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INNOVATIVE
AG SERVICES

DeGroot Dairy North

2023 Annual Report

X	Report Form	NA	Attachment H
X	Attachment A	NA	Attachment I
X	Attachment B	NA	Attachment J
X	Attachment C	NA	Manure Tracking Manifests
X	Attachment D	NA	New or Revised Waste Water Agreements
X	Attachment E	X	Groundwater Monitoring Samples
X	Attachment F	NA	Monitoring Well Report
X	Attachment G	NA	Owner/Operator Change Form

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)

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Annual Report

DeGroot Dairy North 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	DeGroot Dairy North
Facility Address	2446 Grangeville Blvd, Hanford CA 93230

Owner/Operator as of 12/31/2023

Operator Name	Tony De Groot
Operator Phone	(559) 584-9363
Owner Name	Tony De Groot
Owner Phone	(559) 584-9363

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:

X No discharges occurred during the reporting period.

__ Yes. ____ Number of discharges occurred (see Attachment H).

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DeGroot Dairy North 2023

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:

X 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:

X 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.

X 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?

X 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.

X 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).

X 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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DeGroot Dairy North 2023

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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

X 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

X 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	DocuSigned by: Tony DeGroot E88A1C9D2E18467
Signature of Operator of Facility	Signature of Owner of Facility
Tony De Groot	Tony De Groot
Print Name	Print Name
	6/20/2024
Title and Date	Title and Date

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DeGroot Dairy North 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 Net (LB) Available for Land Application	PHOSPHORUS Net (LB) Available for Land Application	POTASSIUM Net (LB) Available for Land Application	SALTS Net (LB) Available for Land Application
Jer Milk Cows	1,589	1,549	Milk Freestall - SB	1,000	36,019.66	401,423.35	67,846.20	90,461.60	729,346.65
Jer Dry Cows	358	349	Flushed	1,100	4,602.22	45,858.60	6,369.25	30,572.40	63,692.50
Jer Heifers (15-24)	449	437	Dry Scrape	700	4,130.97	60,611.90	9,570.30	28,710.90	113,248.55
Jer Heifers (7-14)	1,006	980	Dry Scrape	600	8,942.03	93,002.00	14,308.00	53,655.00	118,041.00
	3,402	**3,315**			**53,694.88**	**600,895.85**	**98,093.75**	**203,399.90**	**1,024,328.70**

* 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)**
51,143,495	269.25	44.32	258.30	2,330.75	114,707.32	18,883.57	110,042.34	992,958.50

* 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).

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 15

Corn, 18 Acres Planted on 05/23/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
11/01/2022	Ground Water: Well Avg	3.90	Acre Inches		7.76			mg/L			123	0	0	6,383	
11/01/2022	Waste Water: Main Lagoon	1.93	Acre Inches		239.00	51.00	334.00	mg/L		943,340	1,878	401	2,625	35,125	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			252				
05/01/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			80	0	0	4,762	
06/06/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			720	0	0	0	
06/06/2023	Ground Water: Well Avg	4.45	Acre Inches		4.60			mg/L			83	0	0	4,928	
06/17/2023	Ground Water: Well Avg	4.90	Acre Inches		4.60			mg/L			92	0	0	5,426	
06/27/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			80	0	0	4,762	
07/04/2023	Ground Water: Well Avg	3.00	Acre Inches		4.60			mg/L			56	0	0	3,322	
07/12/2023	Ground Water: Well Avg	3.00	Acre Inches		4.60			mg/L			56	0	0	3,322	
07/19/2023	Ground Water: Well Avg	3.00	Acre Inches		4.60			mg/L			56	0	0	3,322	
07/27/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			720	0	0	0	
07/27/2023	Ground Water: Well Avg	4.10	Acre Inches		4.60			mg/L			77	0	0	4,540	
08/03/2023	Ground Water: Well Avg	3.00	Acre Inches		4.60			mg/L			56	0	0	3,322	
08/31/2023	Harvest	27.25	Tons	68.00	1.07	0.31	1.33	%							3,359
	Acre Inches Applied:	**39.88**						**Totals:**		**943,340**	**4,330**	**401**	**2,625**	**79,218**	**3,359**
Season Nitrogen Ratio:	1.29							**Lbs Per Acre:**			**241**	**22**	**146**	**4,401**	**187**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 16

Corn, 55 Acres Planted on 04/07/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
11/01/2022	Ground Water: Well Avg	4.00	Acre Inches		7.76			mg/L			386	0	0	20,005	
11/01/2022	Waste Water: Main Lagoon	1.93	Acre Inches		239.00	51.00	334.00	mg/L		2,882,429	5,739	1,224	8,020	107,328	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			770				
05/02/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			229	0	0	13,536	
05/23/2023	Ground Water: Well Avg	4.35	Acre Inches		4.60			mg/L			249	0	0	14,720	
06/09/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			229	0	0	13,536	
06/19/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			2,199	0	0	0	
06/19/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			257	0	0	15,227	
07/08/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			246	0	0	14,551	
07/13/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			246	0	0	14,551	
07/20/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			240	0	0	14,213	
07/31/2023	Harvest	27.25	Tons	64.00	0.99	0.32	1.41	%							10,662
	Acre Inches Applied:	**35.58**						**Totals:**		**2,882,429**	**10,790**	**1,224**	**8,020**	**227,664**	**10,662**
Season Nitrogen Ratio:	1.01							**Lbs Per Acre:**			**196**	**22**	**146**	**4,139**	**194**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 20

Alfalfa, 48 Acres Planted on 12/22/2020

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			672				
02/16/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			200	0	0	11,813	
03/15/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			210	0	0	12,404	
03/15/2023	Waste Water: Main Lagoon	1.00	Acre Inches		379.00	80.60	519.00	mg/L		1,303,406	4,115	875	5,635	43,104	
04/16/2023	Ground Water: Well Avg	4.25	Acre Inches		4.60			mg/L			212	0	0	12,551	
05/17/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			215	0	0	12,699	
06/18/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			225	0	0	13,289	
07/13/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			225	0	0	13,289	
08/11/2023	Ground Water: Well Avg	4.33	Acre Inches		4.60			mg/L			216	0	0	12,787	
09/16/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			210	0	0	12,404	
10/15/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			200	0	0	11,813	
11/20/2023	Harvest	12.68	Tons	8.48	3.05	0.30	1.83	%							33,979
	Acre Inches Applied:	**39.28**						**Totals:**		**1,303,406**	**6,698**	**875**	**5,635**	**156,153**	**33,979**
Season Nitrogen Ratio:	0.20							**Lbs Per Acre:**			**140**	**18**	**117**	**3,253**	**708**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 21

Alfalfa, 47 Acres Planted on 11/15/2020

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			658				
02/16/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			196	0	0	11,567	
02/16/2023	Waste Water: Main Lagoon	1.00	Acre Inches		379.00	80.60	519.00	mg/L		1,276,252	4,029	857	5,518	42,206	
03/15/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			196	0	0	11,567	
04/16/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			210	0	0	12,434	
05/17/2023	Ground Water: Well Avg	4.60	Acre Inches		4.60			mg/L			225	0	0	13,302	
06/18/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			220	0	0	13,012	
07/13/2023	Ground Water: Well Avg	4.60	Acre Inches		4.60			mg/L			225	0	0	13,302	
08/11/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			205	0	0	12,145	
09/16/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			205	0	0	12,145	
10/15/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			196	0	0	11,567	
11/20/2023	Harvest	11.67	Tons	8.23	3.44	0.30	1.71	%							34,631
	Acre Inches Applied:	**39.40**						**Totals:**		**1,276,252**	**6,565**	**857**	**5,518**	**153,247**	**34,631**
Season Nitrogen Ratio:	0.19							**Lbs Per Acre:**			**140**	**18**	**117**	**3,261**	**737**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 22

Wheat, 31 Acres Planted on 11/14/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
11/21/2022	Ground Water: Well Avg	5.15	Acre Inches		7.76			mg/L			280	0	0	14,517	
11/21/2022	Waste Water: Main Lagoon	1.95	Acre Inches		239.00	51.00	334.00	mg/L		1,641,477	3,268	698	4,567	61,121	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			434				
01/17/2023	Ground Water: Well Avg	5.20	Acre Inches		4.60			mg/L			168	0	0	9,918	
03/09/2023	Ground Water: Well Avg	5.30	Acre Inches		4.60			mg/L			171	0	0	10,108	
05/20/2023	Harvest	18.99	Tons	62.10	1.35	0.31	1.03	%							6,024
	Acre Inches Applied:	**17.60**						**Totals:**		**1,641,477**	**4,321**	**698**	**4,567**	**95,664**	**6,024**
Season Nitrogen Ratio:	0.72							**Lbs Per Acre:**			**139**	**22**	**147**	**3,086**	**194**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 22

