INNOVATIVE
AG SERVICES

River Oaks Dairy

2023 Annual Report

X	Report Form	NA	Attachment H
X	Attachment A	NA	Attachment I
X	Attachment B	NA	Attachment J
X	Attachment C	X	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)

Annual Report

River Oaks Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	River Oaks Dairy
Facility Address	3621 E. Mount Whitney, Laton CA 93242

Owner/Operator as of 12/31/2023

Operator Name	Zonneveld Dairies, Inc.
Operator Phone	(559) 923-4546
Owner Name	Zonneveld Dairies, Inc.
Owner Phone	(559) 923-4546

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).

INNOVATIVE AG SERVICES

River Oaks Dairy 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?

__ No.

_X_ 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).

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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.

River Oaks Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

"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: 4C4A48EC17AE47B...
Signature of Operator of Facility	Signature of Owner of Facility
Zonneveld Dairies, Inc.	Zonneveld Dairies, Inc.
Print Name	Print Name
	6/25/2024
Title and Date	Title and Date

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Estimated Manure and Nutrients Generated (Attachment A)

Animal Type	Maximum No. of Head	Average No. of Head*	Housing Type	Weight	Total Manure Produced (tons/year)	NITROGEN 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
Hol Milk Cows	1,700	1,657	Milk Freestall -	1,400	42,052.82	598,756.95	102,816.85	139,105.15	1,092,277.83
Hol Dry Cows	195	190	Flushed	1,450	2,772.50	34,675.00	4,854.50	22,885.50	48,933.36
	1,895	**1,847**			**44,825.32**	**633,431.95**	**107,671.35**	**161,990.65**	**1,141,211.19**

* 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)**
35,706,547	679.67	213.10	719.33	6,193.33	202,157.02	63,383.51	213,955.29	1,842,117.4

* 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).

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 101

Wheat, 47 Acres Planted on 11/23/2022

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)
10/15/2022	Corral Solids: Main Corral	5.00	Tons	12.30	1.20	0.55	1.12	%	235		4,946	2,263	4,616	0	
10/23/2022	Ground Water: Well Avg	5.00	Acre Inches		6.48			mg/L			345	0	0	11,375	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			658				
02/14/2023	Surface Water: Laguna	7.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/14/2023	Waste Water: Main Lagoon	1.00	Acre Inches		531.00	90.80	948.00	mg/L		1,276,252	5,645	965	10,078	92,704	
05/23/2023	Harvest	18.90	Tons	64.00	1.74	0.39	1.99	%							11,129
	Acre Inches Applied:	**13.00**						**Totals:**	**235**	**1,276,252**	**11,594**	**3,228**	**14,695**	**104,079**	**11,129**
Season Nitrogen Ratio:	1.04							**Lbs Per Acre:**			**247**	**69**	**313**	**2,214**	**237**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 101

Corn, 47 Acres Planted on 06/21/2023

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)
06/02/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/02/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		638,126	4,662	1,781	4,269	32,957	
07/17/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/28/2023	Ground Water: Well Avg	4.70	Acre Inches		23.75			mg/L			1,187	0	0	14,490	
07/28/2023	Waste Water: Main Lagoon	0.75	Acre Inches		633.00	205.00	658.00	mg/L		957,189	5,047	1,635	5,247	54,857	
08/22/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,313	0	0	16,032	
08/22/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		638,126	3,365	1,090	3,498	36,571	
09/20/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,262	0	0	15,415	
10/18/2023	Harvest	30.80	Tons	65.40	1.25	0.23	1.16	%							12,522
	Acre Inches Applied:	**28.65**						**Totals:**		**2,233,441**	**16,836**	**4,505**	**13,013**	**170,322**	**12,522**
Season Nitrogen Ratio:	1.34							**Lbs Per Acre:**			**358**	**96**	**277**	**3,624**	**266**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023
Nutrient Applications (Attachment B)

Field Name: 102

Wheat, 38 Acres Planted on 11/28/2022

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)
11/02/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			223	0	0	7,358	
11/02/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		515,932	2,282	390	4,074	37,476	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			532				
02/20/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/20/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		515,932	2,282	390	4,074	37,476	
03/18/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
03/18/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		515,932	3,769	1,440	3,451	26,646	
05/23/2023	Harvest	21.10	Tons	64.70	1.79	0.38	1.88	%							10,133
	Acre Inches Applied:	**13.50**						**Totals:**		**1,547,795**	**9,088**	**2,220**	**11,600**	**108,956**	**10,133**
Season Nitrogen Ratio:	0.90							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**267**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 102

Corn, 38 Acres Planted on 06/23/2023

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)
06/10/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/10/2023	Waste Water: Main Lagoon	0.25	Acre Inches		877.00	335.00	803.00	mg/L		257,966	1,884	720	1,726	13,323	
07/18/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/10/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,021	0	0	12,463	
08/10/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		515,932	2,720	881	2,828	29,568	
08/20/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,123	0	0	13,710	
09/18/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,062	0	0	12,962	
09/18/2023	Waste Water: Main Lagoon	0.25	Acre Inches		529.00	99.30	697.00	mg/L		257,966	1,137	214	1,498	11,819	
09/27/2023	Harvest	29.20	Tons	71.50	1.05	0.22	1.48	%							6,641
	Acre Inches Applied:	**28.70**						**Totals:**		**1,031,863**	**8,947**	**1,814**	**6,051**	**93,844**	**6,641**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**235**	**48**	**159**	**2,470**	**175**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 103

Wheat, 41 Acres Planted on 11/08/2022

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)
10/16/2022	Corral Solids: Main Corral	5.00	Tons	12.30	1.20	0.55	1.12	%	205		4,315	1,974	4,027	0	
10/24/2022	Ground Water: Well Avg	5.00	Acre Inches		6.48			mg/L			301	0	0	9,923	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			574				
02/17/2023	Surface Water: Laguna	7.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/17/2023	Waste Water: Main Lagoon	1.00	Acre Inches		531.00	90.80	948.00	mg/L		1,113,326	4,925	842	8,792	80,869	
05/23/2023	Harvest	20.30	Tons	68.60	1.96	0.34	2.53	%							10,245
	Acre Inches Applied:	**13.00**						**Totals:**	**205**	**1,113,326**	**10,114**	**2,816**	**12,819**	**90,792**	**10,245**
Season Nitrogen Ratio:	0.99							**Lbs Per Acre:**			**247**	**69**	**313**	**2,214**	**250**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 103

Corn, 41 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)
06/02/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/02/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		556,663	4,067	1,553	3,724	28,750	
07/17/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/28/2023	Ground Water: Well Avg	4.70	Acre Inches		23.75			mg/L			1,035	0	0	12,640	
07/28/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		556,663	2,935	951	3,051	31,903	
08/22/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,146	0	0	13,985	
08/22/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		556,663	2,935	951	3,051	31,903	
09/20/2023	Ground Water: Well Avg	0.50	Acre Inches		23.75			mg/L			110	0	0	1,345	
10/18/2023	Harvest	29.50	Tons	66.70	1.19	0.22	1.16	%							9,586
	Acre Inches Applied:	**23.90**						**Totals:**		**1,669,989**	**12,228**	**3,455**	**9,826**	**120,525**	**9,586**
Season Nitrogen Ratio:	1.28							**Lbs Per Acre:**			**298**	**84**	**240**	**2,940**	**234**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 104

Wheat, 41 Acres Planted on 11/08/2022

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)
10/18/2022	Corral Solids: Main Corral	6.00	Tons	12.30	1.20	0.55	1.12	%	246		5,178	2,369	4,833	0	
10/25/2022	Ground Water: Well Avg	4.50	Acre Inches		6.48			mg/L			271	0	0	8,931	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			574				
02/16/2023	Surface Water: Laguna	7.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/16/2023	Waste Water: Main Lagoon	0.75	Acre Inches		531.00	90.80	948.00	mg/L		834,995	3,693	631	6,594	60,652	
05/23/2023	Harvest	18.10	Tons	70.20	1.86	0.32	2.36	%							8,227
	Acre Inches Applied:	**12.25**						**Totals:**	**246**	**834,995**	**9,716**	**3,000**	**11,426**	**69,583**	**8,227**
Season Nitrogen Ratio:	1.18							**Lbs Per Acre:**			**237**	**73**	**279**	**1,697**	**201**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 104

Corn, 41 Acres Planted on 06/22/2023

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)
06/04/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/04/2023	Waste Water: Main Lagoon	0.30	Acre Inches		877.00	335.00	803.00	mg/L		333,998	2,440	932	2,234	17,250	
07/19/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/30/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,212	0	0	14,792	
07/30/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		556,663	2,935	951	3,051	31,903	
08/24/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,146	0	0	13,985	
08/24/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		556,663	2,935	951	3,051	31,903	
09/30/2023	Ground Water: Well Avg	6.00	Acre Inches		23.75			mg/L			1,321	0	0	16,137	
10/10/2023	Ground Water: Well Avg	6.00	Acre Inches		23.75			mg/L			1,321	0	0	16,137	
10/18/2023	Harvest	31.00	Tons	65.60	1.16	0.22	1.10	%							10,143
	Acre Inches Applied:	**36.00**						**Totals:**		**1,447,324**	**13,310**	**2,834**	**8,337**	**142,105**	**10,143**
Season Nitrogen Ratio: 1.31								**Lbs Per Acre:**			**325**	**69**	**203**	**3,466**	**247**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 105

