \_\_\_\_\_ Number of discharges occurred (see Attachment I).

**11. Summary of discharges from the land application area**

Provide a summary of all discharges from the land application area to surface water, that occurred during the annual reporting period, including the date, time, approximate volume, location, source of discharge (i.e. tailwater, wastewater or blended wastewater), a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:

- No discharges occurred during the reporting period.  
 Yes. \_\_\_\_\_ Number of discharges occurred (see Attachment J).

**12. Nutrient Management Plan update**

Has the NMP been updated, and if so, was it updated by a Certified Nutrient Management Specialist?

- No.  
 Yes, the new NMP was developed and approved by a Certified Nutrient Management Specialist.

**13. Manure/Process Wastewater Tracking Manifests**

Did you sell, give away, or otherwise remove manure or process wastewater from your property?

- No.  
 Yes, see attached manifests.

**14. Written Agreements**

Any process wastewater transferred to a third party that receives process wastewater from your dairy for its own use must have a written agreement consistent with State requirements. Attach copies of revised and/or new agreements not submitted previously. Do not resubmit agreements submitted previously.

- Not applicable; no written agreements.  
 No changes in agreement(s).  
 Yes, a new or revised agreement is attached.

**15. Laboratory Analyses for Discharges**

If you answered Yes to items #9, 10, or 11 above, attach copies of all laboratory analyses for all discharges (manure, process wastewater or tailwater), surface water (upstream and downstream of a discharge), and storm water, including chain-of-custody forms and laboratory quality assurance/quality control results, as applicable. (Results for Manure and process wastewater, storm water, and/or storm water are provided).

- Not Applicable.  
 Yes, provided with Attachment H, I, or J for #9, 10 and 11, respectively.

**16. Tabulated Nutrient Analytical Data**

Attach tabulated analytical data for samples of manure, process wastewater, irrigation water, soil, and plant tissue. The data shall be tabulated to clearly show sample dates, constituents analyzed, constituent concentrations, and detection limits (see Attachment E).

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CENTRAL VALLEY REGION

**17. Record-Keeping Results**

Attach results of the Record-Keeping Requirements for the production and land application areas specified in Record-Keeping Requirements. These include:

- \* Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction.
- \* Records of the date, time, and estimated volume of any overflow or bypass of the wastewater storage or conveyance structures.
- \* Expected and actual crop yields (see Attachment F).
- \* Identification of crop, acreage, and dates of planting and harvest for each field (see Attachment F).
- \* Dates, locations, and approximate weight and moisture content of manure applied to each field (see Attachment B).
- \* Dates, locations, and volume of process wastewater applied to each field (see Attachment B).
- \* Whether precipitation occurred, or standing water was present at the time of manure and process wastewater applications and for 24 hours prior to and following applications (see Attachment G).
- \* Total amount of nitrogen, phosphorus, and potassium actually applied to each field, including documentation of calculations for the total amount applied (see Attachment B).

**18. Groundwater Monitoring Section**

- Groundwater monitoring results are attached.  
 Monitoring Well results are attached, if applicable.

A. All dischargers must attach groundwater information for supply wells and subsurface (tile) drainage systems including the location of sample collection and all field and laboratory data, including all laboratory analyses (including chain-of-custody forms and laboratory quality assurance/quality control results).

B. Dischargers who have monitoring well systems shall include all laboratory analyses (including chain-of-custody forms and laboratory quality assurance/quality control results) and tabular and graphical summaries of the monitoring data. Data shall be tabulated to clearly show the sample dates, constituents analyzed, constituent concentrations, detection limits, depth to groundwater and groundwater elevations. Graphical summaries of groundwater gradients and flow directions shall also be included. Each groundwater monitoring report shall include a summary data table for all historical and current groundwater elevations and analytical results. The groundwater monitoring results shall be certified by a California registered professional.

**19. Storm Water Reporting Section**

- No significant discharges of storm water occurred from the land application areas.  
 Yes, significant discharge(s) of storm water occurred from land application areas. The following information shall be submitted for those discharges.  
 It was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions.

**20. Mortality Management Practices**

- \* Dead cows are picked up and disposed of by rendering service.

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"I certify under penalty of law 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."

Same as owner

Signature of Operator of Facility

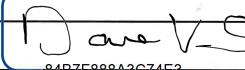
David Vander Schaaf

Print Name

6/28/2024

Title and Date

DocuSigned by:

  
64B7F008A9C74E3...

Signature of Owner of Facility

David Vander Schaaf

Print Name

6/28/2024

Title and Date



INNOVATIVE AG SERVICES

**David Vander Schaaf Dairy 2023**  
**Estimated Manure and Nutrients Generated (Attachment A)**

| Animal Type   | Maximum No. of Head | Average No. of Head* | Housing Type      | Weight | Total Manure Produced (tons/year) | NITROGEN                                | PHOSPHORUS                              | POTASSIUM                               | SALTS                                   |
|---------------|---------------------|----------------------|-------------------|--------|-----------------------------------|---|---|---|---|
|               |                     |                      |                   |        |                                   | Net (LB) Available for Land Application |
| Hol Milk Cows | 1,932               | 1,883                | Milk Flushed Lane | 1,400  | 47,788.45                         | 680,422.05                              | 116,840.15                              | 158,077.85                              | 1,241,254.77                            |
| Hol Dry Cows  | 305                 | 297                  | Flushed           | 1,450  | 4,333.86                          | 54,202.50                               | 7,588.35                                | 35,773.65                               | 76,490.57                               |
|               | 2,237               | 2,180                |                   |        | 52,122.30                         | 734,624.55                              | 124,428.50                              | 193,851.50                              | 1,317,745.34                            |

\* The Average No. of Head is used to calculate manure and nutrient production

**Estimated Amount of Total Process Wastewater and Nutrients Generated**

| Total Gallons of Process Wastewater Generated*** | Average TKN Concentration (mg/L)* | Average Total Phosphorus Concentration (mg/L)* | Average Potassium Concentration (mg/L)* | Average Total Dissolved Solids (mg/L)* | Total Nitrogen Generated (lb)** | Total Phosphorus Generated (lb)** | Total Potassium Generated (lb)** | Total Salt Generated (lb)** |
|--|-----------------------------------|--|---|--|---------------------------------|-----------------------------------|----------------------------------|-----------------------------|
| 18,645,772                                       | 568.00                            | 107.07   | 1,098.33                                | 6,163.33                               | 88,221.35                       | 16,629.52                         | 170,592.34                       | 957,284.48                  |

\* The average Total Kjeldahl Nitrogen, Total Phosphorus, Total Potassium, and Total Salt concentrations are based on an average of all process wastewater sample results for the year.

\*\* The total pounds of Nitrogen, Phosphorus, Potassium and Total Dissolved Solids generated = Average Concentration (mg/L) X Total Gallons of Wastewater Generated X 8.33 X 0.000001.

\*\*\* The total gallons of process wastewater generated is calculated as the total gallons of process wastewater applied to all land application areas (Attachment B) plus the total gallons of process wastewater transferred offsite (Attachment C).