Corn, 31 Acres Planted on 06/15/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
05/25/2023	Ground Water: Well Avg	4.90	Acre Inches		4.60			mg/L			158	0	0	9,346	
05/25/2023	Waste Water: Main Lagoon	1.43	Acre Inches		212.00	15.30	75.00	mg/L		1,203,750	2,126	153	752	10,830	
07/03/2023	Ground Water: Well Avg	4.75	Acre Inches		4.60			mg/L			153	0	0	9,059	
07/03/2023	Waste Water: Main Lagoon	1.40	Acre Inches		166.00	15.70	59.20	mg/L		1,178,497	1,630	154	581	8,079	
07/22/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			129	0	0	7,629	
07/22/2023	Waste Water: Main Lagoon	1.10	Acre Inches		166.00	15.70	59.20	mg/L		925,962	1,280	121	457	6,348	
08/04/2023	Ground Water: Well Avg	4.10	Acre Inches		4.60			mg/L			132	0	0	7,820	
08/13/2023	Ground Water: Well Avg	3.90	Acre Inches		4.60			mg/L			126	0	0	7,438	
08/21/2023	Ground Water: Well Avg	3.30	Acre Inches		4.60			mg/L			106	0	0	6,294	
08/21/2023	Waste Water: Main Lagoon	1.47	Acre Inches		166.00	15.70	59.20	mg/L		1,237,421	1,711	162	610	8,483	
08/29/2023	Ground Water: Well Avg	3.35	Acre Inches		4.60			mg/L			108	0	0	6,389	
09/08/2023	Ground Water: Well Avg	3.67	Acre Inches		4.60			mg/L			118	0	0	7,000	
09/08/2023	Waste Water: Main Lagoon	1.49	Acre Inches		166.00	15.70	59.20	mg/L		1,254,257	1,734	164	618	8,599	
10/16/2023	Harvest	31.49	Tons	69.70	1.17	0.27	1.77	%							6,921
	Acre Inches Applied:	**38.86**						**Totals:**		**5,799,887**	**9,513**	**755**	**3,018**	**103,314**	**6,921**
Season Nitrogen Ratio:	1.37							**Lbs Per Acre:**			**307**	**24**	**97**	**3,333**	**223**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 23

Corn, 28 Acres Planted on 04/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			392				
03/27/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			125	0	0	7,408	
04/28/2023	Fertilize - UN32	21.00	Gallons		32.00	0.00	0.00	%			1,567	0	0	0	
04/28/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			146	0	0	8,614	
05/16/2023	Ground Water: Well Avg	4.45	Acre Inches		4.60			mg/L			130	0	0	7,666	
05/16/2023	Waste Water: Main Lagoon	1.93	Acre Inches		212.00	15.30	75.00	mg/L		1,467,418	2,591	187	917	13,201	
05/29/2023	Ground Water: Well Avg	4.90	Acre Inches		4.60			mg/L			143	0	0	8,441	
06/18/2023	Ground Water: Well Avg	5.30	Acre Inches		4.60			mg/L			154	0	0	9,130	
06/27/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			1,119	0	0	0	
06/27/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			146	0	0	8,614	
07/06/2023	Ground Water: Well Avg	4.85	Acre Inches		4.60			mg/L			141	0	0	8,355	
07/15/2023	Ground Water: Well Avg	4.70	Acre Inches		4.60			mg/L			137	0	0	8,097	
08/08/2023	Harvest	36.32	Tons	73.30	0.95	0.25	1.50	%							5,159
	Acre Inches Applied:	**40.43**						**Totals:**		**1,467,418**	**6,792**	**187**	**917**	**79,526**	**5,159**
Season Nitrogen Ratio:	1.32							**Lbs Per Acre:**			**243**	**7**	**33**	**2,840**	**184**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 24

Wheat, 81 Acres Planted on 11/14/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
09/19/2022	Corral Solids: Main Corral	2.40	Tons	33.60	2.13	0.70	1.72	%	194		5,499	1,799	4,440	0	
11/23/2022	Ground Water: Well Avg	4.53	Acre Inches		7.76			mg/L			644	0	0	33,366	
11/23/2022	Waste Water: Main Lagoon	1.97	Acre Inches		239.00	51.00	334.00	mg/L		4,333,012	8,626	1,841	12,055	161,340	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,134				
02/01/2023	Ground Water: Well Avg	4.40	Acre Inches		4.60			mg/L			371	0	0	21,928	
05/21/2023	Harvest	28.11	Tons	68.40	1.36	0.41	1.96	%							19,570
	Acre Inches Applied:	**10.90**						**Totals:**	**194**	**4,333,012**	**16,275**	**3,640**	**16,496**	**216,633**	**19,570**
Season Nitrogen Ratio:	0.83							**Lbs Per Acre:**			**201**	**45**	**204**	**2,674**	**242**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 24

Corn, 81 Acres Planted on 06/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
05/31/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			362	0	0	21,429	
05/31/2023	Waste Water: Main Lagoon	1.97	Acre Inches		212.00	15.30	75.00	mg/L		4,333,012	7,652	552	2,707	38,981	
06/28/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			2,159	0	0	0	
06/28/2023	Ground Water: Well Avg	4.40	Acre Inches		4.60			mg/L			371	0	0	21,928	
07/05/2023	Ground Water: Well Avg	4.45	Acre Inches		4.60			mg/L			375	0	0	22,177	
07/16/2023	Ground Water: Well Avg	4.90	Acre Inches		4.60			mg/L			413	0	0	24,419	
07/26/2023	Ground Water: Well Avg	5.30	Acre Inches		4.60			mg/L			446	0	0	26,412	
07/26/2023	Waste Water: Main Lagoon	2.00	Acre Inches		166.00	15.70	59.20	mg/L		4,398,997	6,083	575	2,169	30,158	
08/04/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			421	0	0	24,918	
08/14/2023	Ground Water: Well Avg	4.85	Acre Inches		4.60			mg/L			409	0	0	24,170	
08/29/2023	Ground Water: Well Avg	4.70	Acre Inches		4.60			mg/L			396	0	0	23,423	
10/03/2023	Harvest	30.46	Tons	73.10	1.04	0.25	1.39	%							13,805
	Acre Inches Applied:	**41.87**						**Totals:**		**8,732,008**	**19,088**	**1,128**	**4,876**	**258,016**	**13,805**
Season Nitrogen Ratio:	1.38							**Lbs Per Acre:**			**236**	**14**	**60**	**3,185**	**170**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 27

Corn, 79 Acres Planted on 05/22/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,106				
04/06/2023	Corral Solids: Main Corral	4.00	Tons	18.60	2.14	0.76	1.14	%	316		11,009	3,926	5,865	0	
05/01/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			353	0	0	20,900	
06/05/2023	Fertilize - UN32	5.00	Gallons		32.00	0.00	0.00	%			1,053	0	0	0	
06/05/2023	Ground Water: Well Avg	4.45	Acre Inches		4.60			mg/L			366	0	0	21,629	
06/14/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			353	0	0	20,900	
06/14/2023	Waste Water: Main Lagoon	1.97	Acre Inches		212.00	15.30	75.00	mg/L		4,226,024	7,463	539	2,640	38,019	
06/21/2023	Ground Water: Well Avg	3.90	Acre Inches		4.60			mg/L			321	0	0	18,956	
06/29/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			329	0	0	19,442	
07/06/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			2,106	0	0	0	
07/06/2023	Ground Water: Well Avg	4.85	Acre Inches		4.60			mg/L			399	0	0	23,574	
07/14/2023	Ground Water: Well Avg	3.50	Acre Inches		4.60			mg/L			288	0	0	17,012	
07/23/2023	Ground Water: Well Avg	3.70	Acre Inches		4.60			mg/L			304	0	0	17,984	
08/01/2023	Ground Water: Well Avg	3.90	Acre Inches		4.60			mg/L			321	0	0	18,956	
09/04/2023	Harvest	33.36	Tons	70.50	1.23	0.26	1.59	%							19,125
	Acre Inches Applied:	**38.87**						**Totals:**	**316**	**4,226,024**	**25,771**	**4,464**	**8,505**	**217,372**	**19,125**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**326**	**57**	**108**	**2,752**	**242**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 28

Corn, 77 Acres Planted on 04/10/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,078				
03/28/2023	Corral Solids: Main Corral	3.00	Tons	18.60	2.14	0.76	1.14	%	231		8,048	2,869	4,287	0	
05/02/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			344	0	0	20,371	
06/07/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			360	0	0	21,318	
06/14/2023	Ground Water: Well Avg	5.20	Acre Inches		4.60			mg/L			417	0	0	24,635	
06/14/2023	Waste Water: Main Lagoon	1.50	Acre Inches		212.00	15.30	75.00	mg/L		3,136,322	5,539	400	1,960	28,216	
06/20/2023	Ground Water: Well Avg	4.90	Acre Inches		4.60			mg/L			393	0	0	23,213	
06/27/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			400	0	0	23,688	
07/05/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			2,053	0	0	0	
07/05/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			360	0	0	21,318	
07/13/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			344	0	0	20,371	
07/20/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			344	0	0	20,371	
08/04/2023	Harvest	31.76	Tons	71.90	1.08	0.27	1.18	%							14,843
	Acre Inches Applied:	**38.50**						**Totals:**	**231**	**3,136,322**	**19,680**	**3,269**	**6,247**	**203,501**	**14,843**
Season Nitrogen Ratio:	1.33							**Lbs Per Acre:**			**256**	**42**	**81**	**2,643**	**193**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 29

