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INNOVATIVE
AG SERVICES

A & L 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)

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Annual Report

A & L Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	A & L Dairy
Facility Address	23863 Road 48, Tulare CA 93274

Owner/Operator as of 12/31/2023

Operator Name	Ryan Riezebos
Operator Phone	(559) 799-6464
Owner Name	Ryan Riezebos
Owner Phone	(559) 799-6464

1. Beginning and end dates of the annual reporting period: crops harvested January 1, 2023 through December 31, 2023.

2. Maximum and average number and type of animals (see Attachment A).

3. Estimated amount of total manure and process wastewater generated by the facility (see Attachment A).

4. Estimated amount of total manure and process wastewater applied to each land application area (see Attachment B).

5. Quantified ratio of total nitrogen applied to land application areas and total nitrogen removed by crop harvest (see Attachment B).

6. Estimated amount of total manure and process wastewater transferred to other persons by the facility (see Attachment C).

7. Total number of acres and the Assessor Parcel Numbers for all land application areas that were not used for application of manure or process wastewater (see Attachment D).

8. Total number of acres and the Assessor Parcel Numbers for all land application areas that were used for land application of manure and process wastewater (see Attachment D).

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

X No discharges occurred during the reporting period.

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

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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.

__ Not applicable; no written agreements.

X No changes in agreement(s).

__ Yes, a new or revised agreement is attached.

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

X Not Applicable.

__ Yes, provided with Attachment H, I, or J for #9, 10 and 11, respectively.

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

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CENTRAL VALLEY REGION

17. Record-Keeping Results

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

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

18. Groundwater Monitoring Section

X Groundwater monitoring results are attached.

__ Monitoring Well results are attached, if applicable.

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

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

19. Storm Water Reporting Section

X No significant discharges of storm water occurred from the land application areas.

__ Yes, significant discharge(s) of storm water occurred from land application areas. The following information shall be submitted for those discharges.

__ It was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions.

20. Mortality Management Practices

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

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A & L Dairy 2023

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"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Same as owner	DocuSigned by: AF89CF8B38BE4D6...
Signature of Operator of Facility	Signature of Owner of Facility
Ryan Riezebos	Ryan Riezebos
Print Name	Print Name
	6/19/2024
Title and Date	Title and Date

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A & L 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	510	497	Milk Freestall -	1,400	12,613.31	179,590.95	30,838.85	41,723.15	327,617.43
Hol Dry Cows	45	43	Dry Scrape	1,450	627.46	7,847.50	1,098.65	5,179.35	11,074.39
Hol Heifers(15-24)	100	97	Dry Scrape	1,000	1,012.54	13,453.90	2,124.30	6,372.90	24,981.77
	655	**637**			**14,253.31**	**200,892.35**	**34,061.80**	**53,275.40**	**363,673.59**

* 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)**
6,536,855	1,614.75	346.25	1,475.00	10,620.00	87,926.37	18,854.00	80,316.70	578,280.23

* The average Total Kjeldahl Nitrogen, Total Phosphorus, Total Potassium, and Total Salt concentrations are based on an average of all process wastewater sample results for the year.
** The total pounds of Nitrogen, Phosphorus, Potassium and Total Dissolved Solids generated = Average Concentration (mg/L) X Total Gallons of Wastewater Generated X 8.33 X 0.000001.
*** The total gallons of process wastewater generated is calculated as the total gallons of process wastewater applied to all land application areas (Attachment B) plus the total gallons of process wastewater transferred offsite (Attachment C).

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 1

Wheat, 13 Acres Planted on 12/11/2022

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)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			182				
01/04/2023	Surface Water: Tulare	4.44	Acre Inches		0.00			mg/L			0	0	0	392	
01/04/2023	Waste Water: Main Lagoon	0.21	Acre Inches		959.00	196.00	1,200.0	mg/L		74,131	592	121	741	4,619	
03/03/2023	Surface Water: Tulare	6.87	Acre Inches		0.00			mg/L			0	0	0	606	
03/03/2023	Waste Water: Main Lagoon	0.30	Acre Inches		959.00	196.00	1,200.0	mg/L		105,902	846	173	1,059	6,599	
04/30/2023	Surface Water: Tulare	6.46	Acre Inches		0.00			mg/L			0	0	0	570	
04/30/2023	Waste Water: Main Lagoon	0.30	Acre Inches		1,720.00	401.00	1,790.0	mg/L		105,902	1,517	354	1,579	10,762	
05/15/2023	Harvest	20.70	Tons	68.50	1.35	0.30	1.27	%							2,289
	Acre Inches Applied:	**18.58**						**Totals:**		**285,935**	**3,138**	**648**	**3,379**	**23,548**	**2,289**
Season Nitrogen Ratio:	1.37							**Lbs Per Acre:**			**241**	**50**	**260**	**1,811**	**176**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 1

