



Jim Bakker Dairy

2023 Annual Report

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

Jim Bakker Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	Jim Bakker Dairy
Facility Address	30030 Road 60, Visalia CA 93291

Owner/Operator as of 12/31/2023

Operator Name	Jim Bakker
Operator Phone	(559) 651-1292
Owner Name	Jim Bakker
Owner Phone	(559) 651-1292

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

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

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

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

Jim Bakker 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:

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

11. Summary of discharges from the land application area

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

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

12. Nutrient Management Plan update

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

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

13. Manure/Process Wastewater Tracking Manifests

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

- No.
 Yes, see attached manifests.

14. Written Agreements

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

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

15. Laboratory Analyses for Discharges

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

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

16. Tabulated Nutrient Analytical Data

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

Jim Bakker 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

Groundwater monitoring results are attached.

Monitoring Well results are attached, if applicable.

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

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

19. Storm Water Reporting Section

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

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

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

20. Mortality Management Practices

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

Jim Bakker 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

Signature of Operator of Facility

Jim Bakker

Print Name

Title and Date

DocuSigned by:
Jim Bakker
00038009387001

Signature of Owner of Facility

Jim Bakker

Print Name

Title and Date

Jim Bakker Dairy 2023

Estimated Manure and Nutrients Generated (Attachment A)

Animal Type	Maximum No. of Head	Average No. of Head*	Housing Type	Weight	Total Manure Produced (tons/year)	NITROGEN	PHOSPHORUS	POTASSIUM	SALTS
						Net (LB) Available for Land Application			
Hol Milk Cows	103	100	Milk Flushed Lane	1,400	2,537.89	36,135.00	6,205.00	8,395.00	65,919.00
Hol Dry Cows	19	18	Flushed	1,450	262.66	3,285.00	459.90	2,168.10	4,635.79
Hol Heifers(15-24)	71	69	Flushed	1,000	720.26	9,570.30	1,511.10	4,533.30	17,770.54
Jer Milk Cows	690	672	Milk Flushed Lane	1,000	15,626.35	174,148.80	29,433.60	39,244.80	316,411.20
Jer Dry Cows	150	146	Flushed	1,100	1,925.28	19,184.40	2,664.50	12,789.60	26,645.00
Jer Heifers (15-24)	350	341	Calves Flushed	700	3,223.48	47,296.70	7,467.90	22,403.70	88,370.15
	1,383	1,346			24,295.92	289,620.20	47,742.00	89,534.50	519,751.68

* 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)**
8,755,089	316.75	76.25	427.75	3,042.50	23,100.54	5,560.90	31,195.76	221,889.20

* 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).

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB1

Wheat, 20 Acres Planted on 11/08/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			280				
02/18/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			335	0	0	5,429	
02/18/2023	Waste Water: Main Lagoon	1.20	Acre Inches		293.00	77.50	472.00	mg/L	651,703	1,591	421	2,562	18,132	
03/30/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			335	0	0	5,429	
03/30/2023	Waste Water: Main Lagoon	0.70	Acre Inches		374.00	84.10	488.00	mg/L	380,160	1,184	266	1,545	5,605	
05/15/2023	Harvest	21.10	Tons	71.90	1.56	0.34	2.27	%						3,700
Acre Inches Applied:		9.90						Totals:	1,031,863	3,726	687	4,108	34,594	3,700
Season Nitrogen Ratio:		1.40						Lbs Per Acre:		186	34	205	1,730	185

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB1

Corn, 20 Acres Planted on 06/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
				% Moist.	Nitrogen	Phos.	Potass.								
07/01/2023	Ground Water: Well Avg	6.12	Acre Inches		18.53			513		0	0	8,306			
07/01/2023	Waste Water: Main Lagoon	0.78	Acre Inches		257.00	55.40	324.00	423,607		907	195	1,143	12,491		
07/16/2023	Ground Water: Well Avg	7.50	Acre Inches		18.53			629		0	0	10,179			
07/31/2023	Ground Water: Well Avg	6.40	Acre Inches		18.53			537		0	0	8,686			
07/31/2023	Waste Water: Main Lagoon	0.70	Acre Inches		257.00	55.40	324.00	380,160		814	175	1,026	11,210		
08/13/2023	Ground Water: Well Avg	7.80	Acre Inches		18.53			654		0	0	10,586			
08/27/2023	Ground Water: Well Avg	6.12	Acre Inches		18.53			513		0	0	8,306			
08/27/2023	Waste Water: Main Lagoon	0.68	Acre Inches		257.00	55.40	324.00	369,298		791	170	997	10,890		
09/07/2023	Ground Water: Well Avg	6.00	Acre Inches		18.53			503		0	0	8,143			
09/18/2023	Harvest	31.00	Tons	63.60	0.99	0.21	1.44							4,477	
Acre Inches Applied:		42.10						Totals:		1,173,066	5,860	541	3,166	88,797	4,477
Season Nitrogen Ratio:		1.31						Lbs Per Acre:		293	27	158	4,440	224	