# David Vander Schaaf Dairy 2023

## Nutrient Applications (Attachment B)

Field Name: F1

Wheat, 38 Acres Planted on 12/20/2022

| Date                          | Event/Source             | Amount<br>Applied/Yield<br>(per Acre) | Units       | Lab Sample Data |          |        |         | Manure<br>Applied<br>(Tons) | Wastewater<br>Applied<br>(Gallons) | Nitrogen<br>Applied<br>(Lbs) | Phosphorus<br>Applied<br>(Lbs) | Potassium<br>Applied<br>(Lbs) | Salt<br>Applied<br>(Lbs) | Nitrogen<br>Extracted<br>(Lbs) |
|-------------------------------|--------------------------|---------------------------------------|-------------|-----------------|----------|--------|---------|-----------------------------|------------------------------------|------------------------------|--------------------------------|-------------------------------|--------------------------|--------------------------------|
|                               |                          |                                       |             | % Moist.        | Nitrogen | Phos.  | Potass. |                             |                                    |                              |                                |                               |                          |                                |
| 01/01/2023                    | Atmospheric Deposit      | 14.00                                 | Pounds      |                 | 100.00   |        | %       |                             |                                    | 532                          |                                |                               |                          |                                |
| 01/13/2023                    | Ground Water: Well Avg   | 3.88                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 17                           | 0                              | 0                             | 8,671                    |                                |
| 01/13/2023                    | Waste Water: Main Lagoon | 0.70                                  | Acre Inches |                 | 400.00   | 21.60  | 1,100.0 | mg/L                        | 722,304                            | 2,407                        | 130                            | 6,618                         | 42,659                   |                                |
| 03/12/2023                    | Ground Water: Well Avg   | 4.53                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 19                           | 0                              | 0                             | 10,124                   |                                |
| 03/12/2023                    | Waste Water: Main Lagoon | 0.81                                  | Acre Inches |                 | 833.00   | 269.00 | 1,470.0 | mg/L                        | 835,809                            | 5,800                        | 1,873                          | 10,235                        | 53,819                   |                                |
| 05/09/2023                    | Ground Water: Well Avg   | 4.42                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 19                           | 0                              | 0                             | 9,878                    |                                |
| 05/09/2023                    | Waste Water: Main Lagoon | 0.79                                  | Acre Inches |                 | 833.00   | 269.00 | 1,470.0 | mg/L                        | 815,172                            | 5,656                        | 1,827                          | 9,982                         | 52,490                   |                                |
| 05/24/2023                    | Harvest                  | 20.80                                 | Tons        | 50.60           | 1.41     | 0.28   | 2.00    | %                           |                                    |                              |                                |                               |                          | 11,011                         |
| <b>Acre Inches Applied:</b>   |                          | <b>15.13</b>                          |             |                 |          |        |         | <b>Totals:</b>              | <b>2,373,286</b>                   | <b>14,450</b>                | <b>3,830</b>                   | <b>26,835</b>                 | <b>177,640</b>           | <b>11,011</b>                  |
| <b>Season Nitrogen Ratio:</b> |                          | <b>1.31</b>                           |             |                 |          |        |         | <b>Lbs Per Acre:</b>        |                                    |                              |                                |                               |                          | <b>290</b>                     |

# David Vander Schaaf Dairy 2023

## Nutrient Applications (Attachment B)

Field Name: F1

Corn, 38 Acres Planted on 07/06/2023

| Date                          | Event/Source             | Amount<br>Applied/Yield<br>(per Acre) | Units       | Lab Sample Data      |          |       | Manure<br>Applied<br>(Tons) | Wastewater<br>Applied<br>(Gallons) | Nitrogen<br>Applied<br>(Lbs) | Phosphorus<br>Applied<br>(Lbs) | Potassium<br>Applied<br>(Lbs) | Salt<br>Applied<br>(Lbs) | Nitrogen<br>Extracted<br>(Lbs) |        |
|-------------------------------|--------------------------|---------------------------------------|-------------|----------------------|----------|-------|-----------------------------|------------------------------------|------------------------------|--------------------------------|-------------------------------|--------------------------|--------------------------------|--------|
|                               |                          |                                       |             | % Moist.             | Nitrogen | Phos. |                             |                                    |                              |                                |                               |                          |                                |        |
| 07/18/2023                    | Ground Water: Well Avg   | 5.62                                  | Acre Inches |                      | 0.50     |       |                             |                                    | 24                           | 0                              | 0                             | 12,560                   |                                |        |
| 07/18/2023                    | Waste Water: Main Lagoon | 0.96                                  | Acre Inches |                      | 395.00   | 23.30 | 859.00                      | mg/L                               |                              | 990,589                        | 3,259                         | 192                      | 7,088                          | 47,942 |
| 08/02/2023                    | Ground Water: Well Avg   | 7.07                                  | Acre Inches |                      | 0.50     |       |                             | mg/L                               |                              |                                | 30                            | 0                        | 0                              | 15,800 |
| 08/17/2023                    | Ground Water: Well Avg   | 5.76                                  | Acre Inches |                      | 0.50     |       |                             | mg/L                               |                              |                                | 25                            | 0                        | 0                              | 12,872 |
| 08/17/2023                    | Waste Water: Main Lagoon | 0.98                                  | Acre Inches |                      | 395.00   | 23.30 | 859.00                      | mg/L                               |                              | 1,011,226                      | 3,327                         | 196                      | 7,236                          | 48,941 |
| 08/31/2023                    | Ground Water: Well Avg   | 7.24                                  | Acre Inches |                      | 0.50     |       |                             | mg/L                               |                              |                                | 31                            | 0                        | 0                              | 16,180 |
| 09/14/2023                    | Ground Water: Well Avg   | 5.62                                  | Acre Inches |                      | 0.50     |       |                             | mg/L                               |                              |                                | 24                            | 0                        | 0                              | 12,560 |
| 09/14/2023                    | Waste Water: Main Lagoon | 0.96                                  | Acre Inches |                      | 395.00   | 23.30 | 859.00                      | mg/L                               |                              | 990,589                        | 3,259                         | 192                      | 7,088                          | 47,942 |
| 09/24/2023                    | Ground Water: Well Avg   | 6.41                                  | Acre Inches |                      | 0.50     |       |                             | mg/L                               |                              |                                | 27                            | 0                        | 0                              | 14,325 |
| 10/05/2023                    | Harvest                  | 29.70                                 | Tons        | **                   | 0.42     | 0.08  | 0.34                        | %                                  |                              |                                |                               |                          |                                | 9,480  |
| <b>Acre Inches Applied:</b>   |                          | <b>40.62</b>                          |             | <b>Totals:</b>       |          |       |                             | <b>2,992,404</b>                   | <b>10,008</b>                | <b>581</b>                     | <b>21,412</b>                 | <b>229,122</b>           | <b>9,480</b>                   |        |
| <b>Season Nitrogen Ratio:</b> |                          | <b>1.06</b>                           |             | <b>Lbs Per Acre:</b> |          |       |                             | <b>263</b>                         | <b>15</b>                    | <b>563</b>                     | <b>6,030</b>                  | <b>249</b>               |                                |        |

# David Vander Schaaf Dairy 2023

## Nutrient Applications (Attachment B)

Field Name: F2

Wheat, 37 Acres Planted on 12/20/2022

| Date                          | Event/Source             | Amount<br>Applied/Yield<br>(per Acre) | Units       | Lab Sample Data |          |        |         | Manure<br>Applied<br>(Tons) | Wastewater<br>Applied<br>(Gallons) | Nitrogen<br>Applied<br>(Lbs) | Phosphorus<br>Applied<br>(Lbs) | Potassium<br>Applied<br>(Lbs) | Salt<br>Applied<br>(Lbs) | Nitrogen<br>Extracted<br>(Lbs) |     |
|-------------------------------|--------------------------|---------------------------------------|-------------|-----------------|----------|--------|---------|-----------------------------|------------------------------------|------------------------------|--------------------------------|-------------------------------|--------------------------|--------------------------------|-----|
|                               |                          |                                       |             | % Moist.        | Nitrogen | Phos.  | Potass. |                             |                                    |                              |                                |                               |                          |                                |     |
| 01/01/2023                    | Atmospheric Deposit      | 14.00                                 | Pounds      |                 | 100.00   |        | %       |                             |                                    | 518                          |                                |                               |                          |                                |     |
| 01/16/2023                    | Ground Water: Well Avg   | 3.88                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 16                           | 0                              | 0                             | 8,443                    |                                |     |
| 01/16/2023                    | Waste Water: Main Lagoon | 0.75                                  | Acre Inches |                 | 400.00   | 21.60  | 1,100.0 | mg/L                        |                                    | 753,532                      | 2,511                          | 135                           | 6,905                    | 44,503                         |     |
| 03/15/2023                    | Ground Water: Well Avg   | 4.54                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 19                           | 0                              | 0                             | 9,879                    |                                |     |
| 03/15/2023                    | Waste Water: Main Lagoon | 0.90                                  | Acre Inches |                 | 833.00   | 269.00 | 1,470.0 | mg/L                        |                                    | 904,238                      | 6,274                          | 2,026                         | 11,073                   | 58,225                         |     |
| 05/12/2023                    | Ground Water: Well Avg   | 4.43                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 18                           | 0                              | 0                             | 9,640                    |                                |     |
| 05/12/2023                    | Waste Water: Main Lagoon | 0.87                                  | Acre Inches |                 | 833.00   | 269.00 | 1,470.0 | mg/L                        |                                    | 874,097                      | 6,065                          | 1,959                         | 10,703                   | 56,284                         |     |
| 05/24/2023                    | Harvest                  | 21.00                                 | Tons        | 46.30           | 1.38     | 0.28   | 2.20    | %                           |                                    |                              |                                |                               |                          | 11,516                         |     |
| <b>Acre Inches Applied:</b>   |                          | <b>15.37</b>                          |             |                 |          |        |         | <b>Totals:</b>              | <b>2,531,867</b>                   | <b>15,422</b>                | <b>4,120</b>                   | <b>28,681</b>                 | <b>186,974</b>           | <b>11,516</b>                  |     |
| <b>Season Nitrogen Ratio:</b> |                          | <b>1.34</b>                           |             |                 |          |        |         | <b>Lbs Per Acre:</b>        |                                    |                              |                                |                               |                          |                                |     |
|                               |                          |                                       |             |                 |          |        |         |                             |                                    |                              | 417                            | 111                           | 775                      | 5,053                          | 311 |

