



Livingston Dairy Consulting, Inc.

1635 E. Prosperity Ave., Ste B, Tulare
559-687-1440

Vitor Borba #1 Dairy WDID 5C16NC00042

7721 Flint Avenue Hanford, CA 93230

<input checked="" type="checkbox"/>	Annual Report
<input checked="" type="checkbox"/>	Water Analysis Samples
<input type="checkbox"/> N/A	Manure Manifest
<input type="checkbox"/> N/A	Facility / Land Map
<input checked="" type="checkbox"/>	CCA Nitrogen Retrofit Report
<input type="checkbox"/>	
<input type="checkbox"/>	

GEO Tracker Confirmation #

Date:

Facility Info

Reporting Period: 1/1/2023 to 12/31/2023

Name of the Facility

Dairy Name: Vitor Borba #1 Dairy WDID 5C16NC00042

Facility Address: 7721 Flint Avenue Hanford, CA 93230

Original Operation Date:

Facility APN's: x014 x090 x058 xxxx

RWQCB Basin Plan Designation: Tulare Lake Basin

☐ Check if any information has changed

Owner(s)

Owner(s) Name: Frank P. Barcellos & Sons (Dean & Lee Barcellos)

Mailing Address: 7705 Flint Avenue Hanford, CA 93230

Home Phone Number:

Cell Phone Number: 559-362-1777

☐ Check if any information has changed

Operator(s)

Operator(s) Name: Vitor Borba (Leases DAIRY ONLY)

Mailing Address: 7721 Flint Avenue Hanford, CA 93230

Home Phone Number:

Cell Phone Number: 559-904-2583

☐ Check if any information has changed

Herd Information

	Milk Cows	Dry Cows	Bred Heifers (12-24 mo)	Heifers (3-12 mo)	Calves (0-3 mo)
Open Confinement:	-	130	302	-	-
Number Under Roof	887	-	-	-	-
Maximum Number	887	130	302		
Average Number	887	130	302		
Average Live Weight (lbs)	950	975	660		

Average Milk Production: 66

Predominant Milk Cow Breed: Jersey

Manure Generated:

Total manure excreted by the herd:

Total nitrogen from manure:

Total salt from manure:

	ton/yr
	1,355.83
	@40% Moisture
	lbs
	98,564
	lbs
	11,650
	lbs
	31,323
	lbs
	-
	lbs

After Ammonia (30% loss applied)

68,995

lbs per reporting period

Process Wastewater Generated:

Process wastewater generated:

Total nitrogen generated:

Total salt (TDS) generated:

	gal
	12,950,200
	lbs
	69,290
	lbs
	26,419
	lbs
	91,756
	lbs
	656,472
	lbs

List of Land Application Areas

Field Name	APN	APN Acres	Cropable Acres	Total Harvest	Type of Waste Applied
North 60/ South 60	x014 x060 x069 xxxx, x014 x060 x065 xxxx	130	120	2	P.W. & D.M.
Field 4	x014 090 x060 xxxx, x014 x090 x058 xxxx	30	30	2	P.W. & D.M.
Barcellos #1 (6)	x014 x090 x062 xxxx, x014 x090 x065 xxxx	63	60	2	P.W. & D.M.
Elder Ranch (8)	x006 x040 x015 xxxx	95	90	2	Dry Manure
Fagundes W	x014 x080 x068 xxxx	160	73	2	Dry Manure
Fagundes E	x014 x080 x070 xxxx, x014 x080 x069 xxxx, x014 x080 x068 xxxx		77	2	Dry Manure
Total Crop Acres			450.00		

List of Fresh Water Sources

[illegible]

Winter Crops & Harvest

[illegible]

*Detectable L Valley Tech
Dellavalle*

0.10%	0.05%	0.01%	0.05%
0.001%	0.01%	0.01%	0.001%

Well / Canal Analysis

[illegible]

Detactable Limits

Dellavalle

EGL Environmental

Valley Tech

Soil Analysis (Winter)

[illegible]

Detectable Limits

Valley Tech

DellaValle

0.1 0.1

0.1 0.1

1.1

0.2

0.0015

0.0001%

[illegible]

DellaValle

0.1	0.1
-----	-----

0.0001%

Nutrient Import & Export

Nutrient Export-Did you sell, give away or otherwise remove slurry, process water or dry manure from your property?