Wheat, 28 Acres Planted on 11/29/2022

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)
10/28/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			164	0	0	5,421	
11/02/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		380,160	1,681	288	3,002	27,614	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			392				
02/20/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/20/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		380,160	1,681	288	3,002	27,614	
03/18/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
03/18/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		380,160	2,777	1,061	2,543	19,634	
05/22/2023	Harvest	19.50	Tons	69.80	1.99	0.33	2.34	%							6,563
	Acre Inches Applied:	**13.50**						**Totals:**		**1,140,481**	**6,696**	**1,636**	**8,547**	**80,283**	**6,563**
Season Nitrogen Ratio:	1.02							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**234**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 105

Corn, 28 Acres Planted on 06/24/2023

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)
06/08/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/08/2023	Waste Water: Main Lagoon	0.30	Acre Inches		877.00	335.00	803.00	mg/L		228,096	1,666	636	1,526	11,780	
07/16/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/12/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			752	0	0	9,183	
08/12/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		380,160	2,005	649	2,084	21,787	
08/20/2023	Ground Water: Well Avg	5.70	Acre Inches		23.75			mg/L			857	0	0	10,469	
09/20/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			827	0	0	10,102	
09/20/2023	Waste Water: Main Lagoon	0.35	Acre Inches		529.00	99.30	697.00	mg/L		266,112	1,173	220	1,545	12,192	
10/04/2023	Harvest	30.20	Tons	74.40	1.23	0.23	1.04	%							5,325
	Acre Inches Applied:	**29.35**						**Totals:**		**874,368**	**7,280**	**1,506**	**5,155**	**75,514**	**5,325**
Season Nitrogen Ratio:	1.37							**Lbs Per Acre:**			**260**	**54**	**184**	**2,697**	**190**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 106

Wheat, 40 Acres Planted on 10/17/2022

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)
10/15/2022	Corral Solids: Main Corral	5.00	Tons	12.30	1.20	0.55	1.12	%	200		4,210	1,926	3,929	0	
10/23/2022	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			560				
02/20/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/20/2023	Waste Water: Main Lagoon	1.00	Acre Inches		531.00	90.80	948.00	mg/L		1,086,172	4,804	822	8,577	78,897	
05/17/2023	Harvest	20.80	Tons	65.50	1.25	0.25	1.04	%							7,176
	Acre Inches Applied:	**9.00**						**Totals:**	**200**	**1,086,172**	**9,574**	**2,748**	**12,506**	**78,897**	**7,176**
Season Nitrogen Ratio:	1.33							**Lbs Per Acre:**			**239**	**69**	**313**	**1,972**	**179**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 106

Corn, 40 Acres Planted on 06/24/2023

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)
05/29/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/29/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		543,086	3,968	1,516	3,633	28,048	
07/15/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/25/2023	Ground Water: Well Avg	5.70	Acre Inches		23.75			mg/L			1,225	0	0	14,956	
07/25/2023	Waste Water: Main Lagoon	0.60	Acre Inches		633.00	205.00	658.00	mg/L		651,703	3,436	1,113	3,572	37,349	
08/12/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,182	0	0	14,431	
08/12/2023	Waste Water: Main Lagoon	0.60	Acre Inches		633.00	205.00	658.00	mg/L		651,703	3,436	1,113	3,572	37,349	
08/20/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,074	0	0	13,119	
09/07/2023	Harvest	29.20	Tons	63.70	1.35	0.28	0.67	%							11,448
	Acre Inches Applied:	**29.90**						**Totals:**		**1,846,492**	**14,322**	**3,741**	**10,777**	**145,253**	**11,448**
Season Nitrogen Ratio:	1.25							**Lbs Per Acre:**			**358**	**94**	**269**	**3,631**	**286**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 107

Wheat, 17 Acres Planted on 10/17/2022

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)
09/16/2022	Corral Solids: Main Corral	7.00	Tons	12.30	1.20	0.55	1.12	%	119		2,505	1,146	2,338	0	
09/30/2022	Ground Water: Well Avg	4.50	Acre Inches		6.48			mg/L			112	0	0	3,703	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			238				
02/23/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/23/2023	Waste Water: Main Lagoon	0.75	Acre Inches		531.00	90.80	948.00	mg/L		346,217	1,531	262	2,734	25,148	
05/17/2023	Harvest	18.70	Tons	64.10	1.70	0.43	2.09	%							3,880
	Acre Inches Applied:	**10.25**						**Totals:**	**119**	**346,217**	**4,386**	**1,408**	**5,072**	**28,852**	**3,880**
Season Nitrogen Ratio:	1.13							**Lbs Per Acre:**			**258**	**83**	**298**	**1,697**	**228**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 107

Corn, 17 Acres Planted on 06/25/2023

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)
05/21/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/21/2023	Waste Water: Main Lagoon	0.30	Acre Inches		877.00	335.00	803.00	mg/L		138,487	1,012	386	926	7,152	
07/11/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/22/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			457	0	0	5,576	
07/22/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		115,406	609	197	633	6,614	
08/19/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			502	0	0	6,133	
08/19/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		115,406	609	197	633	6,614	
09/02/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			502	0	0	6,133	
09/18/2023	Harvest	29.90	Tons	74.00	1.50	0.29	1.57	%							3,965
	Acre Inches Applied:	**28.80**						**Totals:**		**369,298**	**3,690**	**780**	**2,191**	**38,222**	**3,965**
Season Nitrogen Ratio:	0.93							**Lbs Per Acre:**			**217**	**46**	**129**	**2,248**	**233**

Season Notes: Nitrogen was entered using a book value due to an erroneous sample result.

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 108

Wheat, 43 Acres Planted on 12/01/2022

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)
11/15/2022	Corral Solids: Main Corral	5.00	Tons	12.30	1.20	0.55	1.12	%	215		4,525	2,070	4,223	0	
11/23/2022	Ground Water: Well Avg	5.00	Acre Inches		6.48			mg/L			315	0	0	10,407	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			602				
02/14/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/14/2023	Waste Water: Main Lagoon	1.00	Acre Inches		531.00	90.80	948.00	mg/L		1,167,635	5,165	883	9,220	84,814	
05/17/2023	Harvest	18.40	Tons	70.40	1.87	0.45	2.51	%							8,759
	Acre Inches Applied:	**10.00**						**Totals:**	**215**	**1,167,635**	**10,607**	**2,954**	**13,444**	**95,221**	**8,759**
Season Nitrogen Ratio:	1.21							**Lbs Per Acre:**			**247**	**69**	**313**	**2,214**	**204**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 108

Corn, 43 Acres Planted on 06/25/2023

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)
06/01/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/01/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		583,817	4,265	1,629	3,905	30,152	
07/14/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/28/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,155	0	0	14,103	
07/28/2023	Waste Water: Main Lagoon	0.35	Acre Inches		633.00	205.00	658.00	mg/L		408,672	2,155	698	2,240	23,421	
08/20/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,155	0	0	14,103	
08/20/2023	Waste Water: Main Lagoon	0.35	Acre Inches		633.00	205.00	658.00	mg/L		408,672	2,155	698	2,240	23,421	
09/03/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,155	0	0	14,103	
09/18/2023	Harvest	30.90	Tons	74.50	1.44	0.31	1.74	%							9,758
	Acre Inches Applied:	**28.20**						**Totals:**		**1,401,162**	**12,040**	**3,025**	**8,385**	**119,304**	**9,758**
Season Nitrogen Ratio:	1.23							**Lbs Per Acre:**			**280**	**70**	**195**	**2,775**	**227**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 110

Wheat, 21 Acres Planted on 10/19/2022

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)
12/05/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			123	0	0	4,066	
12/05/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		285,120	1,261	216	2,252	20,710	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			294				
02/16/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		285,120	1,261	216	2,252	20,710	
04/08/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/08/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		285,120	2,083	796	1,907	14,725	
05/17/2023	Harvest	18.80	Tons	68.20	2.23	0.47	2.19	%							5,599
	Acre Inches Applied:	**15.50**						**Totals:**		**855,360**	**5,022**	**1,227**	**6,410**	**60,212**	**5,599**
Season Nitrogen Ratio:	0.90							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**267**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 110

Corn, 21 Acres Planted on 06/22/2023

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)
06/08/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/08/2023	Waste Water: Main Lagoon	0.30	Acre Inches		877.00	335.00	803.00	mg/L		171,072	1,250	477	1,144	8,835	
07/12/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/13/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			564	0	0	6,888	
08/13/2023	Waste Water: Main Lagoon	0.40	Acre Inches		633.00	205.00	658.00	mg/L		228,096	1,203	390	1,250	13,072	
08/23/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			621	0	0	7,576	
09/11/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			587	0	0	7,163	
09/11/2023	Waste Water: Main Lagoon	0.40	Acre Inches		633.00	205.00	658.00	mg/L		228,096	1,203	390	1,250	13,072	
09/26/2023	Harvest	27.90	Tons	73.50	1.31	0.30	1.68	%							4,068
	Acre Inches Applied:	**28.80**						**Totals:**		**627,264**	**5,426**	**1,256**	**3,645**	**56,607**	**4,068**
Season Nitrogen Ratio:	1.33							**Lbs Per Acre:**			**258**	**60**	**174**	**2,696**	**194**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 111