Corn, 13 Acres Planted on 07/24/2023

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)
08/05/2023	Surface Water: Tulare	5.86	Acre Inches		0.00			mg/L			0	0	0	517	
08/05/2023	Waste Water: Main Lagoon	0.35	Acre Inches		1,720.00	306.00	1,400.0	mg/L		123,552	1,770	315	1,441	12,453	
08/20/2023	Surface Water: Tulare	6.65	Acre Inches		0.00			mg/L			0	0	0	587	
09/04/2023	Surface Water: Tulare	6.32	Acre Inches		0.00			mg/L			0	0	0	558	
09/04/2023	Waste Water: Main Lagoon	0.30	Acre Inches		1,720.00	306.00	1,400.0	mg/L		105,902	1,517	270	1,235	10,674	
09/18/2023	Surface Water: Tulare	6.13	Acre Inches		0.00			mg/L			0	0	0	541	
10/02/2023	Surface Water: Tulare	6.86	Acre Inches		0.00			mg/L			0	0	0	605	
10/02/2023	Waste Water: Main Lagoon	0.25	Acre Inches		2,060.00	482.00	1,510.0	mg/L		88,251	1,514	354	1,110	7,866	
10/12/2023	Surface Water: Tulare	6.73	Acre Inches		0.00			mg/L			0	0	0	594	
10/23/2023	Harvest	30.00	Tons	63.60	1.25	0.27	1.06	%							3,549
	Acre Inches Applied:	**39.45**						**Totals:**		**317,705**	**4,802**	**939**	**3,786**	**34,394**	**3,549**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**369**	**72**	**291**	**2,646**	**273**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 2

Wheat, 33 Acres Planted on 12/11/2022

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)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			462				
01/06/2023	Surface Water: Tulare	4.93	Acre Inches		0.00			mg/L			0	0	0	1,104	
01/06/2023	Waste Water: Main Lagoon	0.23	Acre Inches		959.00	196.00	1,200.0	mg/L		206,101	1,646	337	2,060	12,842	
03/05/2023	Surface Water: Tulare	5.89	Acre Inches		0.00			mg/L			0	0	0	1,319	
03/05/2023	Waste Water: Main Lagoon	0.28	Acre Inches		959.00	196.00	1,200.0	mg/L		250,906	2,004	410	2,508	15,633	
05/02/2023	Surface Water: Tulare	5.73	Acre Inches		0.00			mg/L			0	0	0	1,283	
05/02/2023	Waste Water: Main Lagoon	0.27	Acre Inches		1,720.00	401.00	1,790.0	mg/L		241,945	3,467	808	3,608	24,588	
05/15/2023	Harvest	20.40	Tons	67.20	1.29	0.33	1.31	%							5,697
	Acre Inches Applied:	**17.33**						**Totals:**		**698,952**	**7,579**	**1,554**	**8,176**	**56,769**	**5,697**
Season Nitrogen Ratio:	1.33							**Lbs Per Acre:**			**230**	**47**	**248**	**1,720**	**173**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 2

Corn, 33 Acres Planted on 06/06/2023

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)
06/18/2023	Surface Water: Tulare	6.31	Acre Inches		0.00			mg/L			0	0	0	1,413	
06/18/2023	Waste Water: Main Lagoon	0.32	Acre Inches		1,720.00	401.00	1,790.0	mg/L		286,749	4,108	958	4,275	29,141	
07/03/2023	Surface Water: Tulare	7.20	Acre Inches		0.00			mg/L			0	0	0	1,612	
07/18/2023	Surface Water: Tulare	6.49	Acre Inches		0.00			mg/L			0	0	0	1,453	
07/18/2023	Waste Water: Main Lagoon	0.33	Acre Inches		1,720.00	306.00	1,400.0	mg/L		295,710	4,237	754	3,448	29,806	
08/01/2023	Surface Water: Tulare	7.39	Acre Inches		0.00			mg/L			0	0	0	1,655	
08/15/2023	Surface Water: Tulare	6.31	Acre Inches		0.00			mg/L			0	0	0	1,413	
08/15/2023	Waste Water: Main Lagoon	0.28	Acre Inches		1,720.00	306.00	1,400.0	mg/L		250,906	3,595	640	2,926	25,290	
08/25/2023	Surface Water: Tulare	6.44	Acre Inches		0.00			mg/L			0	0	0	1,442	
09/05/2023	Harvest	30.10	Tons	67.20	1.33	0.38	1.53	%							8,666
	Acre Inches Applied:	**41.07**						**Totals:**		**833,365**	**11,940**	**2,351**	**10,650**	**93,225**	**8,666**
Season Nitrogen Ratio:	1.38							**Lbs Per Acre:**			**362**	**71**	**323**	**2,825**	**263**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 3

Wheat, 42 Acres Planted on 12/11/2022

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)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			588				
01/04/2023	Surface Water: Tulare	5.00	Acre Inches		0.00			mg/L			0	0	0	1,425	
01/04/2023	Waste Water: Main Lagoon	0.24	Acre Inches		959.00	196.00	1,200.0	mg/L		273,715	2,187	447	2,736	17,055	
03/03/2023	Surface Water: Tulare	5.75	Acre Inches		0.00			mg/L			0	0	0	1,639	
03/03/2023	Waste Water: Main Lagoon	0.27	Acre Inches		959.00	196.00	1,200.0	mg/L		307,930	2,460	503	3,078	19,186	
04/30/2023	Surface Water: Tulare	5.63	Acre Inches		0.00			mg/L			0	0	0	1,604	
04/30/2023	Waste Water: Main Lagoon	0.27	Acre Inches		1,720.00	401.00	1,790.0	mg/L		307,930	4,412	1,029	4,591	31,294	
05/15/2023	Harvest	20.80	Tons	67.60	1.35	0.34	1.29	%							7,642
	Acre Inches Applied:	**17.16**						**Totals:**		**889,575**	**9,647**	**1,978**	**10,406**	**72,203**	**7,642**
Season Nitrogen Ratio:	1.26							**Lbs Per Acre:**			**230**	**47**	**248**	**1,719**	**182**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 3