**No
X**

Yes, Manifest attached (Attachment D)

Total Dry Manure Exported

Nutrient Import

No Dry manure nutrient imports entered

No Process wastewater nutrient imports entered

No Commerical or other nutrient imports entered

Total Process Water Exported

[illegible]

Process Water & Manure Analysis

Process Water																
Quarters:		NH4N (mg/L)	TKN (mg/L)	TP (mg/L)	TK (mg/L)	NO3N (mg/L)	NH3N (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	SO4 (mg/L)	CL (mg/L)	EC (ds/m)	TDS (mg/L)
1		444.0	524.0	65.1	605.0	1.0	-	-	-	-	-	-	-	-	7	4,490
2		497.0	581.0	69.9	692.0	1.0	-	-	-	-	-	-	-	-	9	5,900
3		438.0	441.0	106.0	500.0	1.0	-	126.0	174.0	265.0	0.0	67.0	122.0	6.2	6	3,800
4		285.0	299.0	66.0	239.0	1.0	-	-	-	-	-	-	-	-	-	3,290

Detectable Limits

Valley Tech	2.0	5.0	0.1	0.2											0.10	10
Dellavalle	0.2	0.7	0.02	0.2	0.01		0.05	0.4	0.10	0.9	3	0.01	0.03	0.001	10	

Qtr	Sample #:	Sample Date:	Source	lbs / Ac In			
				Inorg N	Org N	P2O5	K2O
1	3-24L44748	3/24/2023	Valley Tech	100.9	18.1	33.8	165.2
2	5-11L49511	5/11/2023	Valley Tech	112.9	19.0	36.3	188.9
3	8-17L62127	8/17/2023	Valley Tech	99.5	0.7	55.1	136.5
4	10-4L67900	10/4/2023	Valley Tech	64.8	3.2	34.3	65.3

Description	Sample #:	Date:	As Is/ Dry Weight	Source	Material Type
Manure	5-11M49492	5/11/2023	Dry Weight	Valley Tech	Corral Solids
Manure	10-4M67862	10/4/2023	Dry Weight	Valley Tech	Corral Solids

Dry Manure: (As Rec'd)											
	TN %	TP %	TK %	Ca	Mg	Na	S	CL	Salt	TFS	Moisture %
Corral	1.10	0.48	0.91	-	-	-	-	-	-	-	24.30
Corral	1.08	0.38	1.40	1.48	0.80	1.11	0.43	0.79	-	49.00	46.90

Detectable Limits

Valley Tech	0.01%	0.02%	0.02%								
Dellavalle	0.01%	0.01%	0.003%	0.001%	0.001%	0.001%	0.001%	0.000%	0.001%	0.001%	0.001%