**David Vander Schaaf Dairy 2023  
Nutrient Applications (Attachment B)**

Field Name: F2

Corn, 37 Acres Planted on 07/06/2023

| Date                          | Event/Source             | Amount Applied/Yield (per Acre) | Units       | Lab Sample Data      |          |       | Manure Applied (Tons) | Wastewater Applied (Gallons) | Nitrogen Applied (Lbs) | Phosphorus Applied (Lbs) | Potassium Applied (Lbs) | Salt Applied (Lbs) | Nitrogen Extracted (Lbs) |        |
|-------------------------------|--------------------------|---------------------------------|-------------|----------------------|----------|-------|-----------------------|------------------------------|------------------------|--------------------------|-------------------------|--------------------|--------------------------|--------|
|                               |                          |                                 |             | % Moist.             | Nitrogen | Phos. |                       |                              |                        |                          |                         |                    |                          |        |
| 07/21/2023                    | Ground Water: Well Avg   | 5.63                            | Acre Inches |                      | 0.50     |       |                       |                              | 24                     | 0                        | 0                       | 12,251             |                          |        |
| 07/21/2023                    | Waste Water: Main Lagoon | 0.96                            | Acre Inches |                      | 395.00   | 23.30 | 859.00                | mg/L                         |                        | 964,521                  | 3,173                   | 187                | 6,902                    | 46,680 |
| 08/05/2023                    | Ground Water: Well Avg   | 7.09                            | Acre Inches |                      | 0.50     |       |                       | mg/L                         |                        |                          | 30                      | 0                  | 0                        | 15,428 |
| 08/20/2023                    | Ground Water: Well Avg   | 5.77                            | Acre Inches |                      | 0.50     |       |                       | mg/L                         |                        |                          | 24                      | 0                  | 0                        | 12,556 |
| 08/20/2023                    | Waste Water: Main Lagoon | 0.99                            | Acre Inches |                      | 395.00   | 23.30 | 859.00                | mg/L                         |                        | 994,662                  | 3,273                   | 193                | 7,117                    | 48,139 |
| 09/03/2023                    | Ground Water: Well Avg   | 7.26                            | Acre Inches |                      | 0.50     |       |                       | mg/L                         |                        |                          | 30                      | 0                  | 0                        | 15,798 |
| 09/17/2023                    | Ground Water: Well Avg   | 5.63                            | Acre Inches |                      | 0.50     |       |                       | mg/L                         |                        |                          | 24                      | 0                  | 0                        | 12,251 |
| 09/17/2023                    | Waste Water: Main Lagoon | 0.96                            | Acre Inches |                      | 395.00   | 23.30 | 859.00                | mg/L                         |                        | 964,521                  | 3,173                   | 187                | 6,902                    | 46,680 |
| 09/27/2023                    | Ground Water: Well Avg   | 6.42                            | Acre Inches |                      | 0.50     |       |                       | mg/L                         |                        |                          | 27                      | 0                  | 0                        | 13,970 |
| 10/05/2023                    | Harvest                  | 29.20                           | Tons        | **                   | 0.42     | 0.08  | 0.34                  | %                            |                        |                          |                         |                    |                          | 9,075  |
| <b>Acre Inches Applied:</b>   |                          | <b>40.71</b>                    |             | <b>Totals:</b>       |          |       |                       | <b>2,923,703</b>             | <b>9,778</b>           | <b>568</b>               | <b>20,921</b>           | <b>223,752</b>     | <b>9,075</b>             |        |
| <b>Season Nitrogen Ratio:</b> |                          | <b>1.08</b>                     |             | <b>Lbs Per Acre:</b> |          |       |                       | <b>264</b>                   | <b>15</b>              | <b>565</b>               | <b>6,047</b>            | <b>245</b>         |                          |        |

# David Vander Schaaf Dairy 2023

## Nutrient Applications (Attachment B)

Field Name: F3

Wheat, 51 Acres Planted on 12/20/2022

| Date                   | Event/Source             | Amount<br>Applied/Yield<br>(per Acre) | Units       | Lab Sample Data |          |        |         | Manure<br>Applied<br>(Tons) | Wastewater<br>Applied<br>(Gallons) | Nitrogen<br>Applied<br>(Lbs) | Phosphorus<br>Applied<br>(Lbs) | Potassium<br>Applied<br>(Lbs) | Salt<br>Applied<br>(Lbs) | Nitrogen<br>Extracted<br>(Lbs) |     |
|------------------------|--------------------------|---------------------------------------|-------------|-----------------|----------|--------|---------|-----------------------------|------------------------------------|------------------------------|--------------------------------|-------------------------------|--------------------------|--------------------------------|-----|
|                        |                          |                                       |             | % Moist.        | Nitrogen | Phos.  | Potass. |                             |                                    |                              |                                |                               |                          |                                |     |
| 01/01/2023             | Atmospheric Deposit      | 14.00                                 | Pounds      |                 | 100.00   |        | %       |                             |                                    | 714                          |                                |                               |                          |                                |     |
| 01/10/2023             | Ground Water: Well Avg   | 3.94                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 23                           | 0                              | 0                             | 11,817                   |                                |     |
| 01/10/2023             | Waste Water: Main Lagoon | 0.86                                  | Acre Inches |                 | 400.00   | 21.60  | 1,100.0 | mg/L                        | 1,190,988                          | 3,968                        | 214                            | 10,913                        | 70,339                   |                                |     |
| 03/09/2023             | Ground Water: Well Avg   | 4.42                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 26                           | 0                              | 0                             | 13,257                   |                                |     |
| 03/09/2023             | Waste Water: Main Lagoon | 0.97                                  | Acre Inches |                 | 400.00   | 21.60  | 1,100.0 | mg/L                        | 1,343,323                          | 4,476                        | 242                            | 12,309                        | 79,336                   |                                |     |
| 05/06/2023             | Ground Water: Well Avg   | 4.34                                  | Acre Inches |                 | 0.50     |        | mg/L    |                             |                                    | 25                           | 0                              | 0                             | 13,017                   |                                |     |
| 05/06/2023             | Waste Water: Main Lagoon | 0.95                                  | Acre Inches |                 | 833.00   | 269.00 | 1,470.0 | mg/L                        | 1,315,626                          | 9,129                        | 2,948                          | 16,110                        | 84,715                   |                                |     |
| 05/24/2023             | Harvest                  | 19.40                                 | Tons        | 41.10           | 1.32     | 0.28   | 2.27    | %                           |                                    |                              |                                |                               |                          | 15,385                         |     |
| Acre Inches Applied:   |                          | 15.48                                 |             |                 |          |        |         | Totals:                     | 3,849,937                          | 18,361                       | 3,404                          | 39,332                        | 272,481                  | 15,385                         |     |
| Season Nitrogen Ratio: |                          | 1.19                                  |             |                 |          |        |         | Lbs Per Acre:               |                                    |                              | 360                            | 67                            | 771                      | 5,343                          | 302 |