Corn, 70 Acres Planted on 04/10/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			980				
05/02/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			306	0	0	18,089	
06/07/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			328	0	0	19,380	
06/14/2023	Ground Water: Well Avg	4.80	Acre Inches		4.60			mg/L			349	0	0	20,672	
06/14/2023	Waste Water: Main Lagoon	1.90	Acre Inches		212.00	15.30	75.00	mg/L		3,611,522	6,378	461	2,256	32,490	
06/20/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			364	0	0	21,534	
06/27/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			1,866	0	0	0	
06/27/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			364	0	0	21,534	
07/05/2023	Fertilize - UN32	20.00	Gallons		32.00	0.00	0.00	%			3,732	0	0	0	
07/05/2023	Ground Water: Well Avg	4.60	Acre Inches		4.60			mg/L			335	0	0	19,811	
07/13/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			291	0	0	17,227	
07/20/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			291	0	0	17,227	
08/04/2023	Harvest	32.68	Tons	68.20	0.78	0.19	1.10	%							11,421
	Acre Inches Applied:	**38.00**						**Totals:**		**3,611,522**	**15,584**	**461**	**2,256**	**187,965**	**11,421**
Season Nitrogen Ratio:	1.36							**Lbs Per Acre:**			**223**	**7**	**32**	**2,685**	**163**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 30

Alfalfa, 80 Acres Planted on 12/23/2020

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,120				
02/18/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			333	0	0	19,688	
03/17/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			333	0	0	19,688	
03/17/2023	Waste Water: Main Lagoon	1.00	Acre Inches		379.00	80.60	519.00	mg/L		2,172,344	6,858	1,458	9,392	71,840	
04/18/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			374	0	0	22,149	
05/19/2023	Ground Water: Well Avg	4.60	Acre Inches		4.60			mg/L			383	0	0	22,642	
06/20/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			416	0	0	24,610	
07/15/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			416	0	0	24,610	
08/13/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			374	0	0	22,149	
09/18/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			350	0	0	20,673	
10/17/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			350	0	0	20,673	
11/20/2023	Harvest	11.85	Tons	8.42	3.60	0.32	1.90	%							62,509
	Acre Inches Applied:	**41.00**						**Totals:**		**2,172,344**	**11,307**	**1,458**	**9,392**	**268,722**	**62,509**
Season Nitrogen Ratio:	0.18							**Lbs Per Acre:**			**141**	**18**	**117**	**3,359**	**781**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 31

Alfalfa, 79 Acres Planted on 12/24/2020

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,106				
02/17/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			329	0	0	19,442	
02/17/2023	Waste Water: Main Lagoon	1.00	Acre Inches		379.00	80.60	519.00	mg/L		2,145,190	6,773	1,440	9,275	70,942	
03/16/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			345	0	0	20,414	
04/17/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			411	0	0	24,303	
05/18/2023	Ground Water: Well Avg	4.30	Acre Inches		4.60			mg/L			353	0	0	20,900	
06/19/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			411	0	0	24,303	
07/14/2023	Ground Water: Well Avg	4.50	Acre Inches		4.60			mg/L			370	0	0	21,872	
08/12/2023	Ground Water: Well Avg	4.40	Acre Inches		4.60			mg/L			362	0	0	21,386	
09/17/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			345	0	0	20,414	
10/16/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			345	0	0	20,414	
11/20/2023	Harvest	10.82	Tons	8.01	3.22	0.33	1.62	%							50,638
	Acre Inches Applied:	**40.80**						**Totals:**		**2,145,190**	**11,149**	**1,440**	**9,275**	**264,391**	**50,638**
Season Nitrogen Ratio:	0.22							**Lbs Per Acre:**			**141**	**18**	**117**	**3,347**	**641**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Field Name: 32

Corn, 80 Acres Planted on 04/29/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,120				
04/05/2023	Ground Water: Well Avg	4.10	Acre Inches		4.60			mg/L			342	0	0	20,180	
04/05/2023	Waste Water: Main Lagoon	1.97	Acre Inches		379.00	80.60	519.00	mg/L		4,279,518	13,510	2,874	18,502	141,524	
05/15/2023	Fertilize - UN32	3.00	Gallons		32.00	0.00	0.00	%			640	0	0	0	
05/15/2023	Ground Water: Well Avg	4.45	Acre Inches		4.60			mg/L			370	0	0	21,903	
05/29/2023	Ground Water: Well Avg	4.80	Acre Inches		4.60			mg/L			399	0	0	23,626	
06/09/2023	Ground Water: Well Avg	5.00	Acre Inches		4.60			mg/L			416	0	0	24,610	
06/16/2023	Ground Water: Well Avg	5.10	Acre Inches		4.60			mg/L			425	0	0	25,102	
06/16/2023	Waste Water: Main Lagoon	1.47	Acre Inches		212.00	15.30	75.00	mg/L		3,193,346	5,639	407	1,995	28,729	
06/24/2023	Ground Water: Well Avg	4.60	Acre Inches		4.60			mg/L			383	0	0	22,642	
07/11/2023	Ground Water: Well Avg	4.20	Acre Inches		4.60			mg/L			350	0	0	20,673	
07/19/2023	Ground Water: Well Avg	4.00	Acre Inches		4.60			mg/L			333	0	0	19,688	
08/17/2023	Harvest	34.33	Tons	69.00	1.01	0.27	1.26	%							17,198
	Acre Inches Applied:	**39.69**						**Totals:**		**7,472,863**	**23,927**	**3,281**	**20,497**	**348,677**	**17,198**
Season Nitrogen Ratio:	1.39							**Lbs Per Acre:**			**299**	**41**	**256**	**4,358**	**215**

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DeGroot Dairy North 2023

Nutrient Applications (Attachment B)

Summary of Nutrient Applications, Removal, and Balance

	Total N (Lbs)	Total P (Lbs)	Total K (Lbs)	Total Salts (Lbs)	Total Manure Applied	
Solid Manure	24,556.57	8,593.54	14,592.74	0.00	741.40	tons
Process Wastewater	104,623.66	15,542.94	93,250.00	986,662.41	51,143,494.79	gallons
Irrigation Water	31,853.73					
Fertilizer / Total Imports	19,934.45					
Atmospheric Deposition	10,822.00					
Total Nitrogen Applied	**191,790.41**					
Crop Nitrogen Removal	309,843.73					
Nitrogen Balance	**(118,053.32)**					
Nitrogen Ratio	**0.62**					

- **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.**

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DeGroot Dairy North 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

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DeGroot Dairy North 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 (N03-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

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DeGroot Dairy North 2023

Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
15	x014 x110 x052 x000	18	Process Wastewater
16	x014 x110 x035 x000	55	Process Wastewater
20	x014 x110 x035 x000	49	Process Wastewater
21	x014 x110 x035 x000	47	Process Wastewater
22	x014 x110 x052 x000	31	Process Wastewater
23	x014 x110 x052 x000	28	Process Wastewater
24	x014 x110 x044 x000	81	Both
27	x014 x110 x040 x000, x014 x110 x041 x000	79	Both
28	x014 x110 x042 x000	77	Both
29	x014 x110 x042 x000	70	Process Wastewater
30	x014 x110 x035 x000	83	Process Wastewater
31	x014 x110 x035 x000	79	Process Wastewater
32	x014 x110 x040 x000, x014 x110 x041 x000	80	Process Wastewater
		777	

Production Area APN(s): x014 x110 x052 x000

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DeGroot Dairy North 2023

Lab Results Summary (Attachment E)

Process Wastewater

(mgl/ppm unless noted otherwise)

Sample Date:	TKN	TP	TK	EC (umhos/cm)	NH4N	NO3N	TDS	pH (units)	General Minerals CA	MG	NA	HCO3	CO3	SO4	CL
03/09/2023	379.00	80.60	519.00	5,980	232.00		3,970.00								
06/16/2023	212.00	15.30	75.00	1,620	56.50	0.03	1,080.00	7.15							
07/14/2023	166.00	15.70	59.20	1,240	40.20		823.00								
11/09/2023	320.00	65.70	380.00	5,200	316.00		3,450.00								
Averages:	269.25	44.32	258.30	3,510	161.18	0.03	2,330.75	7.15							

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/08/2023	2.14	0.76	1.14	18.60						%
11/09/2023	1.88	0.55	1.06	52.80						%
Averages:	2.01	0.66	1.10	35.70						

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
15	1	Corn	08/31/2023	21.40	6.18	26.60	68.00	7.02
16	1	Corn	07/31/2023	19.76	6.42	28.20	64.00	6.77

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DeGroot Dairy North 2023

Lab Results Summary (Attachment E)