Wheat, 43 Acres Planted on 10/20/2022

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)
12/10/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			252	0	0	8,326	
12/10/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		583,817	2,582	442	4,610	42,407	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			602				
02/20/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/20/2023	Waste Water: Main Lagoon	0.75	Acre Inches		531.00	90.80	948.00	mg/L		875,726	3,873	662	6,915	63,611	
04/12/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/12/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		583,817	4,265	1,629	3,905	30,152	
05/17/2023	Harvest	19.40	Tons	67.00	2.27	0.53	2.11	%							12,498
	Acre Inches Applied:	**15.75**						**Totals:**		**2,043,361**	**11,575**	**2,733**	**15,431**	**144,495**	**12,498**
Season Nitrogen Ratio:	0.93							**Lbs Per Acre:**			**269**	**64**	**359**	**3,360**	**291**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 111

Corn, 43 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)
05/23/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/23/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		467,054	3,412	1,303	3,124	24,121	
07/13/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/09/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,155	0	0	14,103	
08/09/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		291,909	1,539	498	1,600	16,730	
08/29/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,271	0	0	15,514	
09/10/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,201	0	0	14,667	
09/10/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		291,909	1,539	498	1,600	16,730	
09/26/2023	Harvest	30.30	Tons	72.10	1.07	0.26	1.59	%							7,779
	Acre Inches Applied:	**28.60**						**Totals:**		**1,050,871**	**10,118**	**2,300**	**6,324**	**101,864**	**7,779**
Season Nitrogen Ratio:	1.30							**Lbs Per Acre:**			**235**	**53**	**147**	**2,369**	**181**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 112

Wheat, 44 Acres Planted on 11/01/2022

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)
10/15/2022	Corral Solids: Main Corral	5.00	Tons	12.30	1.20	0.55	1.12	%	220		4,631	2,119	4,322	0	
10/23/2022	Ground Water: Well Avg	5.00	Acre Inches		6.48			mg/L			323	0	0	10,649	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			616				
01/19/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
01/19/2023	Waste Water: Main Lagoon	1.00	Acre Inches		531.00	90.80	948.00	mg/L		1,194,789	5,285	904	9,435	86,786	
03/28/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/19/2023	Harvest	19.60	Tons	70.90	1.98	0.41	3.42	%							9,938
	Acre Inches Applied:	**14.00**						**Totals:**	**220**	**1,194,789**	**10,854**	**3,022**	**13,757**	**97,436**	**9,938**
Season Nitrogen Ratio:	1.09							**Lbs Per Acre:**			**247**	**69**	**313**	**2,214**	**226**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023
Nutrient Applications (Attachment B)

Field Name: 112

Corn, 44 Acres Planted on 06/14/2023

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)
05/12/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/12/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		477,916	3,491	1,334	3,197	24,682	
06/21/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			1,229	0	0	15,008	
07/12/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/12/2023	Waste Water: Main Lagoon	0.60	Acre Inches		633.00	205.00	658.00	mg/L		716,874	3,780	1,224	3,929	41,084	
08/13/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			1,182	0	0	14,431	
08/13/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		597,395	3,150	1,020	3,274	34,237	
08/23/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,300	0	0	15,874	
08/27/2023	Harvest	28.90	Tons	62.90	1.24	0.30	1.15	%							11,700
	Acre Inches Applied:	**29.20**						**Totals:**		**1,792,184**	**14,133**	**3,578**	**10,400**	**145,317**	**11,700**
Season Nitrogen Ratio:	1.21							**Lbs Per Acre:**			**321**	**81**	**236**	**3,303**	**266**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023
Nutrient Applications (Attachment B)

Field Name: 113

Wheat, 32 Acres Planted on 11/11/2022

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)
09/16/2022	Corral Solids: Main Corral	7.00	Tons	12.30	1.20	0.55	1.12	%	224		4,715	2,157	4,400	0	
10/23/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			188	0	0	6,196	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			448				
02/24/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/24/2023	Waste Water: Main Lagoon	0.75	Acre Inches		531.00	90.80	948.00	mg/L		651,703	2,883	493	5,146	47,338	
03/24/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/22/2023	Harvest	19.80	Tons	68.10	1.97	0.35	2.23	%							7,964
	Acre Inches Applied:	**12.75**						**Totals:**	**224**	**651,703**	**8,233**	**2,650**	**9,547**	**53,534**	**7,964**
Season Nitrogen Ratio: 1.03								**Lbs Per Acre:**			**257**	**83**	**298**	**1,673**	**249**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 113

Corn, 32 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)
06/09/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/09/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		347,575	2,539	970	2,325	17,951	
07/15/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/16/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			860	0	0	10,495	
08/16/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		217,234	1,146	371	1,191	12,450	
08/26/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			946	0	0	11,545	
09/13/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			894	0	0	10,915	
09/13/2023	Waste Water: Main Lagoon	0.25	Acre Inches		529.00	99.30	697.00	mg/L		217,234	957	180	1,261	9,953	
10/04/2023	Harvest	29.00	Tons	73.80	1.13	0.23	1.00	%							5,495
	Acre Inches Applied:	**28.60**						**Totals:**		**782,044**	**7,341**	**1,521**	**4,777**	**73,309**	**5,495**
Season Nitrogen Ratio:	1.34							**Lbs Per Acre:**			**229**	**48**	**149**	**2,291**	**172**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 114

Wheat, 33 Acres Planted on 11/01/2022

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)
12/06/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			193	0	0	6,389	
12/06/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		448,046	1,982	339	3,538	32,545	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			462				
02/16/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		448,046	1,982	339	3,538	32,545	
04/10/2023	Surface Water: Laguna	4.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/10/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		448,046	3,273	1,250	2,997	23,140	
05/01/2023	Harvest	21.00	Tons	66.40	1.49	0.26	1.02	%							6,939
	Acre Inches Applied:	**14.50**						**Totals:**		**1,344,138**	**7,892**	**1,928**	**10,074**	**94,619**	**6,939**
Season Nitrogen Ratio:	1.14							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**210**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 114

Corn, 33 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)
06/08/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/08/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		358,437	2,619	1,000	2,397	18,512	
06/22/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			922	0	0	11,256	
07/12/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/12/2023	Waste Water: Main Lagoon	0.30	Acre Inches		633.00	205.00	658.00	mg/L		268,828	1,417	459	1,473	15,407	
08/13/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			886	0	0	10,823	
08/13/2023	Waste Water: Main Lagoon	0.25	Acre Inches		633.00	205.00	658.00	mg/L		224,023	1,181	382	1,228	12,839	
08/23/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			975	0	0	11,906	
09/01/2023	Harvest	28.40	Tons	63.10	1.02	0.32	1.32	%							7,055
	Acre Inches Applied:	**28.65**						**Totals:**		**851,287**	**8,001**	**1,842**	**5,099**	**80,743**	**7,055**
Season Nitrogen Ratio:	1.13							**Lbs Per Acre:**			**242**	**56**	**155**	**2,447**	**214**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 115

Wheat, 34 Acres Planted on 11/02/2022

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)
12/05/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			199	0	0	6,583	
12/05/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		461,623	2,042	349	3,645	33,531	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			476				
02/16/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		461,623	2,042	349	3,645	33,531	
04/08/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/08/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		461,623	3,372	1,288	3,088	23,841	
04/19/2023	Harvest	19.20	Tons	73.20	2.52	0.52	4.41	%							8,818
	Acre Inches Applied:	**15.50**						**Totals:**		**1,384,869**	**8,131**	**1,987**	**10,379**	**97,486**	**8,818**
Season Nitrogen Ratio:	0.92							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**259**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 115

Corn, 34 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)
06/08/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
06/08/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		369,298	2,698	1,031	2,470	19,073	
06/22/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			950	0	0	11,597	
07/13/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
07/13/2023	Waste Water: Main Lagoon	0.60	Acre Inches		633.00	205.00	658.00	mg/L		553,948	2,921	946	3,036	31,747	
08/13/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			913	0	0	11,151	
08/13/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		461,623	2,434	788	2,530	26,456	
08/23/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			1,005	0	0	12,267	
08/27/2023	Harvest	27.90	Tons	65.30	1.23	0.32	1.22	%							8,097
	Acre Inches Applied:	**29.20**						**Totals:**		**1,384,869**	**10,921**	**2,765**	**8,037**	**112,290**	**8,097**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**321**	**81**	**236**	**3,303**	**238**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 116

Wheat, 31 Acres Planted on 11/01/2022

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)
12/05/2022	Ground Water: Well Avg	4.00	Acre Inches		6.48			mg/L			182	0	0	6,002	
12/05/2022	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		420,892	1,862	318	3,324	30,573	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			434				
02/16/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
02/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches		531.00	90.80	948.00	mg/L		420,892	1,862	318	3,324	30,573	
04/08/2023	Surface Water: Laguna	5.00	Acre Inches		0.00			mg/L			0	0	0	0	
04/08/2023	Waste Water: Main Lagoon	0.50	Acre Inches		877.00	335.00	803.00	mg/L		420,892	3,075	1,175	2,815	21,738	
05/17/2023	Harvest	18.40	Tons	66.90	1.97	0.41	2.08	%							7,439
	Acre Inches Applied:	**15.50**						**Totals:**		**1,262,675**	**7,414**	**1,811**	**9,463**	**88,885**	**7,439**
Season Nitrogen Ratio:	1.00							**Lbs Per Acre:**			**239**	**58**	**305**	**2,867**	**240**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 116