Corn, 42 Acres Planted on 07/14/2023

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)
07/26/2023	Surface Water: Tulare	6.23	Acre Inches		0.00			mg/L			0	0	0	1,776	
07/26/2023	Waste Water: Main Lagoon	0.32	Acre Inches		1,720.00	306.00	1,400.0	mg/L		364,954	5,229	930	4,256	36,785	
08/10/2023	Surface Water: Tulare	6.99	Acre Inches		0.00			mg/L			0	0	0	1,992	
08/25/2023	Surface Water: Tulare	6.37	Acre Inches		0.00			mg/L			0	0	0	1,816	
08/25/2023	Waste Water: Main Lagoon	0.32	Acre Inches		1,720.00	306.00	1,400.0	mg/L		364,954	5,229	930	4,256	36,785	
09/08/2023	Surface Water: Tulare	7.14	Acre Inches		0.00			mg/L			0	0	0	2,035	
09/22/2023	Surface Water: Tulare	6.23	Acre Inches		0.00			mg/L			0	0	0	1,776	
09/22/2023	Waste Water: Main Lagoon	0.30	Acre Inches		2,060.00	482.00	1,510.0	mg/L		342,144	5,871	1,374	4,304	30,496	
10/02/2023	Surface Water: Tulare	6.40	Acre Inches		0.00			mg/L			0	0	0	1,824	
10/13/2023	Harvest	30.20	Tons	63.70	1.28	0.31	1.05	%							11,787
	Acre Inches Applied:	**40.30**						**Totals:**		**1,072,052**	**16,329**	**3,234**	**12,816**	**115,284**	**11,787**
Season Nitrogen Ratio:	1.39							**Lbs Per Acre:**			**389**	**77**	**305**	**2,745**	**281**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 4

Wheat, 18 Acres Planted on 12/11/2022

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)
11/20/2022	Corral Solids: Main Corral	8.00	Tons	18.90	1.58	0.76	1.74	%	144		3,690	1,787	4,064	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			252				
01/02/2023	Surface Water: Tulare	5.11	Acre Inches		0.00			mg/L			0	0	0	624	
03/01/2023	Surface Water: Tulare	7.03	Acre Inches		0.00			mg/L			0	0	0	859	
04/28/2023	Surface Water: Tulare	6.71	Acre Inches		0.00			mg/L			0	0	0	820	
05/15/2023	Harvest	19.00	Tons	65.30	1.20	0.29	1.16	%							2,848
	Acre Inches Applied:	**18.85**						**Totals:**	**144**		**3,942**	**1,787**	**4,064**	**2,302**	**2,848**
Season Nitrogen Ratio:	1.38							**Lbs Per Acre:**			**219**	**99**	**226**	**128**	**158**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 4

Corn, 18 Acres Planted on 07/14/2023

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)
06/28/2023	Corral Solids: Main Corral	8.00	Tons	63.00	3.13	1.44	3.68	%	144		3,335	1,534	3,921	0	
07/24/2023	Surface Water: Tulare	6.94	Acre Inches		0.00			mg/L			0	0	0	848	
08/08/2023	Fertilize - UN32	25.00	Gallons		32.00	0.00	0.00	%			1,200	0	0	0	
08/08/2023	Surface Water: Tulare	7.99	Acre Inches		0.00			mg/L			0	0	0	976	
08/23/2023	Surface Water: Tulare	7.29	Acre Inches		0.00			mg/L			0	0	0	890	
09/06/2023	Fertilize - UN32	25.00	Gallons		32.00	0.00	0.00	%			1,200	0	0	0	
09/06/2023	Surface Water: Tulare	8.33	Acre Inches		0.00			mg/L			0	0	0	1,018	
09/20/2023	Surface Water: Tulare	6.94	Acre Inches		0.00			mg/L			0	0	0	848	
09/30/2023	Surface Water: Tulare	6.25	Acre Inches		0.00			mg/L			0	0	0	763	
10/13/2023	Harvest	28.90	Tons	67.10	1.27	0.29	1.03	%							4,347
	Acre Inches Applied:	**43.74**						**Totals:**	**144**		**5,734**	**1,534**	**3,921**	**5,343**	**4,347**
Season Nitrogen Ratio:	1.32							**Lbs Per Acre:**			**319**	**85**	**218**	**297**	**242**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 5