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
20	1	Alfalfa	11/20/2023	61.00	6.06	36.60	8.48	9.32
21	1	Alfalfa	11/20/2023	68.80	6.08	34.20	8.23	9.47
22	1	Wheat	05/20/2023	27.00	6.18	20.60	62.10	8.52
22	2	Corn	10/16/2023	23.40	5.44	35.40	69.70	7.93
23	1	Corn	10/03/2023	19.00	5.08	30.00	73.30	7.02
24	1	Wheat	05/21/2023	27.20	8.12	39.20	68.40	11.00
24	2	Corn	10/03/2023	20.80	5.04	27.80	73.10	6.31
27	1	Corn	09/04/2023	24.60	5.10	31.80	70.50	6.54
28	1	Corn	08/04/2023	21.60	5.46	23.60	71.90	5.70
29	1	Corn	08/04/2023	15.70	3.84	22.00	68.20	5.86
30	1	Alfalfa	11/20/2023	72.00	6.50	38.00	8.42	9.52
31	1	Alfalfa	11/20/2023	64.40	6.58	32.40	8.01	16.70
32	1	Corn	08/17/2023	20.20	5.44	25.20	69.00	6.65

Well / Irrigation Water

(mgl/ppm unless noted otherwise)

							General Minerals						
Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	CA	MG	NA	HCO3	CO3	SO4	CL

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DeGroot Dairy North 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mgl/ppm unless noted otherwise)

	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	General Minerals CA	MG	NA	HCO3	CO3	SO4	CL
Dairy														
ND4	12/11/2023	2.20		711										
ND5	08/21/2023	14.10		1,170										
ND2N	06/15/2023	1.20		587										
ND1S							Out of service							
	Averages:	5.83		823										
Irrigation														
16CTR	10/12/2023	13.00		638		390.00	13.00	38.00	1.00	86.00	80.00	0.00	15.70	92.00
16NE	08/24/2023	4.60		422		240.00	4.60							
16SE							Did not run.							
22NE							Out of service.							
23SW	10/11/2023	1.70		298		190.00	1.70	6.00	0.00	56.00	60.00	10.00	6.90	32.00
24NE							Out of service.							
28NW	09/12/2023	2.00		360		230.00	2.00	8.00	1.00	69.00	90.00	0.00	7.90	37.00
30NW	08/24/2023	1.70		519		310.00	1.70	17.00	1.00	86.00	100.00	0.00	12.90	75.00
31NE							Out of service.							
	Averages:	4.60		447		272.00	4.60	17.25	0.75	74.25	82.50	2.50	10.85	59.00

* NH4N was non-detectable unless a value is shown

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DeGroot Dairy North 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 15								
	1	Corn	18	05/23/2023	08/31/2023	30.5	490.5	27.2
Field: 16								
	1	Corn	55	04/07/2023	07/31/2023	29.2	1498.8	27.2
Field: 20								
	1	Alfalfa	48	12/22/2020	11/20/2023	11.1	608.6	12.7
Field: 21								
	1	Alfalfa	47	11/15/2020	11/20/2023	11.1	548.5	11.7
Field: 22								
	1	Wheat	31	11/14/2022	05/20/2023	23.7	588.7	19.0
	2	Corn	31	06/15/2023	10/16/2023	28.8	976.2	31.5
Field: 23								
	1	Corn	28	04/16/2023	08/08/2023	28.3	1017.0	36.3
Field: 24								
	1	Wheat	81	11/14/2022	05/21/2023	21.8	2276.9	28.1
	2	Corn	81	06/16/2023	10/03/2023	28.2	2467.3	30.5
Field: 27								
	1	Corn	79	05/22/2023	09/04/2023	26.9	2635.4	33.4
Field: 28								
	1	Corn	77	04/10/2023	08/04/2023	32.6	2445.5	31.8
Field: 29								
	1	Corn	70	04/10/2023	08/04/2023	29.2	2287.6	32.7
Field: 30								
	1	Alfalfa	80	12/23/2020	11/20/2023	11.1	948.0	11.8

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DeGroot Dairy North 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 31								
	1	Alfalfa	79	12/24/2020	11/20/2023	11.1	854.8	10.8
Field: 32								
	1	Corn	80	04/29/2023	08/17/2023	30.6	2746.4	34.3

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DeGroot Dairy North 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	None	None	None	None	None
2	Light	None	None	None	None	None	None	None	None	None	None	None
3	None	None	None	None	None	None	None	None	None	None	None	None
4	Light	None	None	None	Light	None	None	None	None	None	None	None
5	Heavy	Light	Light	None	None	None	None	None	None	None	None	None
6	None	None	None	None	None	None	None	None	None	None	None	None
7	None	None	None	None	None	SWP	None	None	None	None	None	None
8	None	None	None	None	None	None	None	None	None	None	None	None
9	SWP	None	Light	None	None	None	None	None	None	None	None	None
10	Light	None	SWP	None	None	None	None	None	None	None	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	None	None	None	None	None
14	Heavy	None	SWP	None	None	None	None	None	None	None	None	None
15	Light	None	Heavy	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	None	None	None
18	None	None	None	None	None	None	None	None	None	None	None	None
19	None	None	Light	None	None	None	None	Light	None	None	None	None
20	None	None	None	None	None	None	None	SWP	None	None	None	None
21	None	None	SWP	None	None	None	None	None	None	None	None	None
22	None	Light	Light	None	None	None	None	None	None	None	None	None
23	None	None	None	None	None	None	None	None	None	Heavy	None	None
24	None	SWP	None	None	None	None	None	None	None	None	None	None
25	None	SWP	None	None	None	None	None	None	None	None	None	None
26	None	None	None	None	None	None	None	None	None	None	None	None
27	None	Light	None	None	None	None	None	None	None	None	None	None
28	None	Heavy	Light	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	None	Light
31	None		None		None		None	None		None		None

*Note: SWP = Standing Water Present

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

June 27, 2023

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

Lab No. : **VI 2343834**
Customer No. : **4018573**
Reference : **40897**

Laboratory Report

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

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: 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
ND2N	06/15/2023	06/15/2023	VI 2343834-001	DW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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	
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	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: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-06-27

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

June 27, 2023

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

Description : ND2N
Project : 0057 DeGroot Dairy North

Lab No. : VI 2343834-001
Customer No. : 4018573
Reference : 40897
Sampled On : June 15, 2023 at 13:45
Sampled By : Henry
Received On : June 15, 2023 at 16:02
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
Dairy Analysis													
Nitrate Nitrogen	1.2	0.4	mg/L	10	1		06/16/2023	12:00	lfs	SM 4500-NO3 F	06/16/2023	14:00	lfs
Conductivity	587	1	umhos/cm	1600[2]	1		06/20/2023	15:13	amm	SM 4500-H+B	06/20/2023	16:12	amm

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

June 27, 2023
Innovative Ag Services, LLC

Lab No. : VI 2343834
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2343854-001)	Dup	umhos/cm		0.3%	5	
Nitrate Nitrogen	4500NO3F	06/16/2023:206652LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	96.2%	80-120	
			MS	mg/L	5.609	95.0%	66-125	
		(SP 2310065-001)	MSD	mg/L	5.609	96.2%	66-125	
			MSRPD	mg/L		0.9%	≤30.4	

Definition

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.

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 analyted. 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.

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Laboratory Analysis Work Order

Nº 40897

ID: #0057 2343834

LABORATORY: FGL

SITE NAME: De Groot North

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO_3N (Dom)
- W2 EC, NO_3N, TDS, TN (Irr)
- W3 NH_4-N (Ammonium)
- W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
- W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
- W6 NO_3N, NO_2 (Dom ILRP, Annually)
- W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
- W8 Other: _____

Plant Tissue

- P1 TN, NO_3N, PO_4P, 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: _____

Process Waste Water (lagoon)

- L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
- L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
- L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
- L4 Other: _____

Manure

- M1 TN, TP, TK, %M (2/year)
- M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
- M3 Other: _____

Soil

- S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
- S2 S1 + CEC, CaCO3, OM, C:N, TN
- S3 NO_3N, NH_4N
- S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	ND2N	Dom	W1	1:45 6/15	Henry	—		
2								
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 & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[signature]	IAS		2:00 6/15/23
2nd	AJB	FGL	6/15/23 1545	
3rd	AJB	FGL		6/15/23 1602
4th	[signature]		6/15/23 1602	

LABORATORY USE ONLY

Logged In By: GD Total Samples: 6/15/23 1730 Laboratory #: Gn Chemtrans Inc.

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 1, 2023

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

Lab No. : **VI 2345529**
Customer No. : **4018573**
Reference : **41199**

Laboratory Report

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

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: 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
ND5	08/21/2023	08/21/2023	VI 2345529-001	DW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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	
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	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: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-09-05

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

September 1, 2023

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

Description : ND5
Project : 0057 DeGroot Dairy North

Lab No. : VI 2345529-001
Customer No. : 4018573
Reference : 41199
Sampled On : August 21, 2023 at 09:40
Sampled By : Zeke
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	14.1	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	14:37	lfs
Conductivity	1170	1	umhos/cm	1600[2]	1		08/31/2023	11:57	krh	SM 4500-H+B	08/31/2023	16:44	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

September 1, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345529
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(STK2351584-002)	Dup	umhos/cm		0.3%	5	
Nitrate Nitrogen	4500NO3F	08/22/2023:209438LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.9%	80-120	
			MS	mg/L	5.609	97.4%	66-125	
		(CH 2376919-001)	MSD	mg/L	5.609	98.6%	66-125	
			MSRPD	mg/L		0.9%	≤30.4	

Definition

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.