# David Vander Schaaf Dairy 2023

## Nutrient Applications (Attachment B)

Field Name: F3

Corn, 51 Acres Planted on 07/06/2023

| Date                   | Event/Source             | Amount<br>Applied/Yield<br>(per Acre) | Units       | Lab Sample Data |          |       |         | Manure<br>Applied<br>(Tons) | Wastewater<br>Applied<br>(Gallons) | Nitrogen<br>Applied<br>(Lbs) | Phosphorus<br>Applied<br>(Lbs) | Potassium<br>Applied<br>(Lbs) | Salt<br>Applied<br>(Lbs) | Nitrogen<br>Extracted<br>(Lbs) |        |
|------------------------|--------------------------|---------------------------------------|-------------|-----------------|----------|-------|---------|-----------------------------|------------------------------------|------------------------------|--------------------------------|-------------------------------|--------------------------|--------------------------------|--------|
|                        |                          |                                       |             | % Moist.        | Nitrogen | Phos. | Potass. |                             |                                    |                              |                                |                               |                          |                                |        |
| 07/15/2023             | Ground Water: Well Avg   | 5.55                                  | Acre Inches |                 | 0.50     |       |         |                             |                                    | 32                           | 0                              | 0                             | 16,646                   |                                |        |
| 07/15/2023             | Waste Water: Main Lagoon | 0.95                                  | Acre Inches |                 | 395.00   | 23.30 | 859.00  | mg/L                        |                                    | 1,315,626                    | 4,329                          | 256                           | 9,414                    | 63,673                         |        |
| 07/30/2023             | Ground Water: Well Avg   | 6.86                                  | Acre Inches |                 | 0.50     |       |         | mg/L                        |                                    |                              | 40                             | 0                             | 0                        | 20,575                         |        |
| 08/14/2023             | Ground Water: Well Avg   | 5.65                                  | Acre Inches |                 | 0.50     |       |         | mg/L                        |                                    |                              | 33                             | 0                             | 0                        | 16,946                         |        |
| 08/14/2023             | Waste Water: Main Lagoon | 0.97                                  | Acre Inches |                 | 395.00   | 23.30 | 859.00  | mg/L                        |                                    | 1,343,323                    | 4,420                          | 261                           | 9,612                    | 65,013                         |        |
| 08/28/2023             | Ground Water: Well Avg   | 6.99                                  | Acre Inches |                 | 0.50     |       |         | mg/L                        |                                    |                              | 40                             | 0                             | 0                        | 20,966                         |        |
| 09/11/2023             | Ground Water: Well Avg   | 5.55                                  | Acre Inches |                 | 0.50     |       |         | mg/L                        |                                    |                              | 32                             | 0                             | 0                        | 16,646                         |        |
| 09/11/2023             | Waste Water: Main Lagoon | 0.95                                  | Acre Inches |                 | 395.00   | 23.30 | 859.00  | mg/L                        |                                    | 1,315,626                    | 4,329                          | 256                           | 9,414                    | 63,673                         |        |
| 09/21/2023             | Ground Water: Well Avg   | 6.37                                  | Acre Inches |                 | 0.50     |       |         | mg/L                        |                                    |                              | 37                             | 0                             | 0                        | 19,106                         |        |
| 10/05/2023             | Harvest                  | 28.40                                 | Tons        | **              | 0.42     | 0.08  | 0.34    | %                           |                                    |                              |                                |                               |                          | 12,167                         |        |
| Acre Inches Applied:   |                          | 39.84                                 |             |                 |          |       |         |                             | Totals:                            | 3,974,575                    | 13,292                         | 772                           | 28,440                   | 303,245                        | 12,167 |
| Season Nitrogen Ratio: |                          | 1.09                                  |             |                 |          |       |         |                             | Lbs Per Acre:                      |                              |                                |                               |                          |                                |        |
|                        |                          |                                       |             |                 |          |       |         |                             |                                    | 261                          | 15                             | 558                           | 5,946                    | 239                            |        |

**David Vander Schaaf Dairy 2023  
Nutrient Applications (Attachment B)**

***Summary of Nutrient Applications, Removal, and Balance***

|                               | <u>Total N (Lbs)</u> | <u>Total P (Lbs)</u> | <u>Total K (Lbs)</u> | <u>Total Salts (Lbs)</u> | <u>Total Manure Applied</u> |         |
|-------------------------------|----------------------|----------------------|----------------------|--------------------------|-----------------------------|---------|
| Solid Manure                  | 0.00                 | 0.00                 | 0.00                 | 0.00                     |                             | tons    |
| Process Wastewater            | 78,829.52            | 13,273.55            | 165,620.03           | 1,021,052.60             | 18,645,771.64               | gallons |
| Irrigation Water              | 716.50               |                      |                      |                          |                             |         |
| Fertilizer / Total Imports    | 0.00                 |                      |                      |                          |                             |         |
| Atmospheric Deposition        | 1,764.00             |                      |                      |                          |                             |         |
| <b>Total Nitrogen Applied</b> | <b>81,310.02</b>     |                      |                      |                          |                             |         |
| Crop Nitrogen Removal         | 68,633.95            |                      |                      |                          |                             |         |
| <b>Nitrogen Balance</b>       | <b>12,676.07</b>     |                      |                      |                          |                             |         |
| <b>Nitrogen Ratio</b>         | <b>1.18</b>          |                      |                      |                          |                             |         |

- Nutrient applications shown in Attachment B are on a crop year basis.
  - Lab sample data results for applications are based on the sample taken closest to the application date. Lab sample data results are shown on 100% dry basis for manure applications and harvest events.
  - Well Avg: Irrigation source representing the average nutrient values of all irrigation wells sampled for the facility during the reporting year.
- \*\* Book Value: No sample data results were available. For manure applications and plant tissue harvests, the calculations were based off book values.

## David Vander Schaaf Dairy 2023 Nutrient Applications (Attachment B)

### FIELD NITROGEN RATIO Calculation:

"Field Nitrogen Ratio" = "Total Nitrogen Applied to Field" / "Total Nitrogen Extracted from Field at Harvest"

### ATMOSHERIC DEPOSITION Applied (Lbs) Calculation:

"Nitrogen Applied (Lbs)" = "14 Lbs (per year) \* "Acres Planted"

### HARVEST Nitrogen Extraction (Lbs) Calculation:

"Nitrogen Extracted (Lbs)" = ("Yield" (tons per acre) \* 2000) \* ((100 - "% Moisture") / 100 \* "Lab Sample Data Nitrogen Value" / 100) \* "Acres Planted"

### IRRIGATION Nitrogen and Salts Applied (Lbs) Calculations:

"Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data Nitrogen Value" \* 0.000001) \* "Acres Planted"

"Salts Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data TDS Value" \* 0.000001) \* "Acres Planted"

### PROCESS WASTEWATER Nitrogen, Phosphorus, Potassium and Salts Applied (Lbs) Calculations:

Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data Nitrogen Value" \* 0.000001) \* "Acres Planted"

Phosphorus Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data Phosphorus Value" \* 0.000001) \* "Acres Planted"

Potassium Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data Potassium Value" \* 0.000001) \* "Acres Planted"

Salt Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ("Lab Sample Data TDS Value" \* 0.000001) \* "Acres Planted"

### SOLID MANURE (Corral, Separator, or Compost) Nitrogen, Phosphorus, Potassium and Salts Applied (Lbs) Calculations:

Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ((100 - "% Moisture")/100 \* "Lab Sample Data Nitrogen Value"/100) \* "Acres Planted"

Phosphorus Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ((100 - "% Moisture")/100 \* "Lab Sample Data Phosphorus Value"/100) \* "Acres Planted"

Potassium Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ((100 - "% Moisture")/100 \* "Lab Sample Data Potassium Value"/100) \* "Acres Planted"

Salt Applied (Lbs)" = "Lbs Applied per Acre" (see below) \* ((100 - "% Moisture")/100 \* "Lab Sample Data Ash Value"/100) \* "Acres Planted"

### "Lbs Applied per Acre" Calculations:

If "Application Units" = Tons, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) \* 2000

If "Application Units" = Acres Inches, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) \* 8.33 \*27,154.3

If "Application Units" = Acre Feet, Then Lbs Applied per Acre" = "Application Amount" (per Acre) \* 8.33 \* 325,851

If "Application Units" = Gallons, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) \* 8.33

**David Vander Schaaf Dairy 2023**  
**Estimated Manure and Process Wastewater/Nutrients Transferred Off-Site (Attachment C)**

**A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE**

| Total Manure Exported (tons)* | Total Nitrogen Exported (lbs)** | Total Phosphorus Exported (lbs)** | Total Potassium Exported (lbs)** | Total Salts Exported (lbs)** |
|-------------------------------|---------------------------------|-----------------------------------|----------------------------------|------------------------------|
|-------------------------------|---------------------------------|-----------------------------------|----------------------------------|------------------------------|

\* The Total Manure (tons) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.