Nutrient Applications

Field Name/Number: North 60/ South 60

Acres: 120.00

Field Name	Runway Number	Fertilizer Applied					Lab Sample Data					Yield		
		Dry Manure Applied (tons/ac)	Moist. %	Chem Fert total lbs	Fresh Water Applied (ac-in/ac)	Lagoon Water Applied (ac-in/ac)	N (lbs/Ac)	Total P (lbs/Ac)	Total K (lbs/Ac)	Salt (Lbs/Ac)	TFS	%	Expected Yield (tons/ac)	Actual Yield (tons/ac)
Date	Event / Source	-	-	-	-	-	-	-	-	-	-	-	-	-
11/20/22	W. Planting	-	-	-	-	-	-	-	-	-	-	-	-	-
1/16/23	Canal	-	-	-	5.19	-	0.0	-	-	2	-	-	-	-
1/16/23	Process Water	-	-	-	-	1.30	108.1	19.2	178.0	1,321	-	-	-	-
2/12/23	Canal	-	-	-	5.13	-	0.0	-	-	2	-	-	-	-
2/12/23	Process Water	-	-	-	-	1.28	106.8	18.9	175.7	1,304	-	-	-	-
3/7/23	Canal	-	-	-	5.15	-	0.0	-	-	2	-	-	-	-
3/7/23	Process Water	-	-	-	-	1.29	107.2	19.0	176.5	1,310	-	-	-	-
4/17/23	Canal	-	-	-	5.74	-	0.0	-	-	2	-	-	-	-
5/11/23	W. Harvest	-	-	-	-	-	(251.9)	(45.1)	(220.8)	-	8.24	-	-	24.00
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/23/23	S. Planting	-	-	-	-	-	-	-	-	-	-	-	-	-
6/8/23	Canal	-	-	-	5.88	-	0.0	-	-	2	-	-	-	-
6/30/23	Canal	-	-	-	5.17	-	0.0	-	-	2	-	-	-	-
6/30/23	Process Water	-	-	-	-	1.29	90.7	31.1	146.5	1,113	-	-	-	-
7/18/23	Canal	-	-	-	5.21	-	0.0	-	-	2	-	-	-	-
7/18/23	Process Water	-	-	-	-	1.30	91.4	31.3	147.7	1,123	-	-	-	-
8/9/23	Canal	-	-	-	5.97	-	0.0	-	-	2	-	-	-	-
8/26/23	Canal	-	-	-	5.24	-	0.0	-	-	2	-	-	-	-
8/26/23	Process Water	-	-	-	-	1.31	91.8	31.5	148.4	1,128	-	-	-	-
9/20/23	Canal	-	-	-	5.94	-	0.0	-	-	2	-	-	-	-
10/17/23	S. Harvest	-	-	-	-	-	(262.0)	(52.0)	(256.4)	-	5.72	-	-	31.60
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals:		0.0		0	54.61	7.77	82	54	496	7,316	13.96	0		55.60

Dry Weight
As Received

Field Name/Number: North 60/ South 60Acres: 120

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	596.3	150.9	972.9	7315.9
Nutrients Removed at Harvest	-513.9	-97.1	-477.3	0.0
Nutrient Balance	82.3	53.8	495.6	7315.9

Winter Nitrogen Crop App / Use Ratio: 1.31

Summer Nitrogen Crop App / Use Ratio: 1.07

Field Name/Number: North 60/ South 60Acres: 120**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N			
W. Manure App.		-	T/Ac	-	-	-
W. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q1	3.9	Ac In /Ac	322.1	130.7	636.3
	Q2	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	-	-	-
Canal		21.2	Ac In /Ac	0.1	-	-
Atm. Depos.		Yes		7.0	-	-
W. Planting	11/20/22					
W. Harvest	5/11/23	24.0	T/Ac	(251.9)	(103.3)	(265.0)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N			
S. Manure App.		-	T/Ac	-	-	-
S. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q2	1.3	Ac In /Ac	90.7	71.1	175.8
	Q3	2.6	Ac In /Ac	183.2	143.8	355.3
	Q4	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	1.089E-13	-	-
Canal		33.4	Ac In /Ac	0.2	-	-
Atm. Depos.		Yes		7.0	-	-
S. Planting	5/23/23					
S. Harvest	10/17/23	31.6	T/Ac	(262.0)	(119.1)	(307.7)

Nutrient Applications

Field Name/Number:

Field 4

Acres:

30.00

[illegible]

Field Name/Number: Field 4Acres: 30.00

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	516.2	60.9	697.6	6339.3
Nutrients Removed at Harvest	-411.0	-32.9	-286.1	0.0
Nutrient Balance	105.2	28.0	411.6	6339.3

Winter Nitrogen Crop App / Use Ratio: 1.32

Summer Nitrogen Crop App / Use Ratio: 1.27

Field Name/Number: Field 4 Acres: 30**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N			
W. Manure App.		-	T/Ac	-	-	-
W. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q1	2.7	Ac In /Ac	224.6	91.1	443.6
	Q2	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	-	-	-
Canal		23.1	Ac In /Ac	0.1	-	-
Atm. Depos.		Yes		7.0	-	-
W. Planting	11/22/22					
W. Harvest	5/15/23	20.1	T/Ac	(176.0)	(65.2)	(149.1)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N			
S. Manure App.		-	T/Ac	-	-	-
S. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q2	-	Ac In /Ac	-	-	-
	Q3	4.2	Ac In /Ac	291.3	228.6	564.9
	Q4	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	(0.0)	-	-
Canal		35.7	Ac In /Ac	0.2	-	-
Atm. Depos.		Yes		7.0	-	-
S. Planting	5/23/23					
S. Harvest	10/18/23	30.8	T/Ac	(234.9)	(107.6)	(264.4)