Corn, 31 Acres Planted on 06/20/2023

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)
05/24/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
05/24/2023	Waste Water: Main Lagoon	0.40	Acre Inches		877.00	335.00	803.00	mg/L		336,713	2,460	940	2,252	17,390	
07/08/2023	Surface Water: Laguna	6.00	Acre Inches		0.00			mg/L			0	0	0	0	
08/10/2023	Ground Water: Well Avg	5.00	Acre Inches		23.75			mg/L			833	0	0	10,167	
08/10/2023	Waste Water: Main Lagoon	0.40	Acre Inches		633.00	205.00	658.00	mg/L		336,713	1,775	575	1,845	19,297	
08/20/2023	Ground Water: Well Avg	5.50	Acre Inches		23.75			mg/L			916	0	0	11,184	
09/08/2023	Ground Water: Well Avg	5.20	Acre Inches		23.75			mg/L			866	0	0	10,574	
09/08/2023	Waste Water: Main Lagoon	0.50	Acre Inches		633.00	205.00	658.00	mg/L		420,892	2,219	719	2,307	24,121	
09/26/2023	Harvest	30.40	Tons	72.50	1.34	0.28	1.56	%							6,946
	Acre Inches Applied:	**29.00**						**Totals:**		**1,094,318**	**9,069**	**2,234**	**6,405**	**92,734**	**6,946**
Season Nitrogen Ratio:	1.31							**Lbs Per Acre:**			**293**	**72**	**207**	**2,991**	**224**

INNOVATIVE AG SERVICES

River Oaks Dairy 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	35,024.15	16,024.32	32,687.96	0.00	1,664.00	tons
Process Wastewater	193,704.40	56,501.17	240,900.21	2,204,342.83	35,706,546.78	gallons
Irrigation Water	48,367.43					
Fertilizer / Total Imports	0.00					
Atmospheric Deposition	7,462.00					
Total Nitrogen Applied	**284,557.98**					
Crop Nitrogen Removal	245,831.21					
Nitrogen Balance	**38,726.77**					
Nitrogen Ratio	**1.16**					

- **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.**

INNOVATIVE AG SERVICES

River Oaks Dairy 2023
Nutrient Applications (Attachment B)

FIELD NITROGEN RATIO Calculation:

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

ATMOSHERIC DEPOSITION Applied (lbs) Calculation:

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

HARVEST Nitrogen Extraction (Lbs) Calculation:

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

IRRIGATION Nitrogen and Salts Applied (Lbs) Calculations:

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

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

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

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

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

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

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

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

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

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

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

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

"Lbs Applied per Acre" Calculations:

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

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

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

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

River Oaks Dairy 2023

Estimated Manure and Process Wastewater/Nutrients Transferred Off-Site (Attachment C)

A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE

Total Manure Exported (tons)*	Total Nitrogen Exported (lbs)**	Total Phosphorus Exported (lbs)**	Total Potassium Exported (lbs)**	Total Salts Exported (lbs)**
3,504	73,742.72	33,737.29	68,826.54	0.00

* 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.

River Oaks Dairy 2023

Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
101	x057 x051 x02S xxxx	47	Both
102	x055 x091 x59S xxxx, x057 x051 x01S xxxx	38	Process Wastewater
103	x055 x091 x59S xxxx	41	Both
104	x055 x091 x59S xxxx	41	Both
105	x055 x091 x59S xxxx	28	Process Wastewater
106	x055 x091 x59S xxxx	40	Both
107	x057 x051 x01S xxxx	17	Both
108	x057 x051 x02S xxxx	43	Both
110	x057 x051 x02S xxxx	21	Process Wastewater
111	x057 x051 x02S xxxx	43	Process Wastewater
112	x057 x051 x02S xxxx	44	Both
113	x055 x091 x59S xxxx	32	Both
114	x055 x091 x59S xxxx	33	Process Wastewater
115	x057 x051 x02S xxxx	34	Process Wastewater
116	x057 x051 x02S xxxx, x057 x051 x39S xxxx, x057 x051 x40S xxxx	31	Process Wastewater
		533	

Production Area APN(s): x057 x051 x02S xxxx

River Oaks Dairy 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
Exc.	03/09/2023	1,760.00	723.00	1,030.00	9,260	489.00		6,150.00								
	06/16/2023	877.00	335.00	803.00	9,340	484.00	0.01	6,200.00	7.57							
	07/14/2023	633.00	205.00	658.00	10,400	558.00		6,880.00								
	11/09/2023	529.00	99.30	697.00	8,280	526.00		5,500.00								
	Averages:	949.75	340.58	797.00	9,320	514.25	0.01	6,182.50	7.57							

Manure - Compost Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/05/2023	1.38	0.57	0.44	45.50						%
Averages:	1.38	0.57	0.44	45.50						

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/05/2023	2.88	1.58	2.05	22.20						%
11/09/2023	2.14	0.70	3.81	52.40						%
Averages:	2.51	1.14	2.93	37.30						

INNOVATIVE AG SERVICES

River Oaks Dairy 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 (%)
101	1	Wheat	05/23/2023	34.80	7.78	39.80	64.00	9.24
101	2	Corn	10/18/2023	25.00	4.68	23.20	65.40	5.73
102	1	Wheat	05/23/2023	35.80	7.52	37.60	64.70	8.97
102	2	Corn	09/27/2023	21.00	4.46	29.60	71.50	6.39
103	1	Wheat	05/23/2023	39.20	6.72	50.60	68.60	9.87
103	2	Corn	10/18/2023	23.80	4.40	23.20	66.70	5.59
104	1	Wheat	05/23/2023	37.20	6.38	47.20	70.20	9.46
104	2	Corn	10/18/2023	23.20	4.32	22.00	65.60	5.50
105	1	Wheat	05/22/2023	39.80	6.54	46.80	69.80	9.28
105	2	Corn	10/04/2023	24.60	4.52	20.80	74.40	5.90
106	1	Wheat	05/17/2023	25.00	5.04	20.80	65.50	7.57
106	2	Corn	09/07/2023	27.00	5.50	13.46	63.70	5.81
107	1	Wheat	05/17/2023	34.00	8.54	41.80	64.10	7.37
107	2	Corn	09/18/2023	30.00	5.82	31.40	74.00	6.23
108	1	Wheat	05/17/2023	37.40	8.96	50.20	70.40	11.10
108	2	Corn	09/18/2023	28.80	6.16	34.80	74.50	6.52
110	1	Wheat	05/17/2023	44.60	9.40	43.80	68.20	10.50
110	2	Corn	09/26/2023	26.20	5.90	33.60	73.50	6.50

INNOVATIVE AG SERVICES

River Oaks Dairy 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 (%)
111	1	Wheat	05/17/2023	45.40	10.58	42.20	67.00	11.60
111	2	Corn	09/26/2023	21.40	5.14	31.80	72.10	6.37
112	1	Wheat	04/19/2023	39.60	8.22	68.40	70.90	11.50
112	2	Corn	08/27/2023	24.80	6.08	23.00	62.90	2.14
113	1	Wheat	05/22/2023	39.40	7.04	44.60	68.10	9.06
113	2	Corn	10/04/2023	22.60	4.54	20.00	73.80	5.66
114	1	Wheat	05/01/2023	29.80	5.30	20.40	66.40	7.45
114	2	Corn	09/01/2023	20.40	6.46	26.40	63.10	5.84
115	1	Wheat	04/19/2023	50.40	10.36	88.20	73.20	12.60
115	2	Corn	08/27/2023	24.60	6.44	24.40	65.30	5.36
116	1	Wheat	05/17/2023	39.40	8.14	41.60	66.90	9.37
116	2	Corn	09/26/2023	26.80	5.66	31.20	72.50	6.88

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
Domestic													

INNOVATIVE AG SERVICES

River Oaks Dairy 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
Domestic														
DW1							Out of service.							
DW2	12/11/2023	3.90		247		160.00		9.00	0.00	45.00	90.00	0.00	5.60	6.00
DW3	12/11/2023	3.90		245		160.00		9.00	0.00	44.00	90.00	0.00	5.60	6.00
DW4	12/11/2023	0.00		155		80.00		4.00	0.00	32.00	50.00	20.00	0.80	2.00
DW5	12/11/2023	29.00		727		530.00		105.00	4.00	24.00	210.00	0.00	24.70	16.00
	Averages:	9.20		344		232.50		31.75	1.00	36.25	110.00	5.00	9.18	7.50
Irrigation														
IW-1							Out of service.							
IW-2	11/13/2023	12.00		336		240.00	12.00							
IW-3	11/17/2023	68.90		685		510.00	28.90	95.00	2.00	40.00	200.00	0.00	13.40	23.00
IW-4	11/13/2023	13.40		400		270.00	13.40							
IW-5							Out of service.							
IW-6	10/12/2023	0.70		193		140.00	0.70							
IW-7							Did not run.							
	Averages:	23.75		404		290.00	13.75	95.00	2.00	40.00	200.00	0.00	13.40	23.00
Surface Water														
Laguna (General)	07/06/2023	0.00		26		0.00	0.00							
	Averages:	0.00		26		0.00	0.00							

INNOVATIVE AG SERVICES

River Oaks Dairy 2023
Lab Results Summary (Attachment E)