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB2

Wheat, 13 Acres Planted on 11/07/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
				%	Moist.	Nitrogen	Phos.								
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%				182					
02/23/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			218	0	0	3,529		
02/23/2023	Waste Water: Main Lagoon	0.90	Acre Inches	293.00	77.50	472.00	mg/L		317,705	775	205	1,249	8,839		
04/01/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			218	0	0	3,529		
04/01/2023	Waste Water: Main Lagoon	0.90	Acre Inches	374.00	84.10	488.00	mg/L		317,705	990	223	1,291	4,684		
05/15/2023	Harvest	21.80	Tons	67.70	1.37	0.27	1.61	%						2,508	
Acre Inches Applied:		9.80						Totals:		635,411	2,383	428	2,541	20,581	2,508
Season Nitrogen Ratio:		1.40						Lbs Per Acre:		183	33	195	1,583	193	

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB2

Corn, 13 Acres Planted on 06/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
			Units	% Moist.	Nitrogen	Phos.								
06/29/2023	Surface Water: Mill Creek	5.35 Acre Inches		0.00		mg/L			0	0	0	787		
06/29/2023	Waste Water: Main Lagoon	0.62 Acre Inches		257.00	55.40	324.00	mg/L		218,864	469	101	591	6,454	
07/14/2023	Surface Water: Mill Creek	6.92 Acre Inches		0.00		mg/L			0	0	0	1,017		
07/29/2023	Surface Water: Mill Creek	5.70 Acre Inches		0.00		mg/L			0	0	0	838		
07/29/2023	Waste Water: Main Lagoon	0.45 Acre Inches		257.00	55.40	324.00	mg/L		158,853	340	73	429	4,684	
08/12/2023	Ground Water: Well Avg	7.31 Acre Inches		18.53		mg/L			398	0	0	6,449		
08/26/2023	Ground Water: Well Avg	5.35 Acre Inches		18.53		mg/L			292	0	0	4,720		
08/26/2023	Waste Water: Main Lagoon	0.42 Acre Inches		257.00	55.40	324.00	mg/L		148,262	317	68	400	4,372	
09/05/2023	Ground Water: Well Avg	5.00 Acre Inches		18.53		mg/L			272	0	0	4,411		
09/18/2023	Harvest	31.30 Tons		61.40	0.48	0.22	0.83	%					1,508	
Acre Inches Applied:		37.12					Totals:		525,979	2,088	243	1,420	33,731	1,508
Season Nitrogen Ratio:		1.39					Lbs Per Acre:			161	19	109	2,595	116

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB3

Wheat, 17 Acres Planted on 11/13/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
				% Moist.	Nitrogen	Phos.	Potass.								
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			238					
02/21/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			285	0	0	4,614		
02/21/2023	Waste Water: Main Lagoon	0.80	Acre Inches		293.00	77.50	472.00	mg/L		369,298	901	238	1,452	10,275	
03/15/2023	Ground Water: Well Avg	4.00	Acre Inches		18.53		mg/L			285	0	0	4,614		
03/15/2023	Waste Water: Main Lagoon	0.80	Acre Inches		293.00	77.50	472.00	mg/L		369,298	901	238	1,452	10,275	
05/15/2023	Harvest	20.90	Tons	30.30	0.91	0.20	0.97	%						4,507	
Acre Inches Applied:		9.60						Totals:		738,597	2,611	477	2,904	29,778	4,507
Season Nitrogen Ratio:		1.36						Lbs Per Acre:		154	28	171	1,752	265	