Nutrient Applications

Field Name/Number: Barcellos #1 (6)

Acres: 60.00

		Dry Manure Applied (tons/ac)	Moist. %	Chem Fert total lbs	Fresh Water Applied (ac-in/ac)	Lagoon Water Applied (ac-in/ac)	Lab Sample Data						Yield	
Date	Event / Source	(tons/ac)	%	lbs	(in/ac)	(in/ac)	N (lbs/Ac)	Total P (lbs/Ac)	Total K (lbs/Ac)	Salt (Lbs/Ac)	TFS	%	Expected Yield (tons/ac)	Actual Yield (tons/ac)
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/21/22	W. Planting	-	-	-	-	-	-	-	-	-	-	-	-	-
1/21/23	Canal	-	-	-	5.39	-	0.0	-	-	2	-	-	-	-
1/21/23	Process Water	-	-	-	-	1.35	112.3	19.9	184.8	1,372	-	-	-	-
2/17/23	Canal	-	-	-	5.52	-	0.0	-	-	2	-	-	-	-
2/17/23	Process Water	-	-	-	-	1.38	115.0	20.4	189.4	1,406	-	-	-	-
3/12/23	Canal	-	-	-	6.19	-	0.0	-	-	2	-	-	-	-
4/22/23	Canal	-	-	-	6.27	-	0.0	-	-	2	-	-	-	-
5/14/23	W. Harvest	-	-	-	-	-	(215.3)	(46.4)	(243.5)	-	8.24	-	-	22.20
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/22/23	S. Planting	-	-	-	-	-	-	-	-	-	-	-	-	-
6/13/23	Canal	-	-	-	6.36	-	0.0	-	-	2	-	-	-	-
7/5/23	Canal	-	-	-	5.35	-	0.0	-	-	2	-	-	-	-
7/5/23	Process Water	-	-	-	-	1.34	93.8	32.1	151.5	1,151	-	-	-	-
7/23/23	Canal	-	-	-	5.48	-	0.0	-	-	2	-	-	-	-
7/23/23	Process Water	-	-	-	-	1.37	96.1	32.9	155.3	1,180	-	-	-	-
8/14/23	Canal	-	-	-	6.23	-	0.0	-	-	2	-	-	-	-
8/31/23	Canal	-	-	-	5.26	-	0.0	-	-	2	-	-	-	-
8/31/23	Process Water	-	-	-	-	1.31	92.2	31.6	149.0	1,132	-	-	-	-
9/25/23	Canal	-	-	-	6.32	-	0.0	-	-	2	-	-	-	-
10/18/23	S. Harvest	-	-	-	-	-	(261.6)	(35.5)	(217.3)	-	5.72	-	-	31.40
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals:		0.0		0	58.37	6.75	33	55	369	6,259	13.96		0	53.60

Field Name/Number: Barcellos #1 (6)Acres: 60.00

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	509.6	59.7	688.9	6258.8
Nutrients Removed at Harvest	-476.9	-35.7	-382.5	0.0
Nutrient Balance	32.7	24.0	306.5	6258.8

Winter Nitrogen Crop App / Use Ratio: 1.09

Summer Nitrogen Crop App / Use Ratio: 1.11

Field Name/Number: Barcellos #1 (6) Acres: 60**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N			
W. Manure App.		-	T/Ac	-	-	-
W. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q1	2.7	Ac In /Ac	227.3	92.2	449.0
	Q2	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	-	-	-
Canal		23.4	Ac In /Ac	0.1	-	-
Atm. Depos.		Yes		7.0	-	-
W. Planting	11/21/22					
W. Harvest	5/14/23	22.2	T/Ac	(215.3)	(106.4)	(292.2)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N			
S. Manure App.		-	T/Ac	-	-	-
S. Comm Fert App.		-	lbs/Ac	-	-	-
Process Water	Q2	-	Ac In /Ac	-	-	-
	Q3	4.0	Ac In /Ac	282.0	221.3	546.9
	Q4	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	(0.0)	-	-
Canal		35.0	Ac In /Ac	0.2	-	-
Atm. Depos.		Yes		7.0	-	-
S. Planting	5/22/23					
S. Harvest	10/18/23	31.4	T/Ac	(261.6)	(81.2)	(260.7)