Wheat, 37 Acres Planted on 12/11/2022

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)
12/31/2022	Surface Water: Tulare	4.97	Acre Inches		0.00			mg/L			0	0	0	1,248	
12/31/2022	Waste Water: Main Lagoon	0.23	Acre Inches		959.00	196.00	1,200.0	mg/L		231,083	1,846	377	2,310	14,399	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			518				
02/27/2023	Surface Water: Tulare	5.82	Acre Inches		0.00			mg/L			0	0	0	1,461	
02/27/2023	Waste Water: Main Lagoon	0.27	Acre Inches		959.00	196.00	1,200.0	mg/L		271,271	2,167	443	2,712	16,902	
04/26/2023	Surface Water: Tulare	5.68	Acre Inches		0.00			mg/L			0	0	0	1,426	
04/26/2023	Waste Water: Main Lagoon	0.27	Acre Inches		1,720.00	401.00	1,790.0	mg/L		271,271	3,887	906	4,045	27,568	
05/15/2023	Harvest	21.50	Tons	66.20	1.23	0.28	1.13	%							6,614
	Acre Inches Applied:	**17.24**						**Totals:**		**773,626**	**8,418**	**1,726**	**9,066**	**63,004**	**6,614**
Season Nitrogen Ratio:	1.27							**Lbs Per Acre:**			**228**	**47**	**245**	**1,703**	**179**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 5

Corn, 37 Acres Planted on 07/14/2023

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)
07/22/2023	Surface Water: Tulare	6.27	Acre Inches		0.00			mg/L			0	0	0	1,574	
07/22/2023	Waste Water: Main Lagoon	0.30	Acre Inches		1,720.00	306.00	1,400.0	mg/L		301,413	4,319	768	3,515	30,380	
08/06/2023	Surface Water: Tulare	7.09	Acre Inches		0.00			mg/L			0	0	0	1,780	
08/21/2023	Surface Water: Tulare	6.43	Acre Inches		0.00			mg/L			0	0	0	1,614	
08/21/2023	Waste Water: Main Lagoon	0.30	Acre Inches		1,720.00	306.00	1,400.0	mg/L		301,413	4,319	768	3,515	30,380	
09/04/2023	Surface Water: Tulare	7.26	Acre Inches		0.00			mg/L			0	0	0	1,823	
09/18/2023	Surface Water: Tulare	6.27	Acre Inches		0.00			mg/L			0	0	0	1,574	
09/18/2023	Waste Water: Main Lagoon	0.22	Acre Inches		2,060.00	482.00	1,510.0	mg/L		221,036	3,793	888	2,780	19,701	
09/28/2023	Surface Water: Tulare	6.42	Acre Inches		0.00			mg/L			0	0	0	1,612	
10/13/2023	Harvest	29.60	Tons	63.40	1.16	0.26	0.83	%							9,300
	Acre Inches Applied:	**40.56**						**Totals:**		**823,861**	**12,430**	**2,424**	**9,810**	**90,440**	**9,300**
Season Nitrogen Ratio:	1.34							**Lbs Per Acre:**			**336**	**66**	**265**	**2,444**	**251**

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A & L Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 6

Wheat, 20 Acres Planted on 12/11/2022

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)
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			280				
01/08/2023	Surface Water: Tulare	4.73	Acre Inches		0.00			mg/L			0	0	0	642	
01/08/2023	Waste Water: Main Lagoon	0.22	Acre Inches		959.00	196.00	1,200.0	mg/L		119,479	954	195	1,194	7,445	
03/07/2023	Surface Water: Tulare	6.30	Acre Inches		0.00			mg/L			0	0	0	855	
03/07/2023	Waste Water: Main Lagoon	0.30	Acre Inches		959.00	196.00	1,200.0	mg/L		162,926	1,302	266	1,629	10,152	
05/04/2023	Surface Water: Tulare	6.04	Acre Inches		0.00			mg/L			0	0	0	820	
05/04/2023	Waste Water: Main Lagoon	0.28	Acre Inches		1,720.00	401.00	1,790.0	mg/L		152,064	2,179	508	2,267	15,454	
05/15/2023	Harvest	21.30	Tons	65.00	1.30	0.30	1.05	%							3,877
	Acre Inches Applied:	**17.87**						**Totals:**		**434,469**	**4,715**	**969**	**5,090**	**35,367**	**3,877**
Season Nitrogen Ratio:	1.22							**Lbs Per Acre:**			**236**	**48**	**255**	**1,768**	**194**

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Nutrient Applications (Attachment B)

Field Name: 6

Corn, 20 Acres Planted on 07/14/2023

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)
07/30/2023	Surface Water: Tulare	6.54	Acre Inches		0.00			mg/L			0	0	0	888	
07/30/2023	Waste Water: Main Lagoon	0.25	Acre Inches		1,720.00	306.00	1,400.0	mg/L		135,772	1,945	346	1,583	13,685	
08/14/2023	Surface Water: Tulare	7.81	Acre Inches		0.00			mg/L			0	0	0	1,060	
08/29/2023	Surface Water: Tulare	6.84	Acre Inches		0.00			mg/L			0	0	0	928	
08/29/2023	Waste Water: Main Lagoon	0.30	Acre Inches		1,720.00	306.00	1,400.0	mg/L		162,926	2,334	415	1,900	16,422	
09/12/2023	Surface Water: Tulare	8.13	Acre Inches		0.00			mg/L			0	0	0	1,103	
09/26/2023	Surface Water: Tulare	6.54	Acre Inches		0.00			mg/L			0	0	0	888	
09/26/2023	Waste Water: Main Lagoon	0.20	Acre Inches		2,060.00	482.00	1,510.0	mg/L		108,617	1,864	436	1,366	9,681	
10/06/2023	Surface Water: Tulare	6.56	Acre Inches		0.00			mg/L			0	0	0	890	
10/13/2023	Harvest	28.70	Tons	68.50	1.24	0.26	1.11	%							4,484
	Acre Inches Applied:	**43.17**						**Totals:**		**407,314**	**6,143**	**1,197**	**4,850**	**45,546**	**4,484**
Season Nitrogen Ratio:	1.37							**Lbs Per Acre:**			**307**	**60**	**242**	**2,277**	**224**