\*\* Total (N, P, K, Salts) (lbs) = Sum of (N, P, K, Salts) for each manure export event based on (Manure(tons) x 2000lb/ton) x ((100-moisture%)/100) x (N, P, K, and Ash) Concentration (% dry weight) / 100 using the samples closest in date to the export event.

**B. ESTIMATED TOTAL PROCESS WASTEWATER TRANSFERRED OFFSITE**

| Total Process Wastewater Exported (gal)* | Total Nitrogen Exported (lbs)** | Total Phosphorus Exported (lbs)** | Total Potassium Exported (lbs)** | Total TDS Exported (lbs)** |
|--|---------------------------------|-----------------------------------|----------------------------------|----------------------------|
|--|---------------------------------|-----------------------------------|----------------------------------|----------------------------|

\* The Total Manure (gals) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.

\*\* Total (Nitrogen, Phosphorus, Potassium, TDS) (lbs) = Sum of (Nitrogen, Phosphorus, Potassium, TDS) for each wastewater export event based on (Process Wastewater(gals) x 8.33lb/gal) x (NO3-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.



**David Vander Schaaf Dairy 2023  
Land Application Area Description Technical Report (Attachment D)**

| Field Name | Assessor Parcel Number(s) | Acres | Type of Waste Applied |
|------------|---------------------------|-------|-----------------------|
| F1         | x174 x170 xx37 xxxx       | 38    | Process Wastewater    |
| F2         | x174 x170 xx37 xxxx       | 37    | Process Wastewater    |
| F3         | x174 x170 xx37 xxxx       | 51    | Process Wastewater    |
|            |                           |       | <b>126</b>            |

Production Area APN(s): x174 x170 xx37 xxxx



**David Vander Schaaf Dairy 2023  
Lab Results Summary (Attachment E)**

**Process Wastewater**

(mg/l/ppm unless noted otherwise)

|                  |              |          |        |          |                  |        |      |          |               | General Minerals |    |    |      |     |     |    |
|------------------|--------------|----------|--------|----------|------------------|--------|------|----------|---------------|------------------|----|----|------|-----|-----|----|
|                  | Sample Date: | TKN      | TP     | TK       | EC<br>(umhos/cm) | NH4N   | NO3N | TDS      | pH<br>(units) | CA               | MG | NA | HCO3 | CO3 | SO4 | CL |
| Exc              | 03/28/2023   | 2,400.00 | 924.00 | 1,650.00 | 9,880            | 737.00 |      | 6,560.00 |               |                  |    |    |      |     |     |    |
|                  | 06/13/2023   | 833.00   | 269.00 | 1,470.00 | 11,600           | 788.00 | 0.01 | 7,730.00 | 7.69          |                  |    |    |      |     |     |    |
|                  | 08/04/2023   | 395.00   | 23.30  | 859.00   | 8,750            | 336.00 |      | 5,810.00 |               |                  |    |    |      |     |     |    |
|                  | 11/07/2023   | 476.00   | 28.90  | 966.00   | 7,460            | 472.00 |      | 4,950.00 |               |                  |    |    |      |     |     |    |
| <b>Averages:</b> |              | 1,026.00 | 311.30 | 1,236.25 | 9,422            | 583.25 | 0.01 | 6,262.50 | 7.69          |                  |    |    |      |     |     |    |

**Manure - Corral Solids**

(Dry Weight Basis)

| Sample Date:     | TN   | TP   | TK   | Moisture | Ash | CA | MG | NA | S | CL |
|------------------|------|------|------|----------|-----|----|----|----|---|----|
| 06/13/2023       | 2.76 | 0.62 | 4.22 | 26.10    |     |    |    |    |   | %  |
| 11/07/2023       | 3.29 | 0.92 | 3.56 | 40.30    |     |    |    |    |   | %  |
| <b>Averages:</b> | 3.02 | 0.77 | 3.89 | 33.20    |     |    |    |    |   |    |

**Plant Tissue**

(Dry Weight Basis)

| Field: | Crop #: | Crop  | Sample Date: | TN<br>(lbs/ton) | TP<br>(lbs/ton) | TK<br>(lbs/ton) | Moisture<br>(%) | Ash<br>(%) |
|--------|---------|-------|--------------|-----------------|-----------------|-----------------|-----------------|------------|
| F1     | 1       | Wheat | 05/24/2023   | 28.20           | 5.60            | 40.00           | 50.60           | 8.34       |
| F1     | 2       | Corn  |              | 8.40            | 1.60            | 6.80            |                 | BV-W       |

## David Vander Schaaf Dairy 2023 Lab Results Summary (Attachment E)

### **Plant Tissue**

(Dry Weight Basis)

| Field: | Crop #: | Crop  | Sample Date: | TN<br>(lbs/ton) | TP<br>(lbs/ton) | TK<br>(lbs/ton) | Moisture<br>(%) | Ash<br>(%) |
|--------|---------|-------|--------------|-----------------|-----------------|-----------------|-----------------|------------|
| F2     | 1       | Wheat | 05/24/2023   | 27.60           | 5.62            | 44.00           | 46.30           | 8.47       |
| F2     | 2       | Corn  |              | 8.40            | 1.60            | 6.80            |                 | BV-W       |
| F3     | 1       | Wheat | 05/24/2023   | 26.40           | 5.66            | 45.40           | 41.10           | 8.21       |
| F3     | 2       | Corn  |              | 8.40            | 1.60            | 6.80            |                 | BV-W       |

BV-W: Book Value from Western Fertilizer Handbook, 9th Edition, Table 4-1 (As Received basis)

### **Well / Irrigation Water**

(mg/l/ppm unless noted otherwise)

|                   | Sample Date: | NO3N | TP<br>(umhos/cm) | EC<br>(umhos/cm) | NH4N * | TDS  | TN             | General Minerals |       |        |      |       |       |
|-------------------|--------------|------|------------------|------------------|--------|------|----------------|------------------|-------|--------|------|-------|-------|
|                   |              |      |                  |                  |        |      |                | CA               | MG    | NA     | HCO3 | CO3   | SO4   |
| <b>Domestic</b>   |              |      |                  |                  |        |      |                |                  |       |        |      |       |       |
| W1                | 12/06/2023   | 0.40 | 429              |                  | 260.00 |      | 36.00          | 7.00             | 41.00 | 200.00 | 0.00 | 11.40 | 18.00 |
| <b>Averages:</b>  |              | 0.40 | 429              |                  | 260.00 |      | 36.00          | 7.00             | 41.00 | 200.00 | 0.00 | 11.40 | 18.00 |
| <b>Irrigation</b> |              |      |                  |                  |        |      |                |                  |       |        |      |       |       |
| W2                |              |      |                  |                  |        |      | Out of Service |                  |       |        |      |       |       |
| W3                | 12/06/2023   | 0.50 | 409              |                  | 260.00 | 0.50 | 28.00          | 6.00             | 46.00 | 170.00 | 0.00 | 14.20 | 20.00 |
| <b>Averages:</b>  |              | 0.50 | 409              |                  | 260.00 | 0.50 | 28.00          | 6.00             | 46.00 | 170.00 | 0.00 | 14.20 | 20.00 |

\* NH4N was non-detectable unless a value is shown



## David Vander Schaaf Dairy 2023

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Exc = Samples shown on Attachment E that were excluded from the nutrient application calculations in Attachment B because they were anomalies

**David Vander Schaaf Dairy 2023**  
**Planting and Harvest Information (Attachment F)**

| Crop #    | Crop    | Acres Planted | Plant Date | Harvest Date | Estimated Yield (tons) | Tons Harvested | Actual Yield |
|-----------|---------|---------------|------------|--------------|------------------------|----------------|--------------|
| Field: F1 |         |               |            |              |                        |                |              |
|           | 1 Wheat | 38            | 12/20/2022 | 05/24/2023   | 21.0                   | 790.4          | 20.8         |
|           | 2 Corn  | 38            | 07/06/2023 | 10/05/2023   | 29.3                   | 1128.6         | 29.7         |
| Field: F2 |         |               |            |              |                        |                |              |
|           | 1 Wheat | 37            | 12/20/2022 | 05/24/2023   | 20.7                   | 777.0          | 21.0         |
|           | 2 Corn  | 37            | 07/06/2023 | 10/05/2023   | 28.0                   | 1080.4         | 29.2         |
| Field: F3 |         |               |            |              |                        |                |              |
|           | 1 Wheat | 51            | 12/20/2022 | 05/24/2023   | 20.0                   | 989.4          | 19.4         |
|           | 2 Corn  | 51            | 07/06/2023 | 10/05/2023   | 28.1                   | 1448.4         | 28.4         |