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB3

Corn, 17 Acres Planted on 06/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
			Units	% Moist.	Nitrogen	Phos.							
07/03/2023	Surface Water: Mill Creek	5.70	Acre Inches		0.00		mg/L		0	0	0	1,096	
07/03/2023	Waste Water: Main Lagoon	0.65	Acre Inches		257.00	55.40	324.00	mg/L	300,055	642	139	810	8,848
07/16/2023	Surface Water: Mill Creek	7.12	Acre Inches		0.00		mg/L		0	0	0	1,369	
07/28/2023	Surface Water: Mill Creek	6.00	Acre Inches		0.00		mg/L		0	0	0	1,154	
07/28/2023	Waste Water: Main Lagoon	0.67	Acre Inches		257.00	55.40	324.00	mg/L	309,287	662	143	835	9,120
08/12/2023	Ground Water: Well Avg	7.44	Acre Inches		18.53		mg/L		530	0	0	8,583	
08/25/2023	Ground Water: Well Avg	5.70	Acre Inches		18.53		mg/L		406	0	0	6,575	
08/25/2023	Waste Water: Main Lagoon	0.65	Acre Inches		257.00	55.40	324.00	mg/L	300,055	642	139	810	8,848
09/08/2023	Ground Water: Well Avg	5.50	Acre Inches		18.53		mg/L		392	0	0	6,345	
09/18/2023	Harvest	30.65	Tons		70.10	0.76	0.27	1.02 %					2,365
Acre Inches Applied:		39.43			Totals:				909,398	3,276	420	2,454	51,938
Season Nitrogen Ratio:		1.39			Lbs Per Acre:				193	25	144	3,055	139

Jim Bakker Dairy 2023

Nutrient Applications (Attachment B)

Field Name: JB4

Wheat, 56 Acres Planted on 11/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			784				
02/16/2023	Ground Water: Well Avg	4.50	Acre Inches		18.53		mg/L			1,056	0	0	17,100	
02/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches		293.00	77.50	472.00	mg/L		760,320	1,856	491	2,989	21,154
03/18/2023	Surface Water: Mill Creek	4.50	Acre Inches		0.00		mg/L			0	0	0	2,850	
05/15/2023	Harvest	22.30	Tons	74.00	1.58	0.33	1.70	%						10,260
Acre Inches Applied:		9.50		Totals:				760,320	3,696	491	2,989	41,104		10,260
Season Nitrogen Ratio:		1.39		Lbs Per Acre:						66	9	53	734	183

Jim Bakker Dairy 2023
Nutrient Applications (Attachment B)

Field Name: JB4

Corn, 56 Acres Planted on 06/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data			Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.							
07/02/2023	Surface Water: Mill Creek	5.76	Acre Inches		0.00				0	0	0	3,648	
07/02/2023	Waste Water: Main Lagoon	0.65	Acre Inches		257.00	55.40	324.00	mg/L	988,417	2,116	456	2,668	29,147
07/17/2023	Surface Water: Mill Creek	6.54	Acre Inches		0.00			mg/L		0	0	0	4,142
07/30/2023	Surface Water: Mill Creek	5.86	Acre Inches		0.00			mg/L		0	0	0	3,712
07/30/2023	Waste Water: Main Lagoon	0.66	Acre Inches		257.00	55.40	324.00	mg/L	1,003,623	2,149	463	2,709	29,595
08/13/2023	Ground Water: Well Avg	6.64	Acre Inches		18.53			mg/L		1,559	0	0	25,232
08/27/2023	Ground Water: Well Avg	5.76	Acre Inches		18.53			mg/L		1,352	0	0	21,889
08/27/2023	Waste Water: Main Lagoon	0.65	Acre Inches		257.00	55.40	324.00	mg/L	988,417	2,116	456	2,668	29,147
09/08/2023	Ground Water: Well Avg	6.00	Acre Inches		18.53			mg/L		1,408	0	0	22,800
09/18/2023	Harvest	30.80	Tons	68.70	0.74	0.24	0.93	%					7,979
Acre Inches Applied:		38.52		Totals:				2,980,456	10,701	1,376	8,044	169,312	7,979
Season Nitrogen Ratio:		1.34		Lbs Per Acre:					191	25	144	3,023	142

Jim Bakker Dairy 2023
Nutrient Applications (Attachment B)

Summary of Nutrient Applications, Removal, and Balance

	<u>Total N (Lbs)</u>	<u>Total P (Lbs)</u>	<u>Total K (Lbs)</u>	<u>Total Salts (Lbs)</u>	<u>Total Manure Applied</u>	
<i>Solid Manure</i>	0.00	0.00	0.00	0.00		tons
<i>Process Wastewater</i>	20,164.26	4,662.43	27,626.07	243,770.83	8,755,089.41	gallons
<i>Irrigation Water</i>	12,692.74					
<i>Fertilizer / Total Imports</i>	0.00					
<i>Atmospheric Deposition</i>	1,484.00					
<i>Total Nitrogen Applied</i>	34,341.00					
<i>Crop Nitrogen Removal</i>	37,304.83					
<i>Nitrogen Balance</i>	(2,963.83)					
<i>Nitrogen Ratio</i>	0.92					

- Nutrient applications shown in Attachment B are on a calendar 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.