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 analyted. 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.

Page 3 of 3

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Laboratory Analysis Work Order

Nº 41199

ID: # 0057 2345529

LABORATORY: FGL

SITE NAME: DeGroot Dairy North

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- (W1) EC, NO_3N (Dom)
- W2 EC, NO_3N, TDS, TN (Irr)
- W3 NH_4-N (Ammonium)
- W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
- W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
- W6 NO_3N, NO_2 (Dom ILRP, Annually)
- W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
- W8 Other: _____

Plant Tissue

- P1 TN, NO_3N, PO_4P, 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: _____

Process Waste Water (lagoon)

- L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
- L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
- L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
- L4 Other: _____

Manure

- M1 TN, TP, TK, %M (2/year)
- M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
- M3 Other: _____

Soil

- S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
- S2 S1 + CEC, CaCO3, OM, C:N, TN
- S3 NO_3N, NH_4N
- S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	N05	Dom	W1	8-21-23/9:40	Zeke	—		
2								
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 & 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 sampes, please note below.

NOTES: 5.32 TH407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[signature]	IAS		8-21-23 / 3:10 pm
2nd	[signature]	FGL	8-21-23 16:08	
3rd	[signature]	FGL		8-21-23 16:11
4th	[signature]	FGL	8/21/23 16:11	

LABORATORY USE ONLY

Logged In By: [signature] GLS 8/21/23 1732 Total Samples: [signature] 8/22/23 7:18 Laboratory #: _____

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 14, 2023

Lab No. : **VI 2345651**
Customer No. : **4018573**
Reference : **41252**

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

Laboratory Report

Introduction: This report package contains a total of 6 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	(3 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
16 NE	08/24/2023	08/24/2023	VI 2345651-001	AGW
30 NW	08/24/2023	08/24/2023	VI 2345651-002	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)
SM 4500-NO3 F	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: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-09-15

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

September 14, 2023

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

Description : 16 NE
Project : 0057 DeGroot Dairy North

Lab No. : VI 2345651-001
Customer No. : 4018573
Reference : 41252
Sampled On : August 24, 2023 at 11:35
Sampled By : Alex
Received On : August 24, 2023 at 16:04
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:15	lcr
Nitrate Nitrogen	4.6	0.4	mg/L		1		08/25/2023	12:15	lfs	SM 4500-NO3 F	08/25/2023	13:54	lfs
Nitrogen, Total as Nitrogen	4.6	0.5	mg/L		1	I	09/08/2023	09:16	sta	Calc.	09/11/2023	21:15	lcr
Nitrate + Nitrite as N	4.6	0.4	mg/L		1		08/25/2023	12:15	lfs	SM 4500-NO3 F	08/25/2023	13:54	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:15	lcr
Conductivity	422	1	umhos/cm		1		08/31/2023	11:57	krh	SM 4500-H+B	08/31/2023	16:35	krh
Solids, Total Dissolved (TDS)	240	20	mg/L		1		08/28/2023	14:30	ctl	SM 2540 C	08/29/2023	12:00	ctl

DQF Flags Definition:
U Constituent results were non-detect.
I The MS/MSD did not meet QC criteria.

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

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 14, 2023

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

Description : 30 NW
Project : 0057 DeGroot Dairy North

Lab No. : VI 2345651-002
Customer No. : 4018573
Reference : 41252
Sampled On : August 24, 2023 at 11:55
Sampled By : Alex
Received On : August 24, 2023 at 16:04
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Alkalinity (as CaCO3)	90	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	17:31	amm
Bicarbonate	100	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	17:31	amm
Carbonate	ND	10	mg/L		1	U	08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	17:31	amm
Hydroxide	ND	10	mg/L		1	U	08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	17:31	amm
Chloride	75	1	mg/L		1		08/25/2023	10:48	ldm	EPA 300.0	08/25/2023	23:53	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:18	lcr
Nitrate Nitrogen	1.7	0.1	mg/L		1		08/25/2023	10:48	ldm	EPA 300.0	08/25/2023	23:53	ldm
Nitrogen, Total as Nitrogen	1.7	0.5	mg/L		1	l	09/08/2023	09:16	sta	Calc.	09/11/2023	21:18	lcr
Nitrate + Nitrite as N	1.7	0.1	mg/L		1		08/25/2023	10:48	ldm	EPA 300.0	08/25/2023	23:53	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:18	lcr
Conductivity	519	1	umhos/cm		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	17:31	amm
Sulfate Sulfur	12.9	0.17	mg/L		1		08/25/2023	10:48	ldm	EPA 300.0	08/25/2023	23:53	ldm
Solids, Total Dissolved (TDS)	310	20	mg/L		1		08/28/2023	16:10	ctl	SM 2540 C	08/29/2023	12:00	ctl
Calcium	17	1	mg/L		1		08/29/2023	05:45	ejc	EPA 200.7	08/30/2023	14:45	ac
Magnesium	1	1	mg/L		1		08/29/2023	05:45	ejc	EPA 200.7	08/30/2023	14:45	ac
Sodium	86	1	mg/L		1		08/29/2023	05:45	ejc	EPA 200.7	08/30/2023	14:45	ac

DQF Flags Definition:
U Constituent results were non-detect.
l The MS/MSD did not meet QC criteria.

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

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345651
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	08/29/2023:209672EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	97.2%	85-115	
			MS	mg/L	12.00	93.1%	75-125	
		(CH 2377166-005)	MSD	mg/L	12.00	116%	75-125	
			MSRPD	mg/L		5.7%	≤20.0	
			MS	mg/L	12.00	90.0%	75-125	
		(STK2351530-001)	MSD	mg/L	12.00	91.1%	75-125	
			MSRPD	mg/L		0.7%	≤20.0	
Magnesium	200.7	08/29/2023:209672EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	100%	85-115	
			MS	mg/L	12.00	80.0%	75-125	
		(CH 2377166-005)	MSD	mg/L	12.00	114%	75-125	
			MSRPD	mg/L		5.1%	≤20	
			MS	mg/L	12.00	45.3%	<¼	406
		(STK2351530-001)	MSD	mg/L	12.00	43.3%	<1/4	
			MSRPD	mg/L		0.3%	≤20	
Sodium	200.7	08/29/2023:209672EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.5%	85-115	
			MS	mg/L	12.00	97.9%	75-125	
		(CH 2377166-005)	MSD	mg/L	12.00	111%	75-125	
			MSRPD	mg/L		6.0%	≤20.0	
			MS	mg/L	12.00	-40.2%	<¼	406
		(STK2351530-001)	MSD	mg/L	12.00	-62.9%	<1/4	
			MSRPD	mg/L		1.2%	≤20.0	

Definition

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 analyted. 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.

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345651
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	08/29/2023:209673AMM	ND	mg/L		0.2%	10	406
Bicarbonate	2320B	(CH 2376844-011)	Dup	mg/L		0.2%	10	
E. C.	2320B	(CH 2376844-011)	Dup	umhos/cm		0%	5	
	2320B	(STK2351584-002)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	08/28/2023:209655CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	97.2%	90-110	
		(SP 2314439-001)	Dup	mg/L		1.13%	5	
		(SP 2314439-001)	Dup	mg/L		0.9%	5	
			Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	103%	90-110	
		(VI 2345653-001)	Dup	mg/L		1.32%	5	
		(VI 2345653-001)	Dup	mg/L		2.13%	5	
Chloride	300.0	08/25/2023:209617LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	100 %	90-110	
			MS	mg/L	50.00	93.1 %	67-117	
		(CH 2376844-006)	MSD	mg/L	50.00	93.2 %	67-117	
			MSRPD	mg/L	10.00	0.08%	≤7	
			MS	mg/L	50.00	93.5 %	67-117	
		(CH 2376844-003)	MSD	mg/L	50.00	92.8 %	67-117	
			MSRPD	mg/L	10.00	0.4%	≤7	
Nitrate + Nitrite as N	300.0	08/25/2023:209617LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	100 %	90-110	
			MS	mg/L	40.00	100 %	86-112	
		(CH 2376844-006)	MSD	mg/L	40.00	100 %	86-112	
			MSRPD	mg/L	10.00	0.1%	≤7	
			MS	mg/L	40.00	98.4 %	86-112	
		(CH 2376844-003)	MSD	mg/L	40.00	97.8 %	86-112	
			MSRPD	mg/L	10.00	0.4%	≤7	
Nitrate Nitrogen	300.0	08/25/2023:209617LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	100 %	90-110	
			MS	mg/L	40.00	100 %	86-112	
		(CH 2376844-006)	MSD	mg/L	40.00	100 %	86-112	
			MSRPD	mg/L	10.00	0.1%	≤7	
			MS	mg/L	40.00	98.4 %	86-112	
		(CH 2376844-003)	MSD	mg/L	40.00	97.8 %	86-112	
			MSRPD	mg/L	10.00	0.4%	≤7	
Sulfate Sulfur	300.0	08/25/2023:209617LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	100.0	97.2 %	18-165	
		(CH 2376844-006)	MSD	mg/L	100.0	97.4 %	18-165	
			MSRPD	mg/L	10.00	0.1%	≤7	
			MS	mg/L	100.0	97.8 %	18-165	
		(CH 2376844-003)	MSD	mg/L	100.0	97.2 %	18-165	
			MSRPD	mg/L	10.00	0.4%	≤7	
Nitrogen, Total Kjeldahl	351.2	09/08/2023:210053STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	93.0%	73-124	
			MS	mg/L	12.00	97.5%	90-110	
		(STK2351641-005)	MSD	mg/L	12.00	82.0%	90-110	435
			MSRPD	mg/L		7.7%	≤20	
			MS	mg/L	12.00	91.6%	90-110	