* NH4N was non-detectable unless a value is shown

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

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 101								
	1	Wheat	47	11/23/2022	05/23/2023	19.3	888.3	18.9
	2	Corn	47	06/21/2023	10/18/2023	31.9	1447.6	30.8
Field: 102								
	1	Wheat	38	11/28/2022	05/23/2023	20.0	801.8	21.1
	2	Corn	38	06/23/2023	09/27/2023	28.4	1109.6	29.2
Field: 103								
	1	Wheat	41	11/08/2022	05/23/2023	20.0	832.3	20.3
	2	Corn	41	06/15/2023	10/18/2023	28.9	1209.5	29.5
Field: 104								
	1	Wheat	41	11/08/2022	05/23/2023	20.0	742.1	18.1
	2	Corn	41	06/22/2023	10/18/2023	30.1	1271.0	31.0
Field: 105								
	1	Wheat	28	11/29/2022	05/22/2023	19.0	546.0	19.5
	2	Corn	28	06/24/2023	10/04/2023	29.8	845.6	30.2
Field: 106								
	1	Wheat	40	10/17/2022	05/17/2023	21.0	832.0	20.8
	2	Corn	40	06/24/2023	09/07/2023	28.8	1168.0	29.2
Field: 107								
	1	Wheat	17	10/17/2022	05/17/2023	19.0	317.9	18.7
	2	Corn	17	06/25/2023	09/18/2023	30.0	508.3	29.9
Field: 108								
	1	Wheat	43	12/01/2022	05/17/2023	20.0	791.2	18.4
	2	Corn	43	06/25/2023	09/18/2023	30.7	1328.7	30.9

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 110								
	1	Wheat	21	10/19/2022	05/17/2023	19.4	394.8	18.8
	2	Corn	21	06/22/2023	09/26/2023	28.6	585.9	27.9
Field: 111								
	1	Wheat	43	10/20/2022	05/17/2023	19.8	834.2	19.4
	2	Corn	43	06/15/2023	09/26/2023	29.1	1302.9	30.3
Field: 112								
	1	Wheat	44	11/01/2022	04/19/2023	19.1	862.4	19.6
	2	Corn	44	06/14/2023	08/27/2023	30.0	1271.6	28.9
Field: 113								
	1	Wheat	32	11/11/2022	05/22/2023	20.0	633.6	19.8
	2	Corn	32	06/15/2023	10/04/2023	27.5	928.0	29.0
Field: 114								
	1	Wheat	33	11/01/2022	05/01/2023	20.2	693.0	21.0
	2	Corn	33	06/15/2023	09/01/2023	30.0	937.2	28.4
Field: 115								
	1	Wheat	34	11/02/2022	04/19/2023	20.0	652.8	19.2
	2	Corn	34	06/15/2023	08/27/2023	30.0	948.6	27.9
Field: 116								
	1	Wheat	31	11/01/2022	05/17/2023	20.0	570.4	18.4
	2	Corn	31	06/20/2023	09/26/2023	30.5	942.4	30.4

INNOVATIVE AG SERVICES

River Oaks Dairy 2023

Weather Data (Attachment G)

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	Light	None	Light	None	None	None	None	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

INNOVATIVE AG SERVICES

ATTACHMENT D

Manure/Process Wastewater Tracking Manifest
For
Existing Milk Cow Dairies

Instructions:

1) Complete one manifest for each hauling event, for each destination. A hauling event may last for several days, as long as the manure is being hauled to the same destination.
2) If there are multiple destinations, **complete a separate form for each destination**.
3) The operator must obtain the signature of the hauler upon completion of each manure-hauling event.
4) The operator shall submit copies of manure/process wastewater tracking manifest(s) with the Annual Monitoring Report for Existing Milk Cow Dairies.

Operator Information:

Name of Operator: Josh Zonneveld

Name of Dairy Facility: River Oaks Dairy

Facility Address: 3621 E. Mt. Whitney Avenue | Laton | 93242
Number and Street | City | Zip Code

Contact Person Name and Phone Number: Josh Zonneveld | (559) 923-4546
Name | Phone Number

Manure/Process Wastewater Hauler Information:

Name of Hauling Company/Person: Zonneveld Dairies

Address of Hauling Company /Person: 1560 E Cerini | Laton | 93242
Number and Street | City | Zip Code

Contact Person: Josh Zonneveld | (559) 923-4546
Name | Phone Number

Destination Information:

Composting Facility / Broker / Farmer / Other (identify) _____ (please circle one)

Contact information of Composting Facility, Broker, Farmer, or Other (as identified above):

Name	Number and Street	City	Zip Code	Phone Number
Zonneveld Farms	1560 E. Cerini	Laton	93242	(559) 923-4546

Manure/Process Wastewater Destination Address or Assessor's Parcel Number:

Number and Street	City	Zip Code	Assessor's Parcel Number
1560 E. Cerini	Laton	93242	

Dates Hauled: 1/12/23 - 12/15/23

Amount Hauled:

Enter the amount of manure hauled in tons or cubic yards (indicate the units used), the manure solids content (if amount reported in tons) or manure density (if amount reported in cubic yards), and the method used to calculate the amount:

Manure: 3503.55 Tons or Cubic Yards (indicate which units used)
Manure Solids Content (if amount reported in tons): 47.6%
Manure Density (if amount reported in cubic yards): _____

DocuSign Envelope ID: 1FCB215C-915D-4BC2-813F-3D6759E4D99F

Method used to determine amount of manure: _____

_____

Enter the amount of process wastewater hauled in gallons and the method used to determine the amount.

Process Wastewater: _____ Gallons

Method used to determine volume of process wastewater: _____

_____

Written Agreement:
Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2013-0122) with any party that receives process wastewater from the Operator for its own use? (please check one)

____ Yes _____ No

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.
_____ (Operator shall provide initials here to acknowledge this requirement).

Certification:
I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, 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 a fine and imprisonment for knowing violations.

Operator's Signature: DocuSigned by: 4C4A48EC17AE47B... Date: 6/25/2024

Hauler's Signature: DocuSigned by: 4C4A48EC17AE47B... Date: 6/25/2024

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 2, 2023

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

Lab No. : **VI 2346937**
Customer No. : **4018573**
Reference : **41496**

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
IW6	10/12/2023	10/12/2023	VI 2346937-001	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 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: JRD

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-11-03

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9415 W. Goshen Avenue
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FAX: (559)734-8435
CA ELAP Certification No. 2810

November 2, 2023

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

Description : IW6
Project : 0262 River Oaks Dairy

Lab No. : VI 2346937-001
Customer No. : 4018573
Reference : 41496
Sampled On : October 12, 2023 at 12:25
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			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:25	lcr
Nitrate Nitrogen	0.7	0.4	mg/L		1		10/13/2023	12:30	lfs	SM 4500-NO3 F	10/13/2023	15:40	lfs
Nitrogen, Total as Nitrogen	0.7	0.5	mg/L		1	l	10/25/2023	12:24	sta	Calc.	10/29/2023	18:25	lcr
Nitrate + Nitrite as N	0.7	0.4	mg/L		1		10/13/2023	12:30	lfs	SM 4500-NO3 F	10/13/2023	15:40	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	18:25	lcr
Conductivity	193	1	umhos/cm		1		11/02/2023	09:02	krh	SM 4500-H+B	11/02/2023	14:14	krh
Solids, Total Dissolved (TDS)	140	20	mg/L		1		10/16/2023	13:30	ctl	SM 2540 C	10/17/2023	11:00	ctl

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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CA ELAP Certification No. 2810

November 2, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346937
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(CC 2383609-002)	Dup	umhos/cm		0.1%	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	
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	
Nitrate + Nitrite as N	4500NO3F	10/13/2023:211567LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	95.3%	80-120	
			MS	mg/L	5.609	90.2%	66-125	
		(VI 2346895-001)	MSD	mg/L	5.609	93.7%	66-125	
			MSRPD	mg/L		2.5%	≤30.4	
Nitrate Nitrogen	4500NO3F	10/13/2023:211567LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	95.3%	80-120	
			MS	mg/L	5.609	90.2%	66-125	
		(VI 2346895-001)	MSD	mg/L	5.609	93.7%	66-125	
			MSRPD	mg/L		2.5%	≤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.

Explanation

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

Page 3 of 3

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Laboratory Analysis Work Order

Nº 41496

ID: # 0262 2346937 LABORATORY: FGL

SITE NAME: RIVER OAKS DAIRY

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: _____

RO 15.2°C Int THIOT

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	IW6	IRR	W2	10-12 / 12:25	Zeka			
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		10-12-23 / 3:20
2nd	ADB	FGL	10/12/23 1545	
3rd	ADB	FGL		10/12/23 1604
4th			10/12/23 1604	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: 10/12/23 17 Laboratory #: 10/12/23

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

November 28, 2023

Lab No. : **VI 2347659**
Customer No. : **4018573**
Reference : **42039**

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

Laboratory Report

Introduction: This report package contains a total of 4 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	(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
IW-2	11/13/2023	11/13/2023	VI 2347659-001	AGW
IW-4	11/13/2023	11/13/2023	VI 2347659-002	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 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: JRD

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-11-28

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November 28, 2023

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

Description : IW-2
Project : 0262 River Oaks Dairy

Lab No. : VI 2347659-001
Customer No. : 4018573
Reference : 42039
Sampled On : November 13, 2023 at 10:15
Sampled By : Zeke
Received On : November 13, 2023 at 16:00
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
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	11/17/2023	13:22	sta	EPA 351.2	11/25/2023	13:11	lcr
Nitrate Nitrogen	12.0	0.4	mg/L		1		11/14/2023	12:30	lfs	SM 4500-NO3 F	11/14/2023	14:10	lfs
Nitrogen, Total as Nitrogen	12.0	0.5	mg/L		1	l	11/17/2023	13:22	sta	Calc.	11/25/2023	13:11	lcr
Nitrate + Nitrite as N	12.0	0.4	mg/L		1		11/14/2023	12:30	lfs	SM 4500-NO3 F	11/14/2023	14:10	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	11/17/2023	13:22	sta	EPA 351.2	11/25/2023	13:11	lcr
Conductivity	336	1	umhos/cm		1		11/17/2023	12:02	krh	SM 4500-H+B	11/17/2023	13:05	krh
Solids, Total Dissolved (TDS)	240	20	mg/L		1		11/15/2023	09:30	ctl	SM 2540 C	11/16/2023	09:30	ctl