Jim Bakker 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"

ATMOSPHERIC 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

Jim Bakker 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)**
9,250	255,892.00	79,129.68	242,113.20	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 (NO₃-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

Jim Bakker Dairy 2023
Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
JB1	x073 x070 x012 xxxx, x073 x080 x001 xxxx	20	Process Wastewater
JB2	x073 x070 x012 xxxx	13	Process Wastewater
JB3	x073 x070 x001 xxxx	17	Process Wastewater
JB4	x073 x070 x012 xxxx	56	Process Wastewater
		106	

Production Area APN(s): x073 x070 x012 xxxx

**Jim Bakker Dairy 2023
Lab Results Summary (Attachment E)**

Process Wastewater

(mg/l/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
02/10/2023	293.00	77.50	472.00	5,030	190.00		3,340.00								
04/20/2023	374.00	84.10	488.00	2,660	327.00	0.27	1,770.00	7.27							
07/12/2023	257.00	55.40	324.00	5,330	182.00		3,540.00								
11/06/2023	343.00	88.00	427.00	5,300	310.00		3,520.00								
Averages:	316.75	76.25	427.75	4,580	252.25	0.27	3,042.50	7.27							

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL	%	
06/12/2023	1.42	0.56	1.53	6.82								%
11/06/2023	2.60	0.80	2.46	46.80								%
Averages:	2.01	0.68	2.00	26.81								

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
JB1	1	Wheat	05/15/2023	31.20	6.90	45.40	71.90	12.00
JB1	2	Corn	09/18/2023	19.84	4.28	28.80	63.60	6.81

Jim Bakker 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 (%)
JB2	1	Wheat	05/15/2023	27.40	5.44	32.20	67.70	9.04
JB2	2	Corn	09/18/2023	9.60	4.40	16.68	61.40	17.90
JB3	1	Wheat	05/15/2023	18.20	3.98	19.38	30.30	31.50
JB3	2	Corn	09/18/2023	15.18	5.48	20.40	70.10	5.20
JB4	1	Wheat	05/15/2023	31.60	6.60	34.00	74.00	11.00
JB4	2	Corn	09/18/2023	14.78	4.86	18.62	68.70	4.78

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

	Sample Date:	NO3N	TP (umhos/cm)	EC (umhos/cm)	NH4N *	TDS	TN	General Minerals					
								CA	MG	NA	HCO3	CO3	SO4
Domestic													
DW #1	01/13/2023	19.30		633									
DW #2	02/03/2023	4.30		261									
Averages:		11.80		447									

Jim Bakker Dairy 2023
Lab Results Summary (Attachment E)

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	CA	MG	NA	HCO3	CO3	SO4	CL
Irrigation														
Well #1								Did not run						
Well #2	10/20/2023	6.40		230		140.00	6.40							
Well #3	10/20/2023	36.80		890		430.00	36.80							
Well #4								Out of service						
Well #5	09/28/2023	12.40		461		330.00	12.40							
Averages:		18.53		527		300.00	18.53							
Surface Water														
Mill Creek (General)	06/28/2023	0.00		40		50.00	0.00							
Averages:		0.00		40		50.00	0.00							

* NH4N was non-detectable unless a value is shown

Jim Bakker Dairy 2023
Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field:	JB1							
	1	Wheat	20	11/08/2022	05/15/2023	21.5	422.0	21.1
	2	Corn	20	06/19/2023	09/18/2023	30.7	620.0	31.0
Field:	JB2							
	1	Wheat	13	11/07/2022	05/15/2023	21.6	283.4	21.8
	2	Corn	13	06/19/2023	09/18/2023	30.0	406.9	31.3
Field:	JB3							
	1	Wheat	17	11/13/2022	05/15/2023	21.2	355.3	20.9
	2	Corn	17	06/19/2023	09/18/2023	30.8	521.0	30.6
Field:	JB4							
	1	Wheat	56	11/11/2022	05/15/2023	21.7	1248.8	22.3
	2	Corn	56	06/19/2023	09/18/2023	31.5	1724.8	30.8

Jim Bakker 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

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: Jim Bakker

Name of Dairy Facility: Tim Bakker Dairy

Facility Address:	30030 Road 60	Visalia	93291
	Number and Street	City	Zip Code

Contact Person Name and Phone Number:	Jim Bakker	(559) 651-1292
	Name	Phone Number