Nutrient Applications

Field Name/Number: Elder Ranch (8)

Acres: **90.00**

[illegible]

Field Name/Number: Elder Ranch (8)Acres: 90.00

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	306.9	33.4	232.7	18.8
Nutrients Removed at Harvest	-499.2	-44.0	-329.3	0.0
Nutrient Balance	-192.2	-10.6	-96.6	18.8

Winter Nitrogen Crop App / Use Ratio: 0.98

Summer Nitrogen Crop App / Use Ratio: 1.18

Field Name/Number: Elder Ranch (8) Acres: 90**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N		
W. Manure App.		-	T/Ac	-	-
W. Comm Fert App.		120.0	lbs/Ac	120.0	
Process Water	Q1	-	Ac In /Ac	-	-
	Q2	-	Ac In /Ac	-	-
Well Water		-	Ac In /Ac	120.0	
Canal		25.0	Ac In /Ac	0.1	
Atm. Depos.		Yes		7.0	
W. Planting	11/25/22				
W. Harvest	5/12/23	21.2	T/Ac	(251.0)	(102.0) (279.4)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N		
S. Manure App.		10.0	T/Ac	86.7	175.1 336.4
S. Comm Fert App.		100.0	lbs/Ac	100.0	-
Process Water	Q2	-	Ac In /Ac	-	-
	Q3	-	Ac In /Ac	-	-
	Q4	-	Ac In /Ac	-	-
Well Water		-	Ac In /Ac	100.0	
Canal		37.9	Ac In /Ac	0.2	
Atm. Depos.		Yes		7.0	
S. Planting	5/19/23				
S. Harvest	10/10/23	32.3	T/Ac	(248.1)	(128.7) (196.6)

Nutrient Applications

Field Name/Number:

Fagundes W

Acres:

73.00

[illegible]

Field Name/Number: Fagundes WAcres: 73.00

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	200.3	0.0	0.0	18.2
Nutrients Removed at Harvest	-358.9	-32.7	-187.4	0.0
Nutrient Balance	-158.6	-32.7	-187.4	18.2

Winter Nitrogen Crop App / Use Ratio: 1.15

Summer Nitrogen Crop App / Use Ratio: 1.16

Field Name/Number: Fagundes W Acres: 73**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N		
W. Manure App.		-	T/Ac	-	-
W. Comm Fert App.		100.0	lbs/Ac	100.0	
Process Water	Q1	-	Ac In /Ac	-	-
	Q2	-	Ac In /Ac	-	-
Well Water		-	Ac In /Ac	100.0	
Canal		24.2	Ac In /Ac	0.1	
Atm. Depos.		Yes		7.0	
W. Planting	11/23/22				
W. Harvest	5/10/23	20.8	T/Ac	(179.6)	(73.8) (147.4)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N		
S. Manure App.		-	T/Ac	-	-
S. Comm Fert App.		100.0	lbs/Ac	100.0	-
Process Water	Q2	-	Ac In /Ac	-	-
	Q3	-	Ac In /Ac	-	-
	Q4	-	Ac In /Ac	-	-
Well Water		-	Ac In /Ac	100.0	
Canal		36.7	Ac In /Ac	0.2	
Atm. Depos.		Yes		7.0	
S. Planting	5/17/23				
S. Harvest	10/9/23	26.5	T/Ac	(179.3)	(97.6) (123.6)

Nutrient Applications

Field Name/Number:

Fagundes E**Acres:**

77.00

[illegible]