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345651
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
		(STK2351641-008)	MSD	mg/L	12.00	90.9%	90-110	
			MSRPD	mg/L		0.7%	≤20	
Nitrate + Nitrite as N	4500NO3F	08/25/2023:209573LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	93.9%	80-120	
			MS	mg/L	5.609	85.7%	66-125	
		(SP 2314578-001)	MSD	mg/L	5.609	87.4%	66-125	
			MSRPD	mg/L		0.6%	≤30.4	
Nitrate Nitrogen	4500NO3F	08/25/2023:209573LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	93.9%	80-120	
			MS	mg/L	5.609	85.7%	66-125	
		(SP 2314578-001)	MSD	mg/L	5.609	87.4%	66-125	
			MSRPD	mg/L		0.6%	≤30.4	

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 analyted. 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.

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Laboratory Analysis Work Order

Nº 41252

ID: # D057 2345651

LABORATORY: FGL

SITE NAME: DeGroot Dairy North

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)

W2 EC, NO_3N, TDS, TN (Irr)

W3 NH_4-N (Ammonium)

W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)

W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)

W6 NO_3N, NO_2 (Dom ILRP, Annually)

W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)

W8 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)

L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)

L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)

L4 Other: _____

Manure

M1 TN, TP, TK, %M (2/year)

M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)

M3 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S

S2 S1 + CEC, CaCO3, OM, C:N, TN

S3 NO_3N, NH_4N

S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N*	pH	Temp
1	16NE	Irr	W2	8/24 11:35	Alex	—		
2	30NW	Irr	W5	8/24 11:55	Alex	—		
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 & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[illegible]	IAS		8/24/23 3:20
2nd	EMA	FGL	8/24/23 15:52	
3rd	EMA	FGL		8/24/23 16:04
4th	[illegible]		8/24/23 1604	

LABORATORY USE ONLY

Logged In By: GD

Total Samples: 8/24/23 1720

Laboratory #: 8/25/23 1449

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

October 3, 2023

Lab No. : **VI 2346186**
Customer No. : **4018573**
Reference : **41334**

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

Laboratory Report

Introduction: This report package contains a total of 5 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 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
28NW	09/12/2023	09/12/2023	VI 2346186-001	AGW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-10-03

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

October 3, 2023

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

Description : 28NW
Project : 0057 DeGroot Dairy North

Lab No. : VI 2346186-001
Customer No. : 4018573
Reference : 41334
Sampled On : September 12, 2023 at 10:30
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Alkalinity (as CaCO3)	90	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	06:11	amm
Bicarbonate	90	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	06:11	amm
Carbonate	ND	10	mg/L		1	JI	09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	06:11	amm
Hydroxide	ND	10	mg/L		1	JI	09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	06:11	amm
Chloride	37	1	mg/L		1		09/13/2023	15:20	ldm	EPA 300.0	09/14/2023	02:03	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	17:22	lcr
Nitrate Nitrogen	2.0	0.1	mg/L		1		09/13/2023	15:20	ldm	EPA 300.0	09/14/2023	02:03	ldm
Nitrogen, Total as Nitrogen	2.0	0.5	mg/L		1	I	09/26/2023	09:55	sta	Calc.	09/29/2023	17:22	lcr
Nitrate + Nitrite as N	2.0	0.1	mg/L		1		09/13/2023	15:20	ldm	EPA 300.0	09/14/2023	02:03	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	17:22	lcr
Conductivity	360	1	umhos/cm		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	06:11	amm
Sulfate Sulfur	7.90	0.17	mg/L		1		09/13/2023	15:20	ldm	EPA 300.0	09/14/2023	02:03	ldm
Solids, Total Dissolved (TDS)	230	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl
Calcium	8	1	mg/L		1	I	09/15/2023	07:55	ejc	EPA 200.7	09/19/2023	11:44	ac
Magnesium	1	1	mg/L		1	I	09/15/2023	07:55	ejc	EPA 200.7	09/19/2023	11:44	ac
Sodium	69	1	mg/L		1		09/15/2023	07:55	ejc	EPA 200.7	09/19/2023	11:44	ac

DQF Flags Definition:
J Reported value is estimated; detected at a concentration below the RL and above the laboratory MDL.
I The RPD for the laboratory duplicate exceeded laboratory criteria.
U Constituent results were non-detect.
I The MS/MSD did not meet QC criteria.

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

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

October 3, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346186
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	09/15/2023:210356EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.8%	85-115	
			MS	mg/L	12.00	-1770%	<¼	406
		(SP 2315418-001)	MSD	mg/L	12.00	-1210%	<1/4	
			MSRPD	mg/L		6.2%	≤20.0	
			MS	mg/L	12.00	63.2%	75-125	435
		(CC 2383137-002)	MSD	mg/L	12.00	94.4%	75-125	
			MSRPD	mg/L		13.6%	≤20.0	
Magnesium	200.7	09/15/2023:210356EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	102%	85-115	
			MS	mg/L	12.00	-469%	<¼	406
		(SP 2315418-001)	MSD	mg/L	12.00	-259%	<1/4	
			MSRPD	mg/L		7.4%	≤20	
			MS	mg/L	12.00	71.2%	75-125	435
		(CC 2383137-002)	MSD	mg/L	12.00	97.1%	75-125	
			MSRPD	mg/L		16.7%	≤20	
Sodium	200.7	09/15/2023:210356EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	96.4%	85-115	
			MS	mg/L	12.00	-1470%	<¼	406
		(SP 2315418-001)	MSD	mg/L	12.00	-1100%	<1/4	
			MSRPD	mg/L		4.9%	≤20.0	
			MS	mg/L	12.00	614%	<¼	406
		(CC 2383137-002)	MSD	mg/L	12.00	169%	<1/4	
			MSRPD	mg/L		11.9%	≤20.0	

Definition

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 analyted. 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.

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October 3, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346186
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	09/20/2023:210530AMM	ND	mg/L		0.07%	10	435
Bicarbonate	2320B	(VI 2346186-001)	Dup	mg/L		1.83%	10	
Carbonate	2320B	(VI 2346186-001)	Dup	mg/L		13.3%	10	440
E. C.	2320B	(VI 2346186-001)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	09/15/2023:210364CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
		(SP 2315435-001)	Dup	mg/L		2.16%	5	
		(SP 2315435-001)	Dup	mg/L		3.68%	5	
Chloride	300.0	09/13/2023:210380LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	102 %	90-110	
			MS	mg/L	50.00	82.8 %	67-117	
		(CC 2383100-001)	MSD	mg/L	50.00	82.1 %	67-117	
			MSRPD	mg/L	10.00	0.3%	≤7	
			MS	mg/L	50.00	94.8 %	67-117	
		(VI 2346186-001)	MSD	mg/L	50.00	94.3 %	67-117	
			MSRPD	mg/L	10.00	0.3%	≤7	
Nitrate + Nitrite as N	300.0	09/13/2023:210380LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	40.00	95.2 %	86-112	
		(CC 2383100-001)	MSD	mg/L	40.00	96.0 %	86-112	
			MSRPD	mg/L	10.00	0.5%	≤7	
			MS	mg/L	40.00	104 %	86-112	
		(VI 2346186-001)	MSD	mg/L	40.00	103 %	86-112	
			MSRPD	mg/L	10.00	0.3%	≤7	
Nitrate Nitrogen	300.0	09/13/2023:210380LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	40.00	95.2 %	86-112	
		(CC 2383100-001)	MSD	mg/L	40.00	96.0 %	86-112	
			MSRPD	mg/L	10.00	0.5%	≤7	
			MS	mg/L	40.00	104 %	86-112	
		(VI 2346186-001)	MSD	mg/L	40.00	103 %	86-112	
			MSRPD	mg/L	10.00	0.3%	≤7	
Sulfate Sulfur	300.0	09/13/2023:210380LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	103 %	90-110	
			MS	mg/L	100.0	96.6 %	18-165	
		(CC 2383100-001)	MSD	mg/L	100.0	97.4 %	18-165	
			MSRPD	mg/L	10.00	0.6%	≤7	
			MS	mg/L	100.0	103 %	18-165	
		(VI 2346186-001)	MSD	mg/L	100.0	102 %	18-165	
			MSRPD	mg/L	10.00	0.2%	≤7	
Nitrogen, Total Kjeldahl	351.2	09/26/2023:210792STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	92.1%	73-124	
			MS	mg/L	12.00	91.7%	90-110	
		(STK2352326-001)	MSD	mg/L	12.00	94.2%	90-110	
			MSRPD	mg/L		2.5%	≤20	
			MS	mg/L	12.00	89.4%	90-110	435
		(STK2352326-002)	MSD	mg/L	12.00	90.7%	90-110	
			MSRPD	mg/L		1.4%	≤20	