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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	7,025.76	3,321.36	7,985.52	0.00	288.00	tons
Process Wastewater	83,111.28	17,021.77	78,028.99	574,042.14	6,536,854.64	gallons
Irrigation Water	0.00					
Fertilizer / Total Imports	2,399.04					
Atmospheric Deposition	2,282.00					
Total Nitrogen Applied	**94,818.08**					
Crop Nitrogen Removal	71,100.09					
Nitrogen Balance	**23,717.99**					
Nitrogen Ratio	**1.33**					

- **Nutrient applications shown in Attachment B are on a crop year basis.**
- **Lab sample data results for applications are based on the sample taken closest to the application date. Lab sample data results are shown on 100% dry basis for manure applications and harvest events.**
- **Well Avg: Irrigation source representing the average nutrient values of all irrigation wells sampled for the facility during the reporting year.**

**** Book Value: No sample data results were available. For manure applications and plant tissue harvests, the calculations were based off book values.**

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A & L 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

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A & L 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)**
4,400	119,565.60	56,366.64	143,478.72	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.

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A & L Dairy 2023

Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x158 x040 x002 xxxx	13	Process Wastewater
2	x158 x040 x016 xxxx	33	Process Wastewater
3	x158 x040 x004 xxxx	42	Process Wastewater
4	x158 x050 x013 xxxx	18	Manure
5	x147 x050 x033 xxxx	37	Process Wastewater
6	x147 x050 x012 xxxx	20	Process Wastewater
		163	

Production Area APN(s): x158 x040 x002 xxxx, x158 x040 x016 xxxx

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A & L 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
02/14/2023	959.00	196.00	1,200.00	11,300	539.00		7,480.00								
06/09/2023	1,720.00	401.00	1,790.00	18,300	1,220.00	0.00	12,200.0	7.68							
07/12/2023	1,720.00	306.00	1,400.00	18,200	1,110.00		12,100.0								
11/06/2023	2,060.00	482.00	1,510.00	16,200	1,310.00		10,700.0								
Averages:	1,614.75	346.25	1,475.00	16,000	1,044.75	0.00	10,620.0	7.68							

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/09/2023	3.13	1.44	3.68	63.00						%
11/06/2023	2.10	0.99	2.52	35.30						%
Averages:	2.62	1.22	3.10	49.15						

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
1	1	Wheat	05/15/2023	27.00	5.98	25.40	68.50	9.27
1	2	Corn	10/23/2023	25.00	5.44	21.20	63.60	5.24

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A & L 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 (%)
2	1	Wheat	05/15/2023	25.80	6.64	26.20	67.20	8.86
2	2	Corn	09/05/2023	26.60	7.64	30.60	67.20	7.11
3	1	Wheat	05/15/2023	27.00	6.84	25.80	67.60	9.26
3	2	Corn	10/13/2023	25.60	6.28	21.00	63.70	14.50
4	1	Wheat	05/15/2023	24.00	5.84	23.20	65.30	8.55
4	2	Corn	10/13/2023	25.40	5.80	20.60	67.10	5.74
5	1	Wheat	05/15/2023	24.60	5.64	22.60	66.20	8.51
5	2	Corn	10/13/2023	23.20	5.24	16.54	63.40	17.40
6	1	Wheat	05/15/2023	26.00	6.00	21.00	65.00	8.88
6	2	Corn	10/13/2023	24.80	5.10	22.20	68.50	6.12

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
Dairy														
D1	12/14/2023	15.30		416										
	Averages:	15.30		416										

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A & L Dairy 2023

Lab Results Summary (Attachment E)

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														
House	12/14/2023	15.20		531										
	Averages:	15.20		531										
Irrigation														
E1							Out of service							
E2							Out of service							
E4							Did not run							
E5	11/14/2023	1.90		176		120.00	20.30	6.00	0.00	32.00	70.00	0.00	2.00	3.00
E6							Did not run							
IRS							Did not run							
IRW							Out of service							
	Averages:	1.90		176		120.00	20.30	6.00	0.00	32.00	70.00	0.00	2.00	3.00
Surface Water														
Tulare (General)	06/28/2023	0.00		42		30.00	0.00							
	Averages:	0.00		42		30.00	0.00							

* NH4N was non-detectable unless a value is shown

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A & L Dairy 2023

Lab Results Summary (Attachment E)

Soils

Field	Sample Date:	PO4P (ppm)
3	11/20/2023	50.60
4	11/20/2023	46.10
6	11/20/2023	46.30