Field Name/Number: Fagundes EAcres: 77.00

	Total N (lbs/ac)	Total P (lbs/ac)	Total K Lbs/ac)	Total Salts (lbs/ac)
Nutrients Applied	160.3	0.0	0.0	18.7
Nutrients Removed at Harvest	-276.2	-27.1	-219.2	0.0
Nutrient Balance	-115.9	-27.1	-219.2	18.7

Winter Nitrogen Crop App / Use Ratio: 1.21

Summer Nitrogen Crop App / Use Ratio: 1.21

Field Name/Number: Fagundes E Acres: 77**Winter Crop** **Wheat, Silage**

Nutrient Summary :		Applied	N			
W. Manure App.		-	T/Ac	-	-	-
W. Comm Fert App.		80.0	lbs/Ac	80.0		
Process Water	Q1	-	Ac In /Ac	-	-	-
	Q2	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	80.0		
Canal		24.9	Ac In /Ac	0.1		
Atm. Depos.		Yes		7.0		
W. Planting	11/23/22					
W. Harvest	5/10/23	21.5	T/Ac	(137.7)	(69.7)	(90.4)

Summer Crop **Corn, Silage**

Nutrient Summary :		Applied	N			
S. Manure App.		-	T/Ac	-	-	-
S. Comm Fert App.		80.0	lbs/Ac	80.0	-	-
Process Water	Q2	-	Ac In /Ac	-	-	-
	Q3	-	Ac In /Ac	-	-	-
	Q4	-	Ac In /Ac	-	-	-
Well Water		-	Ac In /Ac	80.0		
Canal		37.6	Ac In /Ac	0.2		
Atm. Depos.		Yes		7.0		
S. Planting	5/17/23					
S. Harvest	10/9/23	26.5	T/Ac	(138.6)	(72.6)	(226.4)

Notes

Without allowance for the significant amount of rainfall during the winter months of 2022/2023, the irrigation logs on each field page of the annual report, reflect canal and/or well used only during that time frame. The facility did not irrigate during the "Significant Storm Events".

It is inaccurate to present "salt" application without acknowledging that there is substantial uptake and utilization of "salts" by crops. If it is possible to calculate "salt" application, it is also possible to calculate "salt" utilization. That calculation should be included in this report. To calculate "salt" utilization is a lengthy process and cannot be done with the constituents required in the Revised General Order sampling requirements.

The signature(s) affixed to this report does not affirmatively refer to those references to "salt" that we know to be incorrect.

VB (Initial)

Exception Reporting

Manure , Process Water and Other Dairy Waste Discharges:

The following is a summary of all manure and process water 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.

No, manure or process water discharges occurred during the reporting period

Storm Water Discharges:

The follow is a summary of all storm water discharges from the production area to surface water during the reporting period when not in accordance with the facility's Nutrient Management Plan.

No, storm water discharges occurred during the reporting period

Land Application Area To Surface Water Discharges:

The following is a summary of all discharges from the land application area surface water that have occurred during the reporting period when not in accordance with the facility's Nutrient

No, land application area to surface water discharges occurred during the reporting period

Nutrient Management Plan (NMP) & Written Agreement Statement

Nutrient Management Plan Statement:

Was the facility NMP updated in the reporting period?

Yes

Was the facility's NMP developed and approved by a certified nutrient management specialist?

Yes

Written Agreements:

Are there any written agreements with third parties to receive manure or process water that are new or were revised within the reporting period?

No

Owner and/or Operator Certification

**I certify under penalty of law that all information submitted as part of this document is accurate and true. Certification signatures by a California Registered Professional have been supplied as needed in Part II. I have personally examined and am familiar with the information submitted in Parts I and II of 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.*

Dean Barcellos
Signature of Owner of Facility

Vitor Borba
Signature of Operator of Facility

Frank P. Barcellos & Sons (Dean & Lee Barcellos)
Print Name

Vitor Borba (Leases DAIRY ONLY)
Print Name

Apr 15, 2024
Date

5-9-24
Date

**Facility Name:**

2023

Sample Container: (Circle one)

Sample Collection Location: (Circle one)

Sample Collection Method: (Circle one) *All Samples are labeled with the facility name, date, contents, location and description ** Please see the Sample and Anylsis Plan for more detailed descriptions.