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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 analyted. 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

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

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Laboratory Analysis Work Order

Nº 41334

ID: # 0057 2346186 LABORATORY: FGL

SITE NAME: DEGROOT DAIRY NORTH

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr)
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Manure

M1 TN, TP, TK, %M (2/year)
M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
M3 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	28NW	IRR	W5	9-12 / 10:30	Zeke			
2								
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 & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		9-12-23 / 3:15
2nd	AJB	FGL	9/12/23 1600	
3rd	AJB	FGL		9/12/23 1619
4th			9/12/23 1619	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: _____ Laboratory # _____

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 2, 2023

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

Lab No. : **VI 2346885**
Customer No. : **4018573**
Reference : **41492**

Laboratory Report

Introduction: This report package contains a total of 5 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 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
23SW	10/11/2023	10/11/2023	VI 2346885-001	AGW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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: 2023-11-02

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 2, 2023

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

Description : 23SW
Project : 0057 DeGroot Dairy North

Lab No. : VI 2346885-001
Customer No. : 4018573
Reference : 41492
Sampled On : October 11, 2023 at 14:50
Sampled By : Zeke
Received On : October 11, 2023 at 16:14
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO3)	70	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	20:16	amm
Bicarbonate	60	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	20:16	amm
Carbonate	10	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	20:16	amm
Hydroxide	10	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	20:16	amm
Chloride	32	1	mg/L		1		10/12/2023	10:41	ldm	EPA 300.0	10/13/2023	04:09	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:32	lcr
Nitrate Nitrogen	1.7	0.1	mg/L		1		10/12/2023	10:41	ldm	EPA 300.0	10/13/2023	04:09	ldm
Nitrogen, Total as Nitrogen	1.7	0.5	mg/L		1	l	10/25/2023	12:24	sta	Calc.	10/29/2023	18:32	lcr
Nitrate + Nitrite as N	1.7	0.1	mg/L		1		10/12/2023	10:41	ldm	EPA 300.0	10/13/2023	04:09	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:32	lcr
Conductivity	298	1	umhos/cm		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	20:16	amm
Sulfate Sulfur	6.9	0.17	mg/L		1		10/12/2023	10:41	ldm	EPA 300.0	10/13/2023	04:09	ldm
Solids, Total Dissolved (TDS)	190	20	mg/L		1		10/16/2023	09:30	ctl	SM 2540 C	10/17/2023	11:00	ctl
Calcium	6	1	mg/L		1		10/16/2023	09:21	ejc	EPA 200.7	10/31/2023	13:29	ac
Magnesium	ND	1	mg/L		1	U	10/16/2023	09:21	ejc	EPA 200.7	10/31/2023	13:29	ac
Sodium	56	1	mg/L		1		10/16/2023	09:21	ejc	EPA 200.7	10/31/2023	13:29	ac

DQF Flags Definition:
U Constituent results were non-detect.
l The MS/MSD did not meet QC criteria.

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

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ENVIRONMENTAL EGL AGRICULTURAL
Analytical Chemists

November 2, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346885
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	10/16/2023:211605EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	97.7%	85-115	
		(SP 2316498-004)	MSD	mg/L	12.00	5840%	<1/4	
			MSRPD	mg/L		200.0%	≤20.0	435
			MS	mg/L	12.00	105%	75-125	
		(VI 2346886-001)	MSD	mg/L	12.00	100%	75-125	
			MSRPD	mg/L		3.5%	≤20.0	
Magnesium	200.7	10/16/2023:211605EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	99.3%	85-115	
			MS	mg/L	12.00	-51.4%	<¼	406
		(SP 2316498-004)	MSD	mg/L	12.00	1840%	<1/4	
			MSRPD	mg/L		63.7%	≤20	435
			MS	mg/L	12.00	106%	75-125	
		(VI 2346886-001)	MSD	mg/L	12.00	102%	75-125	
			MSRPD	mg/L		3.7%	≤20	
Sodium	200.7	10/16/2023:211605EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	103%	85-115	
		(SP 2316498-004)	MSD	mg/L	12.00	4800%	<1/4	
			MSRPD	mg/L		200.0%	≤20.0	435
			MS	mg/L	12.00	106%	75-125	
		(VI 2346886-001)	MSD	mg/L	12.00	77.7%	75-125	
			MSRPD	mg/L		4.4%	≤20.0	

Definition

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 analyted. 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.

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November 2, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346885
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	10/16/2023:211677AMM	ND	mg/L		1.36%	10	435
Bicarbonate	2320B	(VI 2346885-001)	Dup	mg/L		0.8%	10	
Carbonate	2320B	(VI 2346885-001)	Dup	mg/L		2.20%	10	
E. C.	2320B	(VI 2346885-001)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	10/16/2023:211599CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	103%	90-110	
		(CC 2383609-001)	Dup	mg/L		2.67%	5	
		(CC 2383609-001)	Dup	mg/L		0.3%	5	
Chloride	300.0	10/12/2023:211631LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101%	90-110	
			MS	mg/L	50.00	95.9%	67-117	
		(STK2352938-012)	MSD	mg/L	50.00	95.4%	67-117	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	50.00	97.7%	67-117	
		(STK2352938-013)	MSD	mg/L	50.00	98.0%	67-117	
			MSRPD	mg/L		0.2%	≤7	
Nitrate + Nitrite as N	300.0	10/12/2023:211631LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	102%	86-112	
		(STK2352938-012)	MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	99.1%	86-112	
		(STK2352938-013)	MSD	mg/L	40.00	99.3%	86-112	
			MSRPD	mg/L		0.2%	≤7	
Nitrate Nitrogen	300.0	10/12/2023:211631LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	102%	86-112	
		(STK2352938-012)	MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	99.1%	86-112	
		(STK2352938-013)	MSD	mg/L	40.00	99.3%	86-112	
			MSRPD	mg/L		0.2%	≤7	
Sulfate Sulfur	300.0	10/12/2023:211631LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	102%	90-110	
			MS	mg/L	100.0	95.7%	18-165	
		(STK2352938-012)	MSD	mg/L	100.0	95.2%	18-165	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	100.0	94.2%	18-165	
		(STK2352938-013)	MSD	mg/L	100.0	94.6%	18-165	
			MSRPD	mg/L		0.2%	≤7	
Nitrogen, Total Kjeldahl	351.2	10/25/2023:212045STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	85.2%	73-124	
			MS	mg/L	12.00	82.9%	90-110	435
		(VI 2346889-002)	MSD	mg/L	12.00	84.1%	90-110	435
			MSRPD	mg/L		1.4%	≤20	
			MS	mg/L	12.00	80.5%	90-110	435
		(VI 2346889-003)	MSD	mg/L	12.00	83.2%	90-110	435
			MSRPD	mg/L		3.3%	≤20	

Page 4 of 5

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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 analyted. 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

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

Page 5 of 5

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Laboratory Analysis Work Order

Nº 41492

ID: # 0057 2346885 LABORATORY: FGL

SITE NAME: DEGROOT DAIRY NORTH

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr)
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Manure

M1 TN, TP, TK, %M (2/year)
M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
M3 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N*	pH	Temp
1	235W	IRR	W5	10-11 / 2:50	Zeke			
2								
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 & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		10-11-23 / 3:00
2nd	AJB	FGL	10/11/23 1557	
3rd	AJB	FGL		10/11/23 1614
4th			10/11/23 1614	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: _____ Laboratory #: _____

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 1, 2023

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

Lab No. : **VI 2346936**
Customer No. : **4018573**
Reference : **41497**

Laboratory Report

Introduction: This report package contains a total of 5 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 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
16CTR	10/12/2023	10/12/2023	VI 2346936-001	AGW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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: 2023-11-01