# David Vander Schaaf Dairy 2023

## Weather Data (Attachment G)

| Day | January | February | March | April | May   | June  | July | August | September | October | November | December |
|-----|---------|----------|-------|-------|-------|-------|------|--------|-----------|---------|----------|----------|
| 1   | Light   | None     | Light | None  | None  | None  | None | Light  | None      | None    | None     | None     |
| 2   | Light   | None     | None  | None  | None  | None  | None | None   | None      | Light   | None     | None     |
| 3   | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | Light    | None     |
| 4   | None    | None     | None  | None  | Light | None  | None | None   | None      | None    | None     | None     |
| 5   | Light   | Light    | Light | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 6   | None    | Light    | None  | None  | None  | Light | None | None   | None      | None    | None     | None     |
| 7   | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 8   | Light   | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 9   | Heavy   | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 10  | Light   | None     | Heavy | None  | None  | None  | None | None   | None      | Light   | None     | None     |
| 11  | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 12  | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 13  | None    | None     | None  | None  | None  | None  | None | Heavy  | None      | None    | None     | None     |
| 14  | Light   | None     | Light | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 15  | Light   | None     | SWP   | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 16  | Heavy   | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 17  | None    | None     | None  | None  | None  | None  | None | None   | None      | Light   | None     | None     |
| 18  | None    | None     | None  | None  | None  | None  | None | None   | None      | Light   | None     | Light    |
| 19  | Light   | None     | Light | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 20  | None    | None     | None  | None  | None  | None  | None | SWP    | None      | None    | None     | Light    |
| 21  | None    | None     | Light | None  | None  | None  | None | None   | Light     | None    | None     | Light    |
| 22  | None    | Light    | None  | None  | None  | None  | None | None   | None      | None    | None     | Light    |
| 23  | None    | Light    | Light | None  | None  | None  | None | None   | None      | SWP     | None     | None     |
| 24  | None    | SWP      | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 25  | None    | SWP      | None  | None  | None  | None  | None | None   | Light     | None    | None     | None     |
| 26  | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 27  | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 28  | None    | None     | None  | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 29  | Light   |          | Heavy | None  | None  | None  | None | None   | None      | None    | None     | None     |
| 30  | None    |          | Light | None  | None  | None  | None | None   | None      | None    | Heavy    | Light    |
| 31  | None    |          | None  |       | None  |       | None | None   | None      | None    |          | None     |

\*Note: SWP = Standing Water Present



January 2, 2024

**Lab No.** : VI 2348281**Customer No.** : 4018573**Reference** : 42138

**Innovative Ag Services, LLC**  
 1201 Delta View Road  
 Suite 5  
 Hanford, CA 93230

### Laboratory Report

**Introduction:** This report package contains a total of 7 pages divided into 3 sections:

- |                 |           |   |
|-----------------|-----------|---|
| Case Narrative  | (1 page)  | : An overview of the work performed at FGL. |
| Sample Results  | (2 pages) | : Results for each sample submitted.        |
| Quality Control | (4 pages) | : Supporting Quality Control (QC) results.  |

### Case Narrative

This Case Narrative pertains to the following samples:

| Sample Description | Date Sampled | Date Received | FGL Lab No.    | Matrix |
|--------------------|--------------|---------------|----------------|--------|
| W1                 | 12/06/2023   | 12/06/2023    | VI 2348281-001 | DW     |
| W3                 | 12/06/2023   | 12/06/2023    | VI 2348281-002 | AGW    |

### Sampling and Receipt Information:

All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the associated Chain of Custody and Condition Upon Receipt Form.

**Quality Control:** All samples were prepared and analyzed according to established quality control criteria. Any exceptions are noted in the Quality Control Section of this report.

### Test Summary

|             |   |
|-------------|---|
| EPA 200.7   | Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573) |
| EPA 300.0   | Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573) |
| EPA 351.2   | Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573) |
| SM 2540 C   | Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573) |
| SM 4500-H+B | Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573) |

**Certification:** I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above and in the QC Section. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. This report shall not be reproduced except in full, without the written approval of the laboratory.

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.  
 Title: Laboratory Director  
 Date: 2024-01-02

Section: Case Narrative

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| Corporate Offices & Laboratory<br>853 Corporation Street<br>Santa Paula, CA 93060<br>TEL: (805)392-2000<br>Env FAX: (805)525-4172 / Ag FAX: (805)392-2063<br>CA ELAP Certification No. 1573 | Office & Laboratory<br>2500 Stagecoach Road<br>Stockton, CA 95215<br>TEL: (209)942-0182<br>FAX: (209)942-0423<br>CA ELAP Certification No. 1563 | Office & Laboratory<br>563 E. Lido Avenue<br>Chico, CA 95926<br>TEL: (530)343-5818<br>FAX: (530)343-3807<br>CA ELAP Certification No. 2670 | Office & Laboratory<br>3442 Empressa Drive, Suite D<br>San Luis Obispo, CA 93401<br>TEL: (805)783-2940<br>FAX: (805)783-2912<br>CA ELAP Certification No. 2775 | Office & Laboratory<br>9415 W. Goshen Avenue<br>Visalia, CA 93291<br>TEL: (559)734-9473<br>FAX: (559)734-8435<br>CA ELAP Certification No. 2810 |
|---|---|--|--|---|
|---|---|--|--|---|



January 2, 2024

**Innovative Ag Services, LLC**  
 1201 Delta View Road  
 Suite 5  
 Hanford, CA 93230

Description : W1  
 Project : 0054 David Vander Schaaf Dairy

Lab No. : VI 2348281-001  
 Customer No.: 4018573  
 Reference : 42138  
 Sampled On : December 6, 2023 at 09:45  
 Sampled By : Zeke  
 Received On : December 6, 2023 at 15:56  
 Matrix : Drinking Water

### Sample Results - Inorganic

| Constituent                        | Result | RL   | Units    | MCL/AL            | Dil. | DQF | Sample Preparation |       |     | Sample Analysis |            |       |     |
|------------------------------------|--------|------|----------|-------------------|------|-----|--------------------|-------|-----|-----------------|------------|-------|-----|
|                                    |        |      |          |                   |      |     | Date               | Time  | Who | Method          | Date       | Time  | Who |
| <b>Dairy Analysis</b>              |        |      |          |                   |      |     |                    |       |     |                 |            |       |     |
| Alkalinity (as CaCO <sub>3</sub> ) | 160    | 10   | mg/L     |                   | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:23 | amm |
| Bicarbonate                        | 200    | 10   | mg/L     |                   | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:23 | amm |
| Carbonate                          | ND     | 10   | mg/L     |                   | 1    | U   | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:23 | amm |
| Hydroxide                          | ND     | 10   | mg/L     |                   | 1    | U   | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:23 | amm |
| Chloride                           | 18     | 1    | mg/L     | 500 <sup>2</sup>  | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 13:05 | ldm |
| Nitrate Nitrogen                   | 0.4    | 0.1  | mg/L     | 10                | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 13:05 | ldm |
| Conductivity                       | 429    | 1    | umhos/cm | 1600 <sup>2</sup> | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:23 | amm |
| Sulfate Sulfur                     | 11.4   | 0.17 | mg/L     |                   | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 13:05 | ldm |
| Solids, Total Dissolved (TDS)      | 260    | 20   | mg/L     | 1000 <sup>2</sup> | 1    |     | 12/08/2023         | 12:30 | ctl | SM 2540 C       | 12/11/2023 | 11:30 | ctl |
| Calcium                            | 36     | 1    | mg/L     |                   | 1    | h   | 12/20/2023         | 07:00 | ac  | EPA 200.7       | 12/20/2023 | 18:28 | ac  |
| Magnesium                          | 7      | 1    | mg/L     |                   | 1    |     | 12/20/2023         | 07:00 | ac  | EPA 200.7       | 12/20/2023 | 18:28 | ac  |
| Potassium                          | 3      | 1    | mg/L     |                   | 1    |     | 12/20/2023         | 07:00 | ac  | EPA 200.7       | 12/20/2023 | 18:28 | ac  |
| Sodium                             | 41     | 1    | mg/L     |                   | 1    | hl  | 12/20/2023         | 07:00 | ac  | EPA 200.7       | 12/20/2023 | 18:28 | ac  |

## DQF Flags Definition:

- U Constituent results were non-detect.
- h The MS/MSD did not meet QC criteria.
- l The MS/MSD did not meet QC criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.