Well: Sample taken at the Discharge Pipe, Spigot or Faucet using a sample container provided by laboratory

[illegible]

Sample Preservation Method: (Circle one)

Ice Pack



February 28, 2023

Lab No. : VI 2340609

Livingston Dairy Consulting, Inc
 1635 E. Prosperity Suite B
 Tulare, CA 93274

Customer No. : 4018505

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
Barn	02/01/2023	02/01/2023	VI 2340609-001	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

	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-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: 2023-02-28

February 28, 2023

Livingston Dairy Consulting, Inc
 1635 E. Prosperity Suite B
 Tulare, CA 93274

Description : Barn
 Project : W-6 Vitor Borba #1

Lab No. : VI 2340609-001
 Customer No. : 4018505

Sampled On : February 1, 2023 at 07:32
 Sampled By : Marlene & Kaylin
 Received On : February 1, 2023 at 14:04
 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
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	02/14/2023	10:47	sta	EPA 351.2	02/19/2023	21:04	lcr
Nitrate Nitrogen	18.0	0.4	mg/L	10	1		02/02/2023	13:00	lfs	SM 4500-NO3 F	02/02/2023	14:00	lfs
Nitrogen, Total as Nitrogen	18.0	0.5	mg/L		1	1	02/14/2023	10:47	sta	EPA 351.2	02/19/2023	21:04	lcr
Nitrate + Nitrite as N	18.0	0.4	mg/L	10	1		02/02/2023	13:00	lfs	SM 4500-NO3 F	02/02/2023	14:00	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	02/14/2023	10:47	sta	EPA 351.2	02/19/2023	21:04	lcr
Conductivity	643	1	umhos/cm	1600 ²	1		02/15/2023	13:59	sta		02/15/2023	13:59	sta
Solids, Total Dissolved (TDS)	440	20	mg/L	1000 ²	1		02/03/2023	15:36	ctl	SM 2540 C	02/06/2023	11:52	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

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

February 28, 2023
 Livingston Dairy Consulting, Inc.

Lab No. : VI 2340609
 Customer No. : 4018505

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2510B	02/15/2023:201667STA (VI 2340609-001)	Blank	umhos/cm		ND	<1	
			Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	02/03/2023:201214CTL (VI 2340630-003) (VI 2340630-003)	Blank	mg/L		ND	<20	
			LCS	mg/L	990.8	99.8 %	90-110	
			Dup	mg/L		0.3%	5	
			Dup	mg/L		3.0%	5	
Nitrogen, Total Kjeldahl	351.2	02/14/2023:201629STA (VI 2340618-001)	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	88.1%	73-124	
			MS	mg/L	12.00	62.8%	54-136	
			MSD	mg/L	12.00	58.3%	54-136	
		(VI 2340608-002)	MSRPD	mg/L	12.00	7.6%	≤27	
			MS	mg/L	12.00	47.0%	<A%	
			MSD	mg/L	12.00	33.6%	54-136	435
			MSRPD	mg/L	12.00	34.7%	≤27	435
Nitrate + Nitrite as N	4500NO3F	02/02/2023:201191LFS (SP 2301542-001)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.2%	80-120	
			MS	mg/L	5.609	82.3%	66-125	
			MSD	mg/L	5.609	86.9%	66-125	
			MSRPD	mg/L	5.609	1.9%	≤30.4	
Nitrate Nitrogen	4500NO3F	02/02/2023:201191LFS (SP 2301542-001)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.2%	80-120	
			MS	mg/L	5.609	82.3%	66-125	
			MSD	mg/L	5.609	86.9%	66-125	
			MSRPD	mg/L	5.609	1.9%	≤30.4	

Definition

- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.
- Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of 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.

Inter-Laboratory Condition Upon Receipt (Attach to COC)

Sample Receipt at: STK CC

CH VI

1. Number of ice chests/packages received: 1 Shipping tracking # CTC

2. Were samples received in a chilled condition? Temps: 6.9 / 4.9 / 1 / 1 / 1
Surface water SWTR bact samples: A sample that has a temperature upon receipt of $>10^{\circ}\text{C}$, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.