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A & L Dairy 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 1								
	1	Wheat	13	12/11/2022	05/15/2023	19.2	269.1	20.7
	2	Corn	13	07/24/2023	10/23/2023	29.2	390.0	30.0
Field: 2								
	1	Wheat	33	12/11/2022	05/15/2023	20.2	673.2	20.4
	2	Corn	33	06/06/2023	09/05/2023	30.6	993.3	30.1
Field: 3								
	1	Wheat	42	12/11/2022	05/15/2023	21.8	873.6	20.8
	2	Corn	42	07/14/2023	10/13/2023	29.7	1268.4	30.2
Field: 4								
	1	Wheat	18	12/11/2022	05/15/2023	18.9	342.0	19.0
	2	Corn	18	07/14/2023	10/13/2023	28.0	520.2	28.9
Field: 5								
	1	Wheat	37	12/11/2022	05/15/2023	21.9	795.5	21.5
	2	Corn	37	07/14/2023	10/13/2023	29.1	1095.2	29.6
Field: 6								
	1	Wheat	20	12/11/2022	05/15/2023	20.4	426.0	21.3
	2	Corn	20	07/14/2023	10/13/2023	28.2	574.0	28.7

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A & L Dairy 2023

Weather Data (Attachment G)

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	None	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	None	None	None	None	None	None	None	None
5	Heavy	None	Light	None	None	None	None	None	None	None	None	None
6	Light	None	Light	None	None	None	None	None	None	None	None	None
7	None	None	None	None	None	None	None	None	None	None	None	None
8	None	None	None	None	None	None	None	None	None	None	None	None
9	Light	None	Light	None	None	None	None	None	None	None	None	None
10	Light	None	Light	None	None	None	None	None	None	None	None	None
11	None	None	None	None	None	None	None	None	None	None	None	None
12	SWP	None	None	None	None	None	None	None	None	None	None	None
13	Light	None	None	None	None	None	None	None	None	None	None	None
14	SWP	None	None	None	None	None	None	None	None	None	None	None
15	Light	None	Heavy	None	None	None	None	None	None	None	None	None
16	Light	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	Heavy	None	None	None	None	None	None	None	None	Light
20	None	None	None	None	None	None	None	None	None	None	None	SWP
21	None	None	Heavy	None	None	None	None	None	None	None	None	None
22	None	None	Light	None	None	None	None	None	None	None	None	None
23	None	None	None	None	None	None	None	None	None	None	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	None	Light	None	None	None	None	None	None	None	None	None
29	Light		None	None	None	None	None	None	None	None	None	Light
30	None		None	None	None	None	None	None	None	None	None	SWP
31	None		None		None		None	None		None		None

*Note: SWP = Standing Water Present

INNOVATIVE AG SERVICES

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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: Ryan Riezebos

Name of Dairy Facility: A & L Dairy

Facility Address: 23863 Road 48 (Number and Street) Tulare (City) 93274 (Zip Code)

Contact Person Name and Phone Number: Ryan Riezebos (Name) (559) 799-6464 (Phone Number)

Manure/Process Wastewater Hauler Information:

Name of Hauling Company/Person: Triple M Custom Chopping and Manure Spreading

Address of Hauling Company /Person: PO Box 1020 (Number and Street) Tulare, CA (City) 93275 (Zip Code)

Contact Person: Triple M Custom Chopping and Manure Spreading (Name) (559) 686-4413 (Phone Number)

Destination Information:

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

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

Name	Number and Street	City	Zip Code	Phone Number
Alvin Borba	736 Dickran	Tulare	93274	

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

Number and Street	City	Zip Code	Assessor's Parcel Number
Road 52 and Avenue 240	Tulare	93274	

Dates Hauled: 9/7/2023, 9/8/2023, 9/10/2023, 9/11/2023

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: 3240 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 63% Corral Solids

Manure Density (if amount reported in cubic yards): _____

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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.

DocuSigned by:
Operator's Signature: _____ Date: 6/19/2024
AFB9CF6B386E4D6...

Hauler's Signature: _____ Date: _____

DocuSign Envelope ID: 7AA56E14-5E84-4EE9-8076-1C5829245EFE

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: Ryan Riezebos

Name of Dairy Facility: A & L Dairy

Facility Address: 23863 Road 48 (Number and Street) Tulare (City) 93274 (Zip Code)

Contact Person Name and Phone Number: Ryan Riezebos (Name) (559) 799-6464 (Phone Number)

Manure/Process Wastewater Hauler Information:

Name of Hauling Company/Person: Triple M Custom Chopping and Manure Spreading

Address of Hauling Company /Person: PO Box 1020 (Number and Street) Tulare, CA (City) 93275 (Zip Code)

Contact Person: Triple M Custom Chopping and Manure Spreading (Name) (559) 686-4413 (Phone Number)

Destination Information:

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

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

Name	Number and Street	City	Zip Code	Phone Number
Alvin Borba	736 Dickran	Tulare	93274	

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

Number and Street	City	Zip Code	Assessor's Parcel Number
Road 52 and Avenue 240	Tulare	93274	

Dates Hauled: 9/7/2023, 9/8/2023, 9/10/2023, 9/11/2023

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: 1160 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 63% Corral Solids

Manure Density (if amount reported in cubic yards): _____

DocuSign Envelope ID: 7AA56E14-5E84-4EE9-8076-1C5829245EFE

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.

DocuSigned by:
Operator's Signature: _____ Date: 6/19/2024
AFB9CF6B386E4D6...