January 2, 2024

**Innovative Ag Services, LLC**

1201 Delta View Road  
Suite 5  
Hanford, CA 93230

Description : W3

Project : 0054 David Vander Schaaf Dairy

Lab No. : VI 2348281-002

Customer No.: 4018573

Reference : 42138

Sampled On : December 6, 2023 at 09:55

Sampled By : Zeke

Received On : December 6, 2023 at 15:56

Matrix : Ag Water

**Sample Results - Inorganic**

| Constituent                        | Result | RL   | Units    | Note | Dil. | DQF | Sample Preparation |       |     | Sample Analysis |            |       |     |
|------------------------------------|--------|------|----------|------|------|-----|--------------------|-------|-----|-----------------|------------|-------|-----|
|                                    |        |      |          |      |      |     | Date               | Time  | Who | Method          | Date       | Time  | Who |
| <b>Dairy Analysis</b>              |        |      |          |      |      |     |                    |       |     |                 |            |       |     |
| Alkalinity (as CaCO <sub>3</sub> ) | 140    | 10   | mg/L     |      | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:42 | amm |
| Bicarbonate                        | 170    | 10   | mg/L     |      | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:42 | amm |
| Carbonate                          | ND     | 10   | mg/L     |      | 1    | U   | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:42 | amm |
| Hydroxide                          | ND     | 10   | mg/L     |      | 1    | U   | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:42 | amm |
| Chloride                           | 20     | 1    | mg/L     |      | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 12:44 | ldm |
| Nitrogen, Total Kjeldahl           | ND     | 0.5  | mg/L     |      | 1    | UL  | 12/19/2023         | 05:12 | lcr | EPA 351.2       | 12/23/2023 | 19:56 | lcr |
| Nitrate Nitrogen                   | 0.5    | 0.1  | mg/L     |      | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 12:44 | ldm |
| Nitrogen, Total as Nitrogen        | 0.5    | 0.5  | mg/L     |      | 1    | UL  | 12/19/2023         | 05:12 | lcr | Calc.           | 12/23/2023 | 19:56 | lcr |
| Nitrate + Nitrite as N             | 0.5    | 0.1  | mg/L     |      | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 12:44 | ldm |
| Kjeldahl Nitrogen                  | ND     | 0.5  | mg/L     |      | 1    | UL  | 12/19/2023         | 05:12 | lcr | EPA 351.2       | 12/23/2023 | 19:56 | lcr |
| Conductivity                       | 409    | 1    | umhos/cm |      | 1    |     | 12/10/2023         | 16:08 | amm | SM 4500-H+B     | 12/11/2023 | 04:42 | amm |
| Sulfate Sulfur                     | 14.2   | 0.17 | mg/L     |      | 1    |     | 12/07/2023         | 11:23 | ldm | EPA 300.0       | 12/08/2023 | 12:44 | ldm |
| Solids, Total Dissolved (TDS)      | 260    | 20   | mg/L     |      | 1    |     | 12/08/2023         | 12:30 | ctl | SM 2540 C       | 12/11/2023 | 11:30 | ctl |
| Calcium                            | 28     | 1    | mg/L     |      | 1    |     | 12/07/2023         | 07:15 | ejc | EPA 200.7       | 12/08/2023 | 17:54 | ac  |
| Magnesium                          | 6      | 1    | mg/L     |      | 1    |     | 12/07/2023         | 07:15 | ejc | EPA 200.7       | 12/08/2023 | 17:54 | ac  |
| Sodium                             | 46     | 1    | mg/L     |      | 1    |     | 12/07/2023         | 07:15 | ejc | EPA 200.7       | 12/08/2023 | 17:54 | ac  |

## DQF Flags Definition:

U Constituent results were non-detect.

1 The MS/MSD did not meet QC criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution



January 2, 2024  
**Innovative Ag Services, LLC**

Lab No. : VI 2348281  
 Customer No. : 4018573

### Quality Control - Metals

| Constituent   | Method | Date/ID                                  | Type   | Units  | Conc.  | QC Data                                       | DQO   | Note |
|---------------|--------|--|--|--|--|---|---|------|
| <b>Metals</b> |        |  |  |  |  |   |   |      |
| Calcium       | 200.7  | 12/07/2023:213816EJC<br>(CC 2384296-004) | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>(CC 2384296-005) | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L         | 12.00<br>12.00<br>12.00<br>12.00<br>12.00          | ND<br>97.4%<br>88.8%<br>106%<br>1.7%          | <1<br>85-115<br>75-125<br>75-125<br>≤20.0           |      |
|               | 200.7  | 12/20/2023:214322AC<br>(VI 2348243-001)  | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>(VI 2348281-001) | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L         | 12.00<br>12.00<br>12.00<br>12.00<br>12.00          | ND<br>102%<br>135%<br>108%<br>4.0%            | <1<br>85-115<br>≤¼<br>75-125<br>≤20.0               | 406  |
|               | 200.7  | 12/07/2023:213816EJC<br>(CC 2384296-004) | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>(CC 2384296-005) | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L         | 12.00<br>12.00<br>12.00<br>12.00<br>12.00          | ND<br>98.5%<br>69.5%<br>101%<br>2.9%          | <1<br>85-115<br>≤¼<br>75-125<br>≤20                 |      |
|               | 200.7  | 12/20/2023:214322AC<br>(VI 2348243-001)  | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>(VI 2348281-001) | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L         | 12.00<br>12.00<br>12.00<br>12.00<br>12.00          | ND<br>98.7%<br>102%<br>95.7%<br>5.1%          | <1<br>85-115<br>75-125<br>75-125<br>≤20             |      |
| Potassium     | 200.7  | 12/20/2023:214322AC<br>(VI 2348243-001)  | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>(VI 2348281-001) | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L         | 12.00<br>12.00<br>12.00<br>12.00<br>12.00          | ND<br>101%<br>105%<br>100%<br>4.9%            | <1<br>85-115<br>75-125<br>75-125<br>≤20.0           |      |
| Sodium        | 200.7  | 12/07/2023:213816EJC<br>(CC 2384296-004) | Blank<br>LCS<br>MS<br>MSD<br>MSRPD<br>MS               | mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L<br>mg/L | 12.00<br>12.00<br>12.00<br>12.00<br>12.00<br>12.00 | ND<br>96.4%<br>87.7%<br>101%<br>2.4%<br>89.4% | <1<br>85-115<br>75-125<br>75-125<br>≤20.0<br>75-125 |      |

January 2, 2024  
**Innovative Ag Services, LLC**

Lab No. : VI 2348281  
Customer No. : 4018573

### Quality Control - Metals

| Constituent | Method | Date/ID             | Type  | Units | Conc. | QC Data | DQO             | Note |
|-------------|--------|---------------------|-------|-------|-------|---------|-----------------|------|
|             |        | (CC 2384296-005)    | MSD   | mg/L  | 12.00 | 75.8%   | 75-125          |      |
|             |        |                     | MSRPD | mg/L  |       | 2.2%    | ≤20.0           |      |
|             | 200.7  | 12/20/2023:214322AC | Blank | mg/L  |       | ND      | <1              |      |
|             |        |                     | LCS   | mg/L  | 12.00 | 95.8%   | 85-115          |      |
|             |        | (VI 2348243-001)    | MS    | mg/L  | 12.00 | 130%    | < $\frac{1}{4}$ | 406  |
|             |        |                     | MSD   | mg/L  | 12.00 | 91.8%   | 75-125          |      |
|             |        |                     | MSRPD | mg/L  |       | 4.4%    | ≤20.0           |      |
|             |        | (VI 2348281-001)    | MS    | mg/L  | 12.00 | 154%    | 75-125          | 435  |
|             |        |                     | MSD   | mg/L  | 12.00 | 69.1%   | 75-125          | 435  |
|             |        |                     | MSRPD | mg/L  |       | 18.5%   | ≤20.0           |      |