Manure/Process Wastewater Hauler Information:

Name of Hauling Company/Person: Transition Ag Services

Address of Hauling Company /Person:	3214 S Peppermint Ct	Visalia	93277
	Number and Street	City	Zip Code

Contact Person:	David Weaver	559-901-1373	Name
			Phone Number

Destination Information:

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

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

Name	Number and Street	City	Zip Code	Phone Number
<u>Jim Conway</u>	<u>Po Box 701</u>	<u>Folsom</u>	<u>93277</u>	<u>559-730-6554</u>

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

Number and Street	City	Zip Code	Assessor's Parcel Number
			<u>073-070-070-000</u>

Dates Hauled: 9/30/23 - 10/5/23

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: 3750 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 53.2%

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

Attachment D

D-2

Waste Discharge Requirements General Order No. R5-2007-0035
Existing Milk Cow Dairies

Method used to determine amount of manure: Average weight of
representative loads

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 C.2 of Waste Discharge Requirements General Order No. R5-2007-0035) with any party that receives process wastewater from the Operator for its own use? (please check one)

Yes No

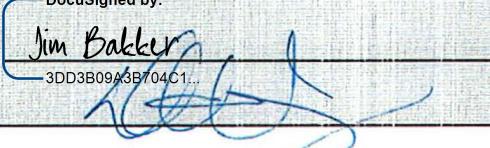
If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.

_____ (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: 6/24/2024

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Hauler's Signature:  Date: 6/24/24

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: Jim Bakker

Name of Dairy Facility:

*Jim Bakker Dairy*Facility Address: 30030 Road 60
Number and StreetVisalia 93291
City Zip CodeContact Person Name and Phone Number: Jim Bakker (559) 651-1292
Name Phone Number**Manure/Process Wastewater Hauler Information:**Name of Hauling Company/Person: *Transition Ag Service*

Address of Hauling Company /Person:

314 S. Peppertree Ct Visalia 93277
Number and Street City Zip Code

Contact Person:

David Weaver 559-901-1373 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):

Drew Clark Farms 587 Camelia Ave Tulare 93274 280-4556
Name Number and Street City Zip Code Phone Number**Manure/Process Wastewater Destination Address or Assessor's Parcel Number:***158-060-030-000*

Number and Street City Zip Code Assessor's Parcel Number

Dates Hauled: 10/15/2023

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: 5500 Tons or Cubic Yards (indicate which units used)Manure Solids Content (if amount reported in tons): 53.2%

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

Attachment D

D-2

Waste Discharge Requirements General Order No. R5-2007-0035
Existing Milk Cow Dairies

Method used to determine amount of manure: Surge weight of
representative hauls

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 C.2 of Waste Discharge Requirements General Order No. R5-2007-0035) 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: Jim Baker Date: 6/24/2024

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Hauler's Signature: W. J. Baker Date: 6/24/23



January 19, 2023

Lab No. : VI 2340238
Customer No. : 4018573
Reference : 40101

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

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
DW#1	01/13/2023	01/13/2023	VI 2340238-001	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

SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
	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: 2023-01-21

Section: Case Narrative

Page 1 of 3

Page 1 of 3

Corporate Offices & Laboratory 853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)625-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	Office & Laboratory 2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	Office & Laboratory 563 E. Linda Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	Office & Laboratory 3442 Empressa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	Office & Laboratory 9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810
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January 19, 2023

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

Description : DW#1
 Project : 0159 Jim Bakrer Dairy

Lab No. : VI 2340238-001
 Customer No. : 4018573
 Reference : 40101
 Sampled On : January 13, 2023 at 09:00
 Sampled By : Sean
 Received On : January 13, 2023 at 15:30
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrate Nitrogen	19.3	0.4	mg/L		1		01/17/2023	14:00	lfs	SM 4500-NO3 F	01/17/2023	17:21	lfs
Conductivity	633	1	umhos/cm		1		01/18/2023	13:02	sta		01/18/2023	13:02	sta

DQF Flags Definition:

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



January 19, 2023

Innovative Ag Services, LLC

Lab No. : VI 2340238

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2510B	01/18/2023:200538STA (STK2330192-001)	Blank Dup	umhos/cm umhos/cm		ND 0.4%	<1 5	
Nitrate Nitrogen	4500NO3F	01/17/2023:200500LFS (STK2330694-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609	97.2% 93.2% 96.1% 1.5%	80-120 66-125 66-125 ≤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 analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