Hauler's Signature: _____ Date: _____

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

December 22, 2023

Lab No. : **VI 2348562**
Customer No. : **4018573**
Reference : **42186**

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
D1	12/14/2023	12/14/2023	VI 2348562-001	DW
House	12/14/2023	12/14/2023	VI 2348562-002	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	
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

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

KD: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-12-26

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

December 22, 2023

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

Description : D1
Project : 0026 A & L Dairy

Lab No. : VI 2348562-001
Customer No. : 4018573
Reference : 42186
Sampled On : December 14, 2023 at 11:50
Sampled By : Zeke
Received On : December 14, 2023 at 15:50
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	15.3	0.4	mg/L	10	1		12/15/2023	13:00	lfs	SM 4500-NO3 F	12/15/2023	16:36	lfs
Conductivity	416	1	umhos/cm	1600[2]	1		12/21/2023	09:19	krh	SM 4500-H+B	12/21/2023	11:52	krh

DQF Flags Definition:

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

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

December 22, 2023

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

Description : House
Project : 0026 A & L Dairy

Lab No. : VI 2348562-002
Customer No. : 4018573
Reference : 42186
Sampled On : December 14, 2023 at 12:10
Sampled By : Zeke
Received On : December 14, 2023 at 15:50
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	15.2	0.4	mg/L	10	1		12/15/2023	13:00	lfs	SM 4500-NO3 F	12/15/2023	17:09	lfs
Conductivity	531	1	umhos/cm	1600[2]	1		12/21/2023	09:19	krh	SM 4500-H+B	12/21/2023	11:55	krh

DQF Flags Definition:

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

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ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

December 22, 2023
Innovative Ag Services, LLC

Lab No. : VI 2348562
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2348655-001)	Dup	umhos/cm		0.07%	5	
Nitrate Nitrogen	4500NO3F	12/15/2023:214153LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	93.3%	80-120	
			MS	mg/L	5.609	93.1%	66-125	
		(VI 2348536-001)	MSD	mg/L	5.609	94.3%	66-125	
			MSRPD	mg/L		1.0%	≤30.4	

Definition

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

DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.

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

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

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

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

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

ND : Non-detect - Result was below the DQO listed for the analyte.

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Laboratory Analysis Work Order

Nº 42186

23485562

ID: # 0026

LABORATORY: FGL

SITE NAME: A&L 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: _____

RDI B.1.C TDH# TH407

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	D1	Dom	W1	12-14 / 11:50	Zeke			
2	House	Dom	W1	12-14 / 12:10	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:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		12-14-23 / 3:20
2nd		FGL	12-14-23 15:58	
3rd		FGL		12-14-23 16:08
4th			12/14/23 16:08	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: 1 12/14/23 1730 Laboratory #: 12/15/23 1155

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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 2347720**
Customer No. : **4018573**
Reference : **42047**

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
E5	11/14/2023	11/14/2023	VI 2347720-001	AGW

Sampling and Receipt Information:

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

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

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

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

KD: JRD

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

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

November 28, 2023

Innovative Ag Services, LLC
1201 Delta View Road
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Description : E5
Project : 0026 A&L

Lab No. : VI 2347720-001
Customer No. : 4018573
Reference : 42047
Sampled On : November 14, 2023 at 13:10
Sampled By : Zeke
Received On : November 14, 2023 at 16:05
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO3)	70	10	mg/L		1		11/19/2023	20:37	amm	SM 4500-H+B	11/20/2023	04:16	amm
Bicarbonate	70	10	mg/L		1		11/19/2023	20:37	amm	SM 4500-H+B	11/20/2023	04:16	amm
Carbonate	ND	10	mg/L		1	U	11/19/2023	20:37	amm	SM 4500-H+B	11/20/2023	04:16	amm
Hydroxide	ND	10	mg/L		1	U	11/19/2023	20:37	amm	SM 4500-H+B	11/20/2023	04:16	amm
Chloride	3	1	mg/L		1		11/15/2023	15:06	ldm	EPA 300.0	11/16/2023	02:30	ldm
Nitrogen, Total Kjeldahl	18	0.5	mg/L		1	l	11/21/2023	14:22	sta	EPA 351.2	11/26/2023	21:08	lcr
Nitrate Nitrogen	1.9	0.1	mg/L		1		11/15/2023	15:06	ldm	EPA 300.0	11/16/2023	02:30	ldm
Nitrogen, Total as Nitrogen	20.3	0.5	mg/L		1	l	11/21/2023	14:22	sta	Calc.	11/26/2023	21:08	lcr
Nitrate + Nitrite as N	2.3	0.1	mg/L		1		11/15/2023	15:06	ldm	EPA 300.0	11/16/2023	02:30	ldm
Kjeldahl Nitrogen	18	0.5	mg/L		1	l	11/21/2023	14:22	sta	EPA 351.2	11/26/2023	21:08	lcr
Conductivity	176	1	umhos/cm		1		11/19/2023	20:37	amm	SM 4500-H+B	11/20/2023	04:16	amm
Sulfate Sulfur	2.00	0.17	mg/L		1		11/15/2023	15:06	ldm	EPA 300.0	11/16/2023	02:30	ldm
Solids, Total Dissolved (TDS)	120	20	mg/L		1		11/15/2023	15:50	ctl	SM 2540 C	11/16/2023	09:30	ctl
Calcium	6	1	mg/L		1		11/16/2023	03:33	ejc	EPA 200.7	11/20/2023	13:15	ac
Magnesium	ND	1	mg/L		1	U	11/16/2023	03:33	ejc	EPA 200.7	11/20/2023	13:15	ac
Sodium	32	1	mg/L		1		11/16/2023	03:33	ejc	EPA 200.7	11/20/2023	13:15	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 2347720
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	11/16/2023:213047EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.3%	85-115	
			MS	mg/L	12.00	48.1%	<¼	406
		(VI 2347810-001)	MSD	mg/L	12.00	34.2%	<1/4	
			MSRPD	mg/L		2.1%	≤20.0	
			MS	mg/L	12.00	129%	<¼	406
		(CC 2384067-001)	MSD	mg/L	12.00	59.9%	<1/4	
			MSRPD	mg/L		7.5%	≤20.0	
Magnesium	200.7	11/16/2023:213047EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.5%	85-115	
			MS	mg/L	12.00	88.4%	75-125	
		(VI 2347810-001)	MSD	mg/L	12.00	80.8%	75-125	
			MSRPD	mg/L		3.5%	≤20	
			MS	mg/L	12.00	118%	75-125	
		(CC 2384067-001)	MSD	mg/L	12.00	59.0%	<1/4	
			MSRPD	mg/L		7.4%	≤20	
Sodium	200.7	11/16/2023:213047EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.8%	85-115	
			MS	mg/L	12.00	45.9%	<¼	406
		(VI 2347810-001)	MSD	mg/L	12.00	27.7%	<1/4	
			MSRPD	mg/L		2.5%	≤20.0	
			MS	mg/L	12.00	165%	<¼	406
		(CC 2384067-001)	MSD	mg/L	12.00	48.4%	<1/4	
			MSRPD	mg/L		6.8%	≤20.0	