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 1, 2023

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

Description : 16CTR
Project : 0057 DeGroot Dairy North

Lab No. : VI 2346936-001
Customer No. : 4018573
Reference : 41497
Sampled On : October 12, 2023 at 14:45
Sampled By : Zeke
Received On : October 12, 2023 at 16:04
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Alkalinity (as CaCO3)	70	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	22:47	amm
Bicarbonate	80	10	mg/L		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	22:47	amm
Carbonate	ND	10	mg/L		1	U	10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	22:47	amm
Hydroxide	ND	10	mg/L		1	U	10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	22:47	amm
Chloride	92	1	mg/L		1		10/13/2023	13:57	ldm	EPA 300.0	10/14/2023	07:07	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:39	lcr
Nitrate Nitrogen	13.0	0.1	mg/L		1	l	10/13/2023	13:57	ldm	EPA 300.0	10/14/2023	07:07	ldm
Nitrogen, Total as Nitrogen	13.0	0.5	mg/L		1	l	10/25/2023	12:24	sta	Calc.	10/29/2023	18:39	lcr
Nitrate + Nitrite as N	13.0	0.1	mg/L		1	l	10/13/2023	13:57	ldm	EPA 300.0	10/14/2023	07:07	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:39	lcr
Conductivity	638	1	umhos/cm		1		10/16/2023	15:10	amm	SM 4500-H+B	10/16/2023	22:47	amm
Sulfate Sulfur	15.7	0.17	mg/L		1		10/13/2023	13:57	ldm	EPA 300.0	10/14/2023	07:07	ldm
Solids, Total Dissolved (TDS)	390	20	mg/L		1		10/16/2023	13:30	ctl	SM 2540 C	10/17/2023	11:00	ctl
Calcium	38	1	mg/L		1		10/17/2023	07:45	ejc	EPA 200.7	10/23/2023	12:24	ac
Magnesium	1	1	mg/L		1		10/17/2023	07:45	ejc	EPA 200.7	10/23/2023	12:24	ac
Sodium	86	1	mg/L		1		10/17/2023	07:45	ejc	EPA 200.7	10/23/2023	12:24	ac

DQF Flags Definition:
U Constituent results were non-detect.
l The MS/MSD did not meet QC criteria.

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

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 1, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346936
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	10/17/2023:211718EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	107%	85-115	
			MS	mg/L	12.00	96.4%	75-125	
		(CH 2378614-003)	MSD	mg/L	12.00	111%	75-125	
			MSRPD	mg/L		8.6%	≤20.0	
			MS	mg/L	12.00	-9.33%	<¼	406
		(CC 2383622-001)	MSD	mg/L	12.00	89.9%	75-125	
			MSRPD	mg/L		5.6%	≤20.0	
Magnesium	200.7	10/17/2023:211718EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	110%	85-115	
			MS	mg/L	12.00	103%	75-125	
		(CH 2378614-003)	MSD	mg/L	12.00	114%	75-125	
			MSRPD	mg/L		8.4%	≤20	
			MS	mg/L	12.00	31.8%	<¼	406
		(CC 2383622-001)	MSD	mg/L	12.00	100%	75-125	
			MSRPD	mg/L		6.1%	≤20	
Sodium	200.7	10/17/2023:211718EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	107%	85-115	
			MS	mg/L	12.00	100%	75-125	
		(CH 2378614-003)	MSD	mg/L	12.00	111%	75-125	
			MSRPD	mg/L		7.7%	≤20.0	
			MS	mg/L	12.00	-63.9%	<¼	406
		(CC 2383622-001)	MSD	mg/L	12.00	52.3%	<1/4	
			MSRPD	mg/L		5.3%	≤20.0	

Definition

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 analyted. 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.

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November 1, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346936
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	10/16/2023:211677AMM	ND	mg/L		1.36%	10	406
Bicarbonate	2320B	(VI 2346885-001)	Dup	mg/L		0.8%	10	
Carbonate	2320B	(VI 2346885-001)	Dup	mg/L		2.20%	10	
E. C.	2320B	(VI 2346885-001)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	10/16/2023:211599CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
		(SP 2317343-001)	Dup	mg/L		0.9%	5	
		(SP 2317343-001)	Dup	mg/L		0.8%	5	
Chloride	300.0	10/13/2023:211644LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	103%	90-110	
			MS	mg/L	50.00	96.7%	67-117	
		(VI 2346938-001)	MSD	mg/L	50.00	96.4%	67-117	
			MSRPD	mg/L		0.2%	≤7	
			MS	mg/L	50.00	104%	67-117	
		(ch 2378869-001)	MSD	mg/L	50.00	104%	67-117	
			MSRPD	mg/L		0.5%	≤7	
Nitrate + Nitrite as N	300.0	10/13/2023:211644LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	60.5%	86-112	435
		(VI 2346938-001)	MSD	mg/L	40.00	59.3%	86-112	435
			MSRPD	mg/L		0.5%	≤7	
			MS	mg/L	40.00	104%	86-112	
		(ch 2378869-001)	MSD	mg/L	40.00	104%	86-112	
			MSRPD	mg/L		0.7%	≤7	
Nitrate Nitrogen	300.0	10/13/2023:211644LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	60.5%	86-112	435
		(VI 2346938-001)	MSD	mg/L	40.00	59.3%	86-112	435
			MSRPD	mg/L		0.5%	≤7	
			MS	mg/L	40.00	104%	86-112	
		(ch 2378869-001)	MSD	mg/L	40.00	104%	86-112	
			MSRPD	mg/L		0.7%	≤7	
Sulfate Sulfur	300.0	10/13/2023:211644LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	103%	90-110	
			MS	mg/L	100.0	97.1%	18-165	
		(VI 2346938-001)	MSD	mg/L	100.0	96.8%	18-165	
			MSRPD	mg/L		0.2%	≤7	
			MS	mg/L	100.0	104%	18-165	
		(ch 2378869-001)	MSD	mg/L	100.0	104%	18-165	
			MSRPD	mg/L		0.4%	≤7	
Nitrogen, Total Kjeldahl	351.2	10/25/2023:212045STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	85.2%	73-124	
			MS	mg/L	12.00	82.9%	90-110	435
		(VI 2346889-002)	MSD	mg/L	12.00	84.1%	90-110	435
			MSRPD	mg/L		1.4%	≤20	
			MS	mg/L	12.00	80.5%	90-110	435
		(VI 2346889-003)	MSD	mg/L	12.00	83.2%	90-110	435
			MSRPD	mg/L		3.3%	≤20	

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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 analyted. 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.

Page 5 of 5

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Laboratory Analysis Work Order

Nº 41497

23469360

ID: # 0057

LABORATORY: FGL

SITE NAME: DEGROOT DAIRY NORTH

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)

W2 EC, NO_3N, TDS, TN (Irr)

W3 NH_4-N (Ammonium)

W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)

W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)

W6 NO_3N, NO_2 (Dom ILRP, Annually)

W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)

W8 Other: _____

pH 15.2°C ID# TM4P7

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)

L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)

L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)

L4 Other: _____

Manure

M1 TN, TP, TK, %M (2/year)

M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)

M3 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S

S2 S1 + CEC, CaCO3, OM, C:N, TN

S3 NO_3N, NH_4N

S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	16CTR	IRR	W5	10-12 / 7:45	Zeke			
2								
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 & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[illegible]	IAS		10-12-23 / 3:20
2nd	ADB	FGL	10/12/23 1545	
3rd	ADB	FGL		10/12/23 1604
4th	[illegible]		10/12/23 1604	

LABORATORY USE ONLY

Logged In By: [illegible]

Total Samples: 10/12/23 [illegible]

Laboratory #: [illegible] 10/13/23 [illegible]

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

December 18, 2023

Lab No. : **VI 2348411**
Customer No. : **4018573**
Reference : **42153**

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

Laboratory Report

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

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: 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
ND4	12/11/2023	12/11/2023	VI 2348411-001	DW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was 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	
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	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: 2023-12-18

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

December 18, 2023

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

Description : ND4
Project : 0057 DeGroot Dairy North

Lab No. : VI 2348411-001
Customer No. : 4018573
Reference : 42153
Sampled On : December 11, 2023 at 12:00
Sampled By : Zeke
Received On : December 11, 2023 at 15:35
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	2.2	0.4	mg/L	10	1		12/13/2023	09:00	lfs	SM 4500-NO3 F	12/13/2023	10:01	lfs
Conductivity	711	1	umhos/cm	1600[2]	1		12/15/2023	08:07	krh	SM 4500-H+B	12/15/2023	09:57	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

December 18, 2023
Innovative Ag Services, LLC

Lab No. : VI 2348411
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(SP 2320577-001)	Dup	umhos/cm		0.1%	5	
Nitrate Nitrogen	4500NO3F	12/13/2023:214023LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.1%	80-120	
			MS	mg/L	5.609	96.7%	66-125	
		(VI 2348379-001)	MSD	mg/L	5.609	96.1%	66-125	
			MSRPD	mg/L		0.3%	≤30.4	

Definition

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.

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 analyted. 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.

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Laboratory Analysis Work Order

Nº 42153

2348411

ID: # 0057

LABORATORY: FGL

SITE NAME: Deyroot Dairy North

Authorized Copy Release to:

Billing: IAS

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr)
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Manure

M1 TN, TP, TK, %M (2/year)
M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
M3 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N*	pH	Temp
1	ND4	DOM	W1	12-11 / 12:00	Zake			
2								
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 & 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 sampes, please note below.

NOTES: RC18.9°C ID#TH407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[illegible]	IAS		12-11-23 / 1:20
2nd	AJB	FGL	12/11/23 1535	
3rd	AJB	FGL		12/11/23 1554
4th	SRO	FGL	12-11-23 1554	
	SRO	FGL	12-11-23 1730	
		GLS	12-11-23 1730	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: _____ Laboratory #: _____

GLS MC 12/12/23 1013

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