Corporate Offices & Laboratory

853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory

2600 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory

563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory

3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory

9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810



Laboratory Analysis Work Order

Nº 40101

ID: # 0459

2340230

LABORATORY: FGK

SITE NAME: Jim Bucker Dairy
 Billing: JAS

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO₃N (Dom) q. a
W2 EC, NO₃N, TDS, TN (Irr)
W3 NH₄-N (Ammonium)
W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
W6 NO₃N, NO₂ (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
W8 Other: _____

Plant Tissue

- P1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N*	pH	Temp
1	DIN #1	W1	1/13/23 9:00	SEAN	6		
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 samples, please note below.

NOTES: 3/23

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<u>JAS</u>	<u>JAS</u>	1/13/23 15:00	1/13/23 15:00
2 nd	<u>FGK</u>	<u>FGK</u>	1/13/23 15:00	1/13/23 15:00
3 rd	<u>JAS</u>	<u>JAS</u>	1/13/23 15:00	1/13/23 15:00
4 th	<u>JAS</u>	<u>JAS</u>	1/13/23 15:00	1/13/23 15:00

LABORATORY USE ONLY

Logged In By: _____

Total Samples: _____

Laboratory #: 1 1



February 16, 2023

Lab No. : VI 2340678

Customer No. : 4018573

Reference : 40142

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

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
DW#2	02/03/2023	02/03/2023	VI 2340678-001	DW

Sampling and Receipt Information:

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

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

Test Summary

SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
	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: 2023-02-17



February 16, 2023

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

Description : DW#2
 Project : 0159 Jim Bakker Dairy

Lab No. : VI 2340678-001
 Customer No. : 4018573
 Reference : 40142
 Sampled On : February 3, 2023 at 08:45
 Sampled By : Sean
 Received On : February 3, 2023 at 15:20
 Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrate Nitrogen	4.3	0.4	mg/L	10	1		02/10/2023	11:00	lfs	SM 4500-NO3 F	02/10/2023	12:43	lfs
Conductivity	261	1	umhos/cm	1600 ²	1		02/15/2023	13:59	sta		02/15/2023	13:59	sta

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.



February 16, 2023

Innovative Ag Services, LLC

Lab No. : VI 2340678

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2510B	02/15/2023:201667STA (STK2331416-001)	Blank Dup	umhos/cm umhos/cm		ND 0.9%	<1 5	
Nitrate Nitrogen	4500NO3F	02/10/2023:201493LFS (SP 2302035-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609	95.9% 97.4% 96.9% 0.4%	80-120 66-125 66-125 ≤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 analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.



Laboratory Analysis Work Order

Nº 40142

ID: # 01592340678LABORATORY: FGISITE NAME: JIM BALKER DAIRYBilling: TAS**ANALYSIS TO BE COMPLETED:****Irrigation/Ground Water (ELAP Standards)**W1 EC, NO₃N (Dom)W2 EC, NO₃N, TDS, TN (Irr)W3 NH₄-N (Ammonium)W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)W6 NO₃N, NO₂ (Dom ILRP, Annually)W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)

W8 Other: _____

20 201**Plant Tissue**P1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)

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

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

P4 TN, %M

P5 % Moisture

P6 NIR

P7 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N *	pH	Temp
1	DW #2	Dom	W1 2/3/23 8:45	SEAN	d		
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 samples, please note below.

NOTES: _____

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st		TAS	2/3/23 15:00	2/3/23 3:20
2 nd		FGI	2/3/23 15:00	2/3/23 17:30
3 rd		J	2/3/23 17:30	2/3/23 17:30
4 th			2/3/23 17:30	

LABORATORY USE ONLY

Logged In By: _____

Total Samples: _____

Laboratory #: 612103



October 16, 2023

Lab No. : VI 2346575
Customer No. : 4018573
Reference : 41424

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

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
Well #5	09/28/2023	09/28/2023	VI 2346575-001	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: 2023-10-16

Section: Case Narrative

Page 1 of 3

Page 1 of 3

Corporate Offices & Laboratory 853 Corporation Street Santa Paula, CA 93080 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	Office & Laboratory 2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	Office & Laboratory 563 E. Linda Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	Office & Laboratory 3442 Empresa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	Office & Laboratory 9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810
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October 16, 2023