Definition

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

Explanation

406 : Matrix Spike (MS) not within the Acceptance Range (AR) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.

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November 28, 2023
Innovative Ag Services, LLC

Lab No. : VI 2347720
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	11/19/2023:213162AMM	ND	mg/L		0.07%	10	406
Bicarbonate	2320B	(SP 2319182-002)	Dup	mg/L		0%	10	
E. C.	2320B	(SP 2319182-002)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	11/15/2023:213014CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	98.4%	90-110	
		(STK2355724-008)	Dup	mg/L		2.80%	5	
		(STK2355724-008)	Dup	mg/L		0.4%	5	
Chloride	300.0	11/15/2023:213090LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.4%	90-110	
			MS	mg/L	50.00	96.2%	67-117	
		(VI 2347669-001)	MSD	mg/L	50.00	95.9%	67-117	
			MSRPD	mg/L		0.2%	≤7	
			MS	mg/L	50.00	104%	67-117	
		(VI 2347720-001)	MSD	mg/L	50.00	104%	67-117	
			MSRPD	mg/L		0.7%	≤7	
Nitrate + Nitrite as N	300.0	11/15/2023:213090LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	97.9%	90-110	
			MS	mg/L	40.00	67.1%	86-112	435
		(VI 2347669-001)	MSD	mg/L	40.00	87.1%	86-112	
			MSRPD	mg/L		10.5%	≤7	435
			MS	mg/L	40.00	102%	86-112	
		(VI 2347720-001)	MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.2%	≤7	
Nitrate Nitrogen	300.0	11/15/2023:213090LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	97.9%	90-110	
			MS	mg/L	40.00	67.1%	86-112	435
		(VI 2347669-001)	MSD	mg/L	40.00	87.1%	86-112	
			MSRPD	mg/L		10.5%	≤7	435
			MS	mg/L	40.00	102%	86-112	
		(VI 2347720-001)	MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.2%	≤7	
Sulfate Sulfur	300.0	11/15/2023:213090LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101%	90-110	
			MS	mg/L	100.0	99.5%	18-165	
		(VI 2347669-001)	MSD	mg/L	100.0	99.2%	18-165	
			MSRPD	mg/L		0.2%	≤7	
			MS	mg/L	100.0	105%	18-165	
		(VI 2347720-001)	MSD	mg/L	100.0	105%	18-165	
			MSRPD	mg/L		0.0%	≤7	
Nitrogen, Total Kjeldahl	351.2	11/21/2023:213242STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	95.5%	73-124	
			MS	mg/L	12.00	82.4%	90-110	435
		(VI 2347721-001)	MSD	mg/L	12.00	85.9%	90-110	435
			MSRPD	mg/L		4.0%	≤20	
			MS	mg/L	12.00	89.1%	90-110	435
		(VI 2347722-001)	MSD	mg/L	12.00	86.7%	90-110	435
			MSRPD	mg/L		2.7%	≤20	

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Definition

Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

Explanation

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

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Laboratory Analysis Work Order

Nº 42047

2347720

ID: # 0026

LABORATORY: FGL

SITE NAME: A&L DAIRY

Authorized Copy Release to:

Billing: IAS

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

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

Process Waste Water (lagoon)

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

Manure

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

Plant Tissue

P1 TN, NO_3N, PO_4P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Soil

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

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	ES	IRR	W5	11-14/1:10	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: ROI 19.8°C ID#77407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		11-14-23 / 3:35
2nd		FGL	11-14-23 15:58	
3rd		FGL		11-14-23 16:05
4th	SPO	FGL	11.14.23 1605	
	SPO	FGL	11.14.23 1730	
		GLS	11.14.23 1730	

LABORATORY USE ONLY

Logged In By: _____ **Total Samples:** _____ **Laboratory #:** _____ 11/15/23 PAS.

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