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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November 28, 2023

Innovative Ag Services, LLC
1201 Delta View Road
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Description : IW-4
Project : 0262 River Oaks Dairy

Lab No. : VI 2347659-002
Customer No. : 4018573
Reference : 42039
Sampled On : November 13, 2023 at 10:00
Sampled By : Zeke
Received On : November 13, 2023 at 16:00
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
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	11/17/2023	13:22	sta	EPA 351.2	11/25/2023	13:13	lcr
Nitrate Nitrogen	13.4	0.4	mg/L		1		11/14/2023	12:30	lfs	SM 4500-NO3 F	11/14/2023	14:12	lfs
Nitrogen, Total as Nitrogen	13.4	0.5	mg/L		1	l	11/17/2023	13:22	sta	Calc.	11/25/2023	13:13	lcr
Nitrate + Nitrite as N	13.4	0.4	mg/L		1		11/14/2023	12:30	lfs	SM 4500-NO3 F	11/14/2023	14:12	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	11/17/2023	13:22	sta	EPA 351.2	11/25/2023	13:13	lcr
Conductivity	400	1	umhos/cm		1		11/17/2023	12:02	krh	SM 4500-H+B	11/17/2023	13:40	krh
Solids, Total Dissolved (TDS)	270	20	mg/L		1		11/15/2023	09:30	ctl	SM 2540 C	11/16/2023	09:30	ctl

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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November 28, 2023
Innovative Ag Services, LLC

Lab No. : VI 2347659
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2347762-003)	Dup	umhos/cm		0.4%	5	
Solids, Total Dissolved	2540CE	11/15/2023:213014CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	98.3%	90-110	
		(SP 2318981-001)	Dup	mg/L		1.72%	5	
		(SP 2318981-001)	Dup	mg/L		1.07%	5	
Nitrogen, Total Kjeldahl	351.2	11/17/2023:213108STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	90.9%	73-124	
			MS	mg/L	12.00	87.0%	90-110	435
		(STK2355748-001)	MSD	mg/L	12.00	85.7%	90-110	435
			MSRPD	mg/L		1.2%	≤20	
			MS	mg/L	12.00	65.9%	<¼	406
		(VI 2347632-001)	MSD	mg/L	12.00	71.2%	<1/4	
			MSRPD	mg/L		7.9%	≤20	
Nitrate + Nitrite as N	4500NO3F	11/14/2023:212983LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.9%	80-120	
			MS	mg/L	5.609	94.8%	66-125	
		(SP 2318954-001)	MSD	mg/L	5.609	97.1%	66-125	
			MSRPD	mg/L		1.8%	≤30.4	
Nitrate Nitrogen	4500NO3F	11/14/2023:212983LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.9%	80-120	
			MS	mg/L	5.609	94.8%	66-125	
		(SP 2318954-001)	MSD	mg/L	5.609	97.1%	66-125	
			MSRPD	mg/L		1.8%	≤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.

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 42039

6.7°C ROI ID#TH407 2347659

ID: # 0262

LABORATORY: FGL

SITE NAME: RIVER OAKS DAIRY

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	IW-2	IRR	W2	11-13 / 10:15	Zeke			
2	IW-4	IRR	W2	11-13 / 10:00	Zeke			
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:

BLS 11/14/23 1045

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		11-13-23 / 2:50
2nd	SKB	FGL	11-13-23 15:48	
3rd	SKB	FGL		11-13-23 16:00
4th		FGL	11-13-2023 1600	

Rel: 1008

LABORATORY USE ONLY

Logged in By: GLS Rec'd 11-13-2023 1730 Total Samples: _____ Laboratory #: _____

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

November 28, 2023

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

Lab No. : **VI 2347825**
Customer No. : **4018573**
Reference : **42068**

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
I-W3	11/17/2023	11/17/2023	VI 2347825-001	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)
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: 2023-11-28

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November 28, 2023

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

Description : I-W3
Project : 0262 River Oaks Dairy

Lab No. : VI 2347825-001
Customer No. : 4018573
Reference : 42068
Sampled On : November 17, 2023 at 10:20
Sampled By : Zeke
Received On : November 17, 2023 at 16:10
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)	160	10	mg/L		1		11/20/2023	18:16	amm	SM 4500-H+B	11/20/2023	23:38	amm
Bicarbonate	200	10	mg/L		1		11/20/2023	18:16	amm	SM 4500-H+B	11/20/2023	23:38	amm
Carbonate	ND	10	mg/L		1	U	11/20/2023	18:16	amm	SM 4500-H+B	11/20/2023	23:38	amm
Hydroxide	ND	10	mg/L		1	U	11/20/2023	18:16	amm	SM 4500-H+B	11/20/2023	23:38	amm
Chloride	23	1	mg/L		1		11/26/2023	07:23	ldm	EPA 300.0	11/26/2023	15:51	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	11/21/2023	14:22	sta	EPA 351.2	11/25/2023	13:49	lcr
Nitrate Nitrogen	28.9	0.4	mg/L		1		11/22/2023	11:30	lfs	SM 4500-NO3 F	11/22/2023	13:57	lfs
Nitrogen, Total as Nitrogen	28.9	0.5	mg/L		1	l	11/21/2023	14:22	sta	Calc.	11/25/2023	13:49	lcr
Nitrate + Nitrite as N	28.9	0.4	mg/L		1		11/22/2023	11:30	lfs	SM 4500-NO3 F	11/22/2023	13:57	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	11/21/2023	14:22	sta	EPA 351.2	11/25/2023	13:49	lcr
Conductivity	685	1	umhos/cm		1		11/20/2023	18:16	amm	SM 4500-H+B	11/20/2023	23:38	amm
Sulfate Sulfur	13.4	0.17	mg/L		1		11/26/2023	07:23	ldm	EPA 300.0	11/26/2023	15:51	ldm
Solids, Total Dissolved (TDS)	510	20	mg/L		1		11/20/2023	10:20	ctl	SM 2540 C	11/21/2023	12:00	ctl
Calcium	95	1	mg/L		1		11/22/2023	08:05	ejc	EPA 200.7	11/22/2023	14:22	ac
Magnesium	2	1	mg/L		1		11/22/2023	08:05	ejc	EPA 200.7	11/22/2023	14:22	ac
Sodium	40	1	mg/L		1	l	11/22/2023	08:05	ejc	EPA 200.7	11/22/2023	14:22	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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November 28, 2023
Innovative Ag Services, LLC

Lab No. : VI 2347825
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	11/22/2023:213289EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.2%	85-115	
			MS	mg/L	12.00	130%	<¼	406
		(SP 2319304-001)	MSD	mg/L	12.00	76.3%	75-125	
			MSRPD	mg/L		5.4%	≤20.0	
			MS	mg/L	12.00	-182%	<¼	406
		(CH 2379564-001)	MSD	mg/L	12.00	60.0%	<1/4	
			MSRPD	mg/L		22.4%	≤20.0	435
Magnesium	200.7	11/22/2023:213289EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	100%	85-115	
			MS	mg/L	12.00	108%	75-125	
		(SP 2319304-001)	MSD	mg/L	12.00	88.2%	75-125	
			MSRPD	mg/L		5.3%	≤20	
			MS	mg/L	12.00	83.3%	75-125	
		(CH 2379564-001)	MSD	mg/L	12.00	101%	75-125	
			MSRPD	mg/L		11.6%	≤20	
Sodium	200.7	11/22/2023:213289EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.4%	85-115	
			MS	mg/L	12.00	149%	<¼	406
		(SP 2319304-001)	MSD	mg/L	12.00	69.5%	<1/4	
			MSRPD	mg/L		6.3%	≤20.0	
			MS	mg/L	12.00	49.3%	75-125	435
		(CH 2379564-001)	MSD	mg/L	12.00	96.2%	75-125	
			MSRPD	mg/L		17.1%	≤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 28, 2023
Innovative Ag Services, LLC