Innovative Ag Services, LLC

1201 Delta View Road
Suite 5
Hanford, CA 93230

Description : Well #5
Project : 0159 Jim Bakker Dairy

Lab No. : VI 2346575-001

Customer No. : 4018573

Reference : 41424

Sampled On : September 28, 2023 at 07:30

Sampled By : Zeke

Received On : September 28, 2023 at 16:10

Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	10/11/2023	07:25	sta	EPA 351.2	10/13/2023	16:31	lcr
Nitrate Nitrogen	12.4	0.4	mg/L		1		09/29/2023	12:00	lfs	SM 4500-NO3 F	09/29/2023	15:26	lfs
Nitrogen, Total as Nitrogen	12.4	0.5	mg/L		1	l	10/11/2023	07:25	sta	Calc.	10/13/2023	16:31	lcr
Nitrate + Nitrite as N	12.4	0.4	mg/L		1		09/29/2023	12:00	lfs	SM 4500-NO3 F	09/29/2023	15:26	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	10/11/2023	07:25	sta	EPA 351.2	10/13/2023	16:31	lcr
Conductivity	461	1	umhos/cm		1		10/05/2023	10:18	krh	SM 4500-H+B	10/05/2023	13:18	krh
Solids, Total Dissolved (TDS)	330	20	mg/L		1		10/02/2023	10:50	ctl	SM 2540 C	10/03/2023	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



October 16, 2023

Innovative Ag Services, LLC

Lab No. : VI 2346575

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2346425-001)	Dup	umhos/cm		0.08%	5	
Solids, Total Dissolved	2540CE	10/02/2023:211059CTL (SP 2316441-001) (SP 2316441-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 102% 0.5% 0.8%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	10/11/2023:211433STA (SP 2316536-001) (VI 2346585-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 1.8% 81.5% 85.4% 4.5%	ND 93.1% 96.2% 94.4% ≤20 90-110 90-110 435 90-110 435 ≤20	<0.5 73-124 90-110 90-110 ≤20 90-110 90-110 435	
Nitrate + Nitrite as N	4500NO3F	09/29/2023:210984LFS (VI 2346551-002)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609	ND 98.2% 98.1% 98.4% 0.3%	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	09/29/2023:210984LFS (VI 2346551-002)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609	ND 98.2% 98.1% 98.4% 0.3%	<0.4 80-120 66-125 66-125 ≤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 analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.

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

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

Explanation

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



Laboratory Analysis Work Order

Nº 41424

ID: # 0159

2346575

LABORATORY: FGCSITE NAME: Jim BICKER DAIRYBilling: IAI

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- W1** EC, NO₃N (Dom)
W2 EC, NO₃N, TDS, TN (Irr)
W3 NH₄-N (Ammonium)
W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
W6 NO₃N, NO₂ (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
W8 Other: _____

Plant Tissue

- P1** TN, NO₃N, PO₄P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N *	pH	Temp
1	WELL # 5	IRR	W2 9-28/7:30	Zake			
2							
3							
4							
5							
6							
7							
8							

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

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

NOTES: 2.9%

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st		IAI		9-28-23 / 3:15
2 nd		FGC	9-28-23 15:58	
3 rd		FGC		9-28-23 16:10
4 th		FGC	9-28-23 16:10	

LABORATORY USE ONLY

Logged In By:

Total Samples: _____

Laboratory #: _____



November 6, 2023

Lab No. : VI 2347127

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

Customer No. : 4018573
 Reference : 41640

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
#2	10/20/2023	10/20/2023	VI 2347127-001	AGW
#3	10/20/2023	10/20/2023	VI 2347127-002	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: 2023-11-07

Section: Case Narrative

Page 1 of 4

Page 1 of 4

Corporate Offices & Laboratory 853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	Office & Laboratory 2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	Office & Laboratory 563 E. Lindo Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	Office & Laboratory 3442 Empresa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	Office & Laboratory 9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810
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November 6, 2023

Innovative Ag Services, LLC

1201 Delta View Road
Suite 5
Hanford, CA 93230

Description : #2
Project : 0159 Jim Bakker Dairy

Lab No. : VI 2347127-001

Customer No. : 4018573

Reference : 41640

Sampled On : October 20, 2023 at 07:40

Sampled By : Zeke

Received On : October 20, 2023 at 15:52

Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	11/01/2023	13:01	sta	EPA 351.2	11/03/2023	18:13	lcr
Nitrate Nitrogen	6.4	0.4	mg/L		1		10/24/2023	13:00	lfs	SM 4500-NO3 F	10/24/2023	15:36	lfs
Nitrogen, Total as Nitrogen	6.4	0.5	mg/L		1	l	11/01/2023	13:01	sta	Calc.	11/03/2023	18:13	lcr
Nitrate + Nitrite as N	6.4	0.4	mg/L		1		10/24/2023	13:00	lfs	SM 4500-NO3 F	10/24/2023	15:36	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	11/01/2023	13:01	sta	EPA 351.2	11/03/2023	18:13	lcr
Conductivity	230	1	umhos/cm		1		11/03/2023	07:56	krh	SM 4500-H+B	11/03/2023	09:35	krh
Solids, Total Dissolved (TDS)	140	20	mg/L		1		10/24/2023	13:00	ctl	SM 2540 C	10/25/2023	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