#### Definition

- < $\frac{1}{4}$  : High Sample Background - Spike concentration was less than one forth of the sample concentration.
- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

#### Explanation

- 406 : Matrix Spike (MS) not within the Acceptance Range (AR) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.
- 435 : Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

January 2, 2024  
**Innovative Ag Services, LLC**

Lab No. : VI 2348281  
Customer No. : 4018573

### Quality Control - Wet Chem

| Constituent              | Method | Date/ID              | Type  | Units    | Conc. | QC Data | DQO    | Note |
|--------------------------|--------|----------------------|-------|----------|-------|---------|--------|------|
| <b>Wet Chem</b>          |        |                      |       |          |       |         |        |      |
| Alkalinity (as CaCO3)    | 2320B  | (SP 2319949-001)     | Dup   | mg/L     |       | 0.2%    | 10     |      |
| Bicarbonate              | 2320B  | (SP 2319949-001)     | Dup   | mg/L     |       | 0.2%    | 10     |      |
| E. C.                    | 2320B  | (SP 2319949-001)     | Dup   | umhos/cm |       | 0.1%    | 5      |      |
| Solids, Total Dissolved  | 2540CE | 12/08/2023:213823CTL | Blank | mg/L     | 991.5 | ND      | <20    |      |
|                          |        |                      | LCS   | mg/L     |       | 102%    | 90-110 |      |
|                          |        | (CC 2384323-001)     | Dup   | mg/L     |       | 1.81%   | 5      |      |
|                          |        | (CC 2384323-001)     | Dup   | mg/L     |       | 0.9%    | 5      |      |
| Chloride                 | 300.0  | 12/07/2023:213946LDM | Blank | mg/L     |       | ND      | <1     |      |
|                          |        |                      | LCS   | mg/L     | 25.00 | 98.5%   | 90-110 |      |
|                          |        | (CH 2373985-001)     | MS    | mg/L     | 50.00 | 102%    | 67-117 |      |
|                          |        |                      | MSD   | mg/L     | 50.00 | 102%    | 67-117 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.0%    | ≤7     |      |
|                          |        |                      | MS    | mg/L     | 50.00 | 100%    | 67-117 |      |
|                          |        | (VI 2348252-001)     | MSD   | mg/L     | 50.00 | 101%    | 67-117 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.8%    | ≤7     |      |
| Nitrate + Nitrite as N   | 300.0  | 12/07/2023:213946LDM | Blank | mg/L     |       | ND      | <0.4   |      |
|                          |        |                      | LCS   | mg/L     | 20.00 | 96.6%   | 90-110 |      |
|                          |        | (CH 2373985-001)     | MS    | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        |                      | MSD   | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.1%    | ≤7     |      |
|                          |        |                      | MS    | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        | (VI 2348252-001)     | MSD   | mg/L     | 40.00 | 102%    | 86-112 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.9%    | ≤7     |      |
| Nitrate Nitrogen         | 300.0  | 12/07/2023:213946LDM | Blank | mg/L     |       | ND      | <0.4   |      |
|                          |        |                      | LCS   | mg/L     | 20.00 | 96.6%   | 90-110 |      |
|                          |        | (CH 2373985-001)     | MS    | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        |                      | MSD   | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.1%    | ≤7     |      |
|                          |        |                      | MS    | mg/L     | 40.00 | 101%    | 86-112 |      |
|                          |        | (VI 2348252-001)     | MSD   | mg/L     | 40.00 | 102%    | 86-112 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.9%    | ≤7     |      |
| Sulfate Sulfur           | 300.0  | 12/07/2023:213946LDM | Blank | mg/L     |       | ND      | <0.5   |      |
|                          |        |                      | LCS   | mg/L     | 50.00 | 99.8%   | 90-110 |      |
|                          |        | (CH 2373985-001)     | MS    | mg/L     | 100.0 | 103%    | 18-165 |      |
|                          |        |                      | MSD   | mg/L     | 100.0 | 103%    | 18-165 |      |
|                          |        |                      | MSRPD | mg/L     |       | 0.1%    | ≤7     |      |
|                          |        |                      | MS    | mg/L     | 100.0 | 102%    | 18-165 |      |
|                          |        | (VI 2348252-001)     | MSD   | mg/L     | 100.0 | 103%    | 18-165 |      |
|                          |        |                      | MSRPD | mg/L     |       | 1.0%    | ≤7     |      |
| Nitrogen, Total Kjeldahl | 351.2  | 12/19/2023:214307LCR | Blank | mg/L     |       | ND      | <0.5   |      |
|                          |        |                      | LCS   | mg/L     | 12.00 | 97.5%   | 73-124 |      |
|                          |        | (CH 2390336-007)     | MS    | mg/L     | 12.00 | 90.1%   | 90-110 |      |
|                          |        |                      | MSD   | mg/L     | 12.00 | 93.8%   | 90-110 |      |
|                          |        |                      | MSRPD | mg/L     |       | 4.0%    | ≤20    |      |
|                          |        |                      | MS    | mg/L     | 12.00 | 89.3%   | 90-110 | 435  |
|                          |        | (CH 2390336-010)     | MSD   | mg/L     | 12.00 | 88.8%   | 90-110 | 435  |
|                          |        |                      | MSRPD | mg/L     |       | 0.6%    | ≤20    |      |

**Definition**

Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.

Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.

LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.

MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.

MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.

MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.

**Explanation**

435 : Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.



# Laboratory Analysis Work Order

ID: # 00542848281

Nº 42138

SITE NAME: DAVID VANDEN SCHANFBilling: IAS

## ANALYSIS TO BE COMPLETED:

### Irrigation/Ground Water (ELAP Standards)

W1 EC, NO<sub>3</sub>N (Dom)W2 EC, NO<sub>3</sub>N, TDS, TN (Irr)W3 NH<sub>4</sub>-N (Ammonium)W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)

W8 Other: \_\_\_\_\_

*Q1 11-6-23 202401*

### Plant Tissue

P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, K (Mid Season - Wheat)

P2 TN, P, K (Mid-season - Corn)

P3 TN, TP, TK, Ash, %M (At Harvest)

P4 TN, %M

P5 % Moisture

P6 NIR

P7 Other: \_\_\_\_\_

| Sample ID | Description | Analysis | Date/Time         | Sampled by | IAS USE ONLY: FIELD TESTS |    |      |
|-----------|-------------|----------|-------------------|------------|---------------------------|----|------|
|           |             |          |                   |            | NH <sub>3</sub> N*        | pH | Temp |
| 1         | W1          | Dom      | W4<br>12-6 / 9:45 | Zake       |                           |    |      |
| 2         | W3          | Irr      | W5<br>12-6 / 9:55 | Zake       |                           |    |      |
| 3         |             |          |                   |            |                           |    |      |
| 4         |             |          |                   |            |                           |    |      |
| 5         |             |          |                   |            |                           |    |      |
| 6         |             |          |                   |            |                           |    |      |
| 7         |             |          |                   |            |                           |    |      |
| 8         |             |          |                   |            |                           |    |      |

\* Field Test of ammonium nitrogen may only be made by a trained technician. Positive test to be analyzed for ammonium nitrogen by the laboratory.

All samples are to follow the procedures noted in the Sampling &amp; Analysis Plan of the NMP and the RWQCB specifications. Any samples taken outside of these procedures shall provide the procedures on the notes below. Additionally, if any preservatives are used in the collections or processing of samples, please note below.

### NOTES:

### CHAIN OF CUSTODY RECORDING

|                 | Signature  | Company    | Received Date & Time | Relinquished Date & Time |
|-----------------|------------|------------|----------------------|--------------------------|
| 1 <sup>st</sup> | <u>EAS</u> | <u>IAS</u> |                      | 12-6-23 / 2:40           |
| 2 <sup>nd</sup> | <u>EMA</u> | <u>FCL</u> | 12/6/23 15:41        |                          |
| 3 <sup>rd</sup> | <u>EMA</u> | <u>FCL</u> |                      | 12/6/23 15:56            |
| 4 <sup>th</sup> | <u>DJF</u> |            | 12/6/23 15:56        |                          |

LABORATORY USE ONLY

Logged In By: ED

Total Samples: 10 Laboratory #: ED 1000  
*ED 1000*  
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