Lab No. : VI 2347825
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	11/20/2023:213232AMM	ND	mg/L		0.5%	10	435
Bicarbonate	2320B	(VI 2347705-001)	Dup	mg/L		0.5%	10	
E. C.	2320B	(VI 2347705-001)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	11/20/2023:213202CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
		(CH 2379794-001)	Dup	mg/L		2.15%	5	
		(CH 2379794-001)	Dup	mg/L		1.67%	5	
Chloride	300.0	11/26/2023:213349LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.8%	90-110	
			MS	mg/L	50.00	94.4%	67-117	
		(CH 2379092-002)	MSD	mg/L	50.00	94.5%	67-117	
			MSRPD	mg/L		0.1%	≤7	
			MS	mg/L	50.00	101%	67-117	
		(CH 2379092-003)	MSD	mg/L	50.00	102%	67-117	
			MSRPD	mg/L		0.2%	≤7	
Sulfate Sulfur	300.0	11/26/2023:213349LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101%	90-110	
			MS	mg/L	100.0	99.0%	18-165	
		(CH 2379092-002)	MSD	mg/L	100.0	99.1%	18-165	
			MSRPD	mg/L		0.1%	≤7	
			MS	mg/L	100.0	98.5%	18-165	
		(CH 2379092-003)	MSD	mg/L	100.0	98.8%	18-165	
			MSRPD	mg/L		0.2%	≤7	
Nitrogen, Total Kjeldahl	351.2	11/21/2023:213242STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	82.1%	73-124	
			MS	mg/L	12.00	82.9%	90-110	435
		(VI 2347758-001)	MSD	mg/L	12.00	82.1%	90-110	435
			MSRPD	mg/L		0.9%	≤20	
			MS	mg/L	12.00	80.2%	90-110	435
		(VI 2347724-001)	MSD	mg/L	12.00	79.8%	90-110	435
			MSRPD	mg/L		0.4%	≤20	
Nitrate + Nitrite as N	4500NO3F	11/22/2023:213299LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.5%	80-120	
			MS	mg/L	5.609	95.7%	66-125	
		(SP 2319413-001)	MSD	mg/L	5.609	92.8%	66-125	
			MSRPD	mg/L		2.0%	≤30.4	
Nitrate Nitrogen	4500NO3F	11/22/2023:213299LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.5%	80-120	
			MS	mg/L	5.609	95.7%	66-125	
		(SP 2319413-001)	MSD	mg/L	5.609	92.8%	66-125	
			MSRPD	mg/L		2.0%	≤30.4	

Page 4 of 5

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

Laboratory Analysis Work Order

Nº 42068

8.7°C Rec
ID #TH407
2347825

ID: # 0262

LABORATORY: FGL

SITE NAME: RIVER OAKS DAIRY

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	1-W3	IRR	W5	11-17-/10:20	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		11-17-23 / 2:40
2nd	ASB	FGL	11/17/23 1553	
3rd	ASB	FGL		11/17/23 1610
4th	[illegible]	FGL	11-17-2023 1610	

LABORATORY USE ONLY
Rec'd [illegible] 11-17-2023 1730
Logged In By: _____ Total Samples: _____ Laboratory #: [illegible] 11/18/23

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

December 22, 2023

Lab No. : **VI 2348414**
Customer No. : **4018573**
Reference : **42147**

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

Laboratory Report

Introduction: This report package contains a total of 10 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(4 pages)	: Results for each sample submitted.
Quality Control	(5 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
DW2	12/11/2023	12/11/2023	VI 2348414-001	DW
DW3	12/11/2023	12/11/2023	VI 2348414-002	DW
DW4	12/11/2023	12/11/2023	VI 2348414-003	DW
DW5	12/11/2023	12/11/2023	VI 2348414-004	DW

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)
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: 2023-12-24

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December 22, 2023

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

Description : DW2
Project : 0262 River Oaks Dairy

Lab No. : VI 2348414-001
Customer No. : 4018573
Reference : 42147
Sampled On : December 11, 2023 at 09:20
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
Alkalinity (as CaCO3)	80	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:50	amm
Bicarbonate	90	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:50	amm
Carbonate	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:50	amm
Hydroxide	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:50	amm
Chloride	6	1	mg/L	500[2]	1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	23:22	ldm
Nitrate Nitrogen	3.9	0.1	mg/L	10	1	1	12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	23:22	ldm
Conductivity	247	1	umhos/cm	1600[2]	1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:50	amm
Sulfate Sulfur	5.6	0.17	mg/L		1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	23:22	ldm
Solids, Total Dissolved (TDS)	160	20	mg/L	1000[2]	1		12/13/2023	13:20	ctl	SM 2540 C	12/14/2023	11:30	ctl
Calcium	9	1	mg/L		1		12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	12:10	ac
Magnesium	ND	1	mg/L		1	U	12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	12:10	ac
Potassium	ND	1	mg/L		1	U	12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	12:10	ac
Sodium	45	1	mg/L		1		12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	12:10	ac

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

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

December 22, 2023

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Description : DW3
Project : 0262 River Oaks Dairy

Lab No. : VI 2348414-002
Customer No. : 4018573
Reference : 42147
Sampled On : December 11, 2023 at 09:30
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
Alkalinity (as CaCO3)	80	10	mg/L		1	I	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	20:41	amm
Bicarbonate	90	10	mg/L		1	I	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	20:41	amm
Carbonate	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	20:41	amm
Hydroxide	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	20:41	amm
Chloride	6	1	mg/L	500[2]	1		12/12/2023	14:05	ldm	EPA 300.0	12/13/2023	05:17	ldm
Nitrate Nitrogen	3.9	0.1	mg/L	10	1		12/12/2023	14:05	ldm	EPA 300.0	12/13/2023	05:17	ldm
Conductivity	245	1	umhos/cm	1600[2]	1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	20:41	amm
Sulfate Sulfur	5.6	0.17	mg/L		1		12/12/2023	14:05	ldm	EPA 300.0	12/13/2023	05:17	ldm
Solids, Total Dissolved (TDS)	160	20	mg/L	1000[2]	1		12/13/2023	13:20	ctl	SM 2540 C	12/14/2023	11:30	ctl
Calcium	9	1	mg/L		1		12/18/2023	07:55	ejc	EPA 200.7	12/19/2023	11:41	ac
Magnesium	ND	1	mg/L		1	U	12/18/2023	07:55	ejc	EPA 200.7	12/19/2023	11:41	ac
Potassium	ND	1	mg/L		1	U	12/18/2023	07:55	ejc	EPA 200.7	12/19/2023	11:41	ac
Sodium	44	1	mg/L		1		12/18/2023	07:55	ejc	EPA 200.7	12/19/2023	11:41	ac

DQF Flags Definition:
I The RPD for the laboratory duplicate exceeded laboratory criteria.
U Constituent results were non-detect.

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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December 22, 2023

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

Description : DW4
Project : 0262 River Oaks Dairy

Lab No. : VI 2348414-003
Customer No. : 4018573
Reference : 42147
Sampled On : December 11, 2023 at 09:50
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
Alkalinity (as CaCO3)	70	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/14/2023	00:09	amm
Bicarbonate	50	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/14/2023	00:09	amm
Carbonate	20	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/14/2023	00:09	amm
Hydroxide	20	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/14/2023	00:09	amm
Chloride	2	1	mg/L	500[2]	1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	20:55	ldm
Nitrate Nitrogen	ND	0.1	mg/L	10	1	Ul	12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	20:55	ldm
Conductivity	155	1	umhos/cm	1600[2]	1		12/13/2023	17:00	amm	SM 4500-H+B	12/14/2023	00:09	amm
Sulfate Sulfur	0.8	0.17	mg/L		1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	20:55	ldm
Solids, Total Dissolved (TDS)	80	20	mg/L	1000[2]	1		12/13/2023	13:20	ctl	SM 2540 C	12/14/2023	11:30	ctl
Calcium	4	1	mg/L		1		12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	14:07	ac
Magnesium	ND	1	mg/L		1	U	12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	14:07	ac
Potassium	ND	1	mg/L		1	U	12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	14:07	ac
Sodium	32	1	mg/L		1		12/13/2023	03:55	ejc	EPA 200.7	12/13/2023	14:07	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
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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December 22, 2023

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

Description : DW5
Project : 0262 River Oaks Dairy

Lab No. : VI 2348414-004
Customer No. : 4018573
Reference : 42147
Sampled On : December 11, 2023 at 09:40
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
Alkalinity (as CaCO3)	170	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:40	amm
Bicarbonate	210	10	mg/L		1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:40	amm
Carbonate	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:40	amm
Hydroxide	ND	10	mg/L		1	U	12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:40	amm
Chloride	16	1	mg/L	500[2]	1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	20:13	ldm
Nitrate Nitrogen	29	0.3*	mg/L	10	3	l	12/12/2023	11:49	ldm	EPA 300.0	12/13/2023	11:33	ldm
Conductivity	727	1	umhos/cm	1600[2]	1		12/13/2023	17:00	amm	SM 4500-H+B	12/13/2023	22:40	amm
Sulfate Sulfur	24.7	0.17	mg/L		1		12/12/2023	11:49	ldm	EPA 300.0	12/12/2023	20:13	ldm
Solids, Total Dissolved (TDS)	530	20	mg/L	1000[2]	1		12/13/2023	13:20	ctl	SM 2540 C	12/14/2023	11:30	ctl
Calcium	105	1	mg/L		1		12/19/2023	07:45	ejc	EPA 200.7	12/19/2023	18:42	ac
Magnesium	4	1	mg/L		1		12/19/2023	07:45	ejc	EPA 200.7	12/19/2023	18:42	ac
Potassium	ND	1	mg/L		1	U	12/19/2023	07:45	ejc	EPA 200.7	12/19/2023	18:42	ac
Sodium	24	1	mg/L		1		12/19/2023	07:45	ejc	EPA 200.7	12/19/2023	18:42	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 * RL adjusted for dilution, Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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December 22, 2023
Innovative Ag Services, LLC