November 6, 2023

Innovative Ag Services, LLC

1201 Delta View Road
Suite 5
Hanford, CA 93230

Description : #3
Project : 0159 Jim Bakker Dairy

Lab No. : VI 2347127-002

Customer No. : 4018573

Reference : 41640

Sampled On : October 20, 2023 at 07:30

Sampled By : Zeke

Received On : October 20, 2023 at 15:52

Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U1	11/01/2023	13:01	sta	EPA 351.2	11/03/2023	18:16	lcr
Nitrate Nitrogen	36.8	0.4	mg/L		1		10/24/2023	13:00	lfs	SM 4500-NO3 F	10/24/2023	15:37	lfs
Nitrogen, Total as Nitrogen	36.8	0.5	mg/L		1	1	11/01/2023	13:01	sta	Calc.	11/03/2023	18:16	lcr
Nitrate + Nitrite as N	36.8	0.4	mg/L		1		10/24/2023	13:00	lfs	SM 4500-NO3 F	10/24/2023	15:37	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U1	11/01/2023	13:01	sta	EPA 351.2	11/03/2023	18:16	lcr
Conductivity	890	1	umhos/cm		1		11/02/2023	09:02	krh	SM 4500-H+B	11/02/2023	15:00	krh
Solids, Total Dissolved (TDS)	430	20	mg/L		1		10/24/2023	13:00	ctl	SM 2540 C	10/25/2023	11:00	ctl

DQF Flags Definition:

U Constituent results were non-detect.

1 The MS/MSD did not meet QC criteria.

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



November 6, 2023

Innovative Ag Services, LLC

Lab No. : VI 2347127

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	
	2320B	(VI 2347165-001)	Dup	umhos/cm		0.6%	5	
Solids, Total Dissolved	2540CE	10/24/2023:212021CTL (STK2354565-001) (STK2354565-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 105% 0.6% 0.6%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	11/01/2023:212413STA (VI 2347084-006) (VI 2347084-007)	Blank LCS MS MSDP MS MSDP	mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 1.6% 81.1% 79.4%	ND 92.7% 89.4% 90.9% 1.6% 90-110 435 90-110 435 90-110 435 ≤20 ≤20	<0.5 73-124 90-110 90-110 90-110 90-110 435 90-110 435 90-110 435 ≤20	
Nitrate + Nitrite as N	4500NO3F	10/24/2023:212033LFS (VI 2347156-001)	Blank LCS MS MSDP MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 1.9%	ND 98.9% 96.1% 91.3% 1.9%	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	10/24/2023:212033LFS (VI 2347156-001)	Blank LCS MS MSDP MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 1.9%	ND 98.9% 96.1% 91.3% 1.9%	<0.4 80-120 66-125 66-125 ≤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.



Laboratory Analysis Work Order

Nº 41640

ID: # 0159

2347107

SITE NAME: Jim Baicker DairBilling: JASLABORATORY: FGC

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- W1** EC, NO₃N (Dom)
W2 EC, NO₃N, TDS, TN (Irr) *Q1 Q2 Q3 Q4 Q5*
W3 NH₄-N (Ammonium)
W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
W6 NO₃N, NO₂ (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
W8 Other: _____

Plant Tissue

- P1** TN, NO₃N, PO₄P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N*	pH	Temp
1	#2	IRN	10-20 / 7:40	Zeke			
2	#3	IRN	10-20 / 7:30	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 samples, please note below.

NOTES: *BA*

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<i>EM</i>	JAS		10-20-23 / 1:30
2 nd	<i>EM</i>	FGC	10/20/23 19:36	
3 rd	<i>EM</i>	FGC		10/20/23 15:52
4 th	<i>EM</i>		10/20/23 15:52	

Laboratory Use Only	Logged In By:	Total Samples:	Laboratory #:
	<i>EM</i>	100	100

FLS 10/21/23 12:52 AM