Lab No. : VI 2348414
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	12/13/2023:214008EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.6%	85-115	
			MS	mg/L	12.00	96.1%	75-125	
		(CH 2390218-003)	MSD	mg/L	12.00	96.9%	75-125	
			MSRPD	mg/L		0.5%	≤20.0	
			MS	mg/L	12.00	93.0%	75-125	
		(CH 2390218-002)	MSD	mg/L	12.00	107%	75-125	
			MSRPD	mg/L		3.9%	≤20.0	
	200.7	12/18/2023:214203EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	99.1%	85-115	
			MS	mg/L	12.00	95.7%	75-125	
		(VI 2348524-001)	MSD	mg/L	12.00	75.8%	75-125	
			MSRPD	mg/L		3.1%	≤20.0	
			MS	mg/L	12.00	123%	75-125	
		(SP 2320618-001)	MSD	mg/L	12.00	92.7%	75-125	
			MSRPD	mg/L		3.2%	≤20.0	
	200.7	12/19/2023:214261EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.2%	85-115	
			MS	mg/L	12.00	88.4%	75-125	
		(CH 2390448-001)	MSD	mg/L	12.00	103%	75-125	
			MSRPD	mg/L		8.5%	≤20.0	
			MS	mg/L	12.00	99.9%	75-125	
		(CC 2384368-001)	MSD	mg/L	12.00	98.8%	75-125	
			MSRPD	mg/L		0.2%	≤20.0	
Magnesium	200.7	12/13/2023:214008EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.0%	85-115	
			MS	mg/L	12.00	94.1%	75-125	
		(CH 2390218-003)	MSD	mg/L	12.00	93.6%	75-125	
			MSRPD	mg/L		0.4%	≤20	
			MS	mg/L	12.00	95.1%	75-125	
		(CH 2390218-002)	MSD	mg/L	12.00	99.7%	75-125	
			MSRPD	mg/L		2.8%	≤20	
	200.7	12/18/2023:214203EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	97.8%	85-115	
			MS	mg/L	12.00	103%	75-125	
		(VI 2348524-001)	MSD	mg/L	12.00	99.2%	75-125	
			MSRPD	mg/L		3.1%	≤20	
			MS	mg/L	12.00	112%	75-125	
		(SP 2320618-001)	MSD	mg/L	12.00	92.4%	75-125	
			MSRPD	mg/L		5.1%	≤20	
	200.7	12/19/2023:214261EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.1%	85-115	
			MS	mg/L	12.00	90.1%	75-125	
		(CH 2390448-001)	MSD	mg/L	12.00	100%	75-125	
			MSRPD	mg/L		7.9%	≤20	
			MS	mg/L	12.00	96.8%	75-125	

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December 22, 2023
Innovative Ag Services, LLC

Lab No. : VI 2348414
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
		(CC 2384368-001)	MSD	mg/L	12.00	97.9%	75-125	
			MSRPD	mg/L		0.4%	≤20	
Potassium	200.7	12/13/2023:214008EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.2%	85-115	
			MS	mg/L	12.00	95.6%	75-125	
		(CH 2390218-003)	MSD	mg/L	12.00	95.1%	75-125	
			MSRPD	mg/L		0.5%	≤20.0	
			MS	mg/L	12.00	99.5%	75-125	
		(CH 2390218-002)	MSD	mg/L	12.00	103%	75-125	
			MSRPD	mg/L		2.9%	≤20.0	
	200.7	12/18/2023:214203EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.4%	85-115	
			MS	mg/L	12.00	100%	75-125	
		(VI 2348524-001)	MSD	mg/L	12.00	97.3%	75-125	
			MSRPD	mg/L		3.0%	≤20.0	
			MS	mg/L	12.00	105%	75-125	
		(SP 2320618-001)	MSD	mg/L	12.00	100%	75-125	
			MSRPD	mg/L		3.0%	≤20.0	
	200.7	12/19/2023:214261EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.6%	85-115	
			MS	mg/L	12.00	90.7%	75-125	
		(CH 2390448-001)	MSD	mg/L	12.00	102%	75-125	
			MSRPD	mg/L		8.3%	≤20.0	
			MS	mg/L	12.00	96.6%	75-125	
		(CC 2384368-001)	MSD	mg/L	12.00	96.6%	75-125	
			MSRPD	mg/L		0.0%	≤20.0	
Sodium	200.7	12/13/2023:214008EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	92.3%	85-115	
			MS	mg/L	12.00	96.8%	75-125	
		(CH 2390218-003)	MSD	mg/L	12.00	97.1%	75-125	
			MSRPD	mg/L		0.2%	≤20.0	
			MS	mg/L	12.00	99.6%	75-125	
		(CH 2390218-002)	MSD	mg/L	12.00	106%	75-125	
			MSRPD	mg/L		3.6%	≤20.0	
	200.7	12/18/2023:214203EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.7%	85-115	
			MS	mg/L	12.00	101%	75-125	
		(VI 2348524-001)	MSD	mg/L	12.00	85.0%	75-125	
			MSRPD	mg/L		2.9%	≤20.0	
			MS	mg/L	12.00	158%	<¼	406
		(SP 2320618-001)	MSD	mg/L	12.00	56.2%	<1/4	
			MSRPD	mg/L		6.2%	≤20.0	
	200.7	12/19/2023:214261EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	91.7%	85-115	
			MS	mg/L	12.00	86.7%	75-125	
		(CH 2390448-001)	MSD	mg/L	12.00	103%	75-125	
			MSRPD	mg/L		8.2%	≤20.0	
			MS	mg/L	12.00	96.4%	75-125	
		(CC 2384368-001)	MSD	mg/L	12.00	96.0%	75-125	
			MSRPD	mg/L		0.1%	≤20.0	

Page 7 of 10

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.

Page 8 of 10

December 22, 2023
Innovative Ag Services, LLC

Lab No. : VI 2348414
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	12/13/2023:214042AMM	ND	mg/L		12.3%	10	406
		(VI 2348413-004)	Dup	mg/L		0.2%	10	
Bicarbonate	2320B	(SP 2320358-001)	Dup	mg/L		12.4%	10	440
		(VI 2348413-004)	Dup	mg/L		0.2%	10	
E. C.	2320B	(SP 2320358-001)	Dup	umhos/cm		0%	5	
		(VI 2348413-004)	Dup	umhos/cm		0.2%	5	
Solids, Total Dissolved	2540CE	12/13/2023:214037CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	99.8%	90-110	
		(VI 2348409-002)	Dup	mg/L		0.5%	5	
		(VI 2348409-002)	Dup	mg/L		0.3%	5	
Chloride	300.0	12/12/2023:214041LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	98.1%	90-110	
			MS	mg/L	50.00	85.9%	67-117	
		(CH 2390217-006)	MSD	mg/L	50.00	90.5%	67-117	
			MSRPD	mg/L		2.9%	≤7	
			MS	mg/L	50.00	101%	67-117	
		(CH 2390218-003)	MSD	mg/L	50.00	101%	67-117	
			MSRPD	mg/L		0.2%	≤7	
			Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	98.8%	90-110	
			MS	mg/L	50.00	100%	67-117	
		(VI 2348413-005)	MSD	mg/L	50.00	100%	67-117	
			MSRPD	mg/L		0.0%	≤7	
			MS	mg/L	50.00	99.0%	67-117	
		(VI 2348413-002)	MSD	mg/L	50.00	99.3%	67-117	
			MSRPD	mg/L		0.3%	≤7	
Nitrate Nitrogen	300.0	12/12/2023:214041LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	98.3%	90-110	
			MS	mg/L	40.00	61.8%	86-112	435
		(CH 2390217-006)	MSD	mg/L	40.00	70.6%	86-112	435
			MSRPD	mg/L		3.2%	≤7	
			MS	mg/L	40.00	103%	86-112	
		(CH 2390218-003)	MSD	mg/L	40.00	103%	86-112	
			MSRPD	mg/L		0.1%	≤7	
			Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	97.6%	90-110	
			MS	mg/L	40.00	87.8%	86-112	
		(VI 2348413-005)	MSD	mg/L	40.00	87.7%	86-112	
			MSRPD	mg/L		0.1%	≤7	
			MS	mg/L	40.00	86.3%	86-112	
		(VI 2348413-002)	MSD	mg/L	40.00	86.4%	86-112	
			MSRPD	mg/L		0.0%	≤7	
Sulfate Sulfur	300.0	12/12/2023:214041LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	99.5%	90-110	
			MS	mg/L	100.0	93.9%	18-165	
		(CH 2390217-006)	MSD	mg/L	100.0	97.5%	18-165	
			MSRPD	mg/L		3.0%	≤7	
			MS	mg/L	100.0	102%	18-165	
		(CH 2390218-003)	MSD	mg/L	100.0	102%	18-165	
			MSRPD	mg/L		0.1%	≤7	

Page 9 of 10

December 22, 2023

Innovative Ag Services, LLC

Lab No. : VI 2348414
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
			Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	100%	90-110	
			MS	mg/L	100.0	101%	18-165	
		(VI 2348413-005)	MSD	mg/L	100.0	101%	18-165	
			MSRPD	mg/L		0.0%	≤7	
			MS	mg/L	100.0	99.6%	18-165	
		(VI 2348413-002)	MSD	mg/L	100.0	100%	18-165	
			MSRPD	mg/L		0.3%	≤7	

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.

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

Page 10 of 10

Laboratory Analysis Work Order

Nº 42147

2348414

ID: # D262

LABORATORY: FGL

SITE NAME: River Oaks Dairy

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	DW 2	DOM	W4	12-11	9:20	Zeke			
2	DW 3				9:30				
3	DW 4				9:50				
4	DW 5				9:40				
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: Ice 8.9°C ID# TH2407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time		Relinquished Date & Time
1st		IAS			12-11-23 / 12:35
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	1720	
		GLS	12-4-23	1730	

LABORATORY USE ONLY

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

GLS MC 12/12/23 1013

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