- | | | | |
|---|---|-----------------------------|-----|
| 3. Do the number of bottles received agree with the COC? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 4. Were samples received intact? (i.e. no broken bottles, leaks etc.) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 5. VOAs checked for Headspace? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 6. Were sample custody seals intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 7. If required, was sample split for pH analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 8. Were all analyses within holding times at time of receipt? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 9. Verify sample date, time and sampler name | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.

Sample Receipt Review completed by (initials): MA

Sample Receipt at SP:

1. Were samples received in a chilled condition? Temps: 1 / 1 / 1 / 1 / 1

Acceptable is above freezing to 6°C . If many packages are received at one time check for tests/H.T.'s/rushes/

2. Shipping tracking numbers: 558732941 945
933

- | | | | |
|---|---|-----------------------------|-----|
| 3. Do the number of bottles received agree with the COC? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 4. Were samples received intact? (i.e. no broken bottles, leaks etc.) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 5. Were sample custody seals intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

- | | | | |
|--|---|-----------------------------|---------|
| 1. Were all requested analyses understood and acceptable? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 2. Did bottle labels correspond with the client's ID's? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 3. Were all bottles requiring sample preservation properly preserved?
[Exception: Oil & Grease, VOA and CrVI verified in lab] | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A FGL |
| 4. VOAs checked for Headspace? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 5. Have rush or project due dates been checked and accepted? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | N/A |
| 6. Were all analyses within holding times at time of receipt? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): MD

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

- | | |
|----------------------------|---------------------|
| 1. Person Contacted: _____ | Phone Number: _____ |
| Initiated By: _____ | Date: _____ |
| Problem: _____ | |
| Resolution: _____ | |
| | |
| 2. Person Contacted: _____ | Phone Number: _____ |
| Initiated By: _____ | |
| Problem: _____ | |
| Resolution: _____ | |

(Please use the back of this sheet for additional contact contacts)

(4018505)
Livingston Dairy Consulting, Inc.
VI 2340609

iv 02/01/2023 16:18:09



VI 2340609

March 9, 2023

Livingston Dairy Consulting, Inc
1635 E. Prosperity Suite B
Tulare, CA 93274

Lab No. : VI 2340615

Customer No. : 4018505

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	(1 page)	: Results for each sample submitted.
Quality Control	(2 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
Barn 2	02/01/2023	02/01/2023	VI 2340615-001	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

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

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**

 Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-03-09

March 9, 2023

Livingston Dairy Consulting, Inc
 1635 E. Prosperity Suite B
 Tulare, CA 93274

Lab No. : VI 2340615-001
 Customer No.: 4018505

Sampled On : February 1, 2023 at 07:38
 Sampled By : Marlene & Kaylin
 Received On : February 1, 2023 at 14:04
 Matrix : Drinking Water

Description : Barn 2
 Project : W-4 Vitor Borba #1

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis		
Dairy Analysis							Date	Time	Who	Method	Date	Time Who
Alkalinity (as CaCO ₃)	180	10	mg/L		1		02/04/2023	20:41	amm	SM 4500-H+B	02/05/2023	09:35 amm
Bicarbonate	220	10	mg/L		1		02/04/2023	20:41	amm	SM 4500-H+B	02/05/2023	09:35 amm
Carbonate	ND	10	mg/L		1	U	02/04/2023	20:41	amm	SM 4500-H+B	02/05/2023	09:35 amm
Hydroxide	ND	10	mg/L		1	U	02/04/2023	20:41	amm	SM 4500-H+B	02/05/2023	09:35 amm
Chloride	21	1	mg/L	500 ²	1		02/02/2023	12:02	ldm	EPA 300.0	02/02/2023	18:15 ldm
Nitrate Nitrogen	19.9	0.1	mg/L	10	1		02/02/2023	12:02	ldm	EPA 300.0	02/02/2023	18:15 ldm
Conductivity	684	1	umhos/cm	1600 ²	1		02/04/2023	20:41	amm	SM 4500-H+B	02/05/2023	09:35 amm
Sulfate	71.1	0.5	mg/L	500 ²	1		02/02/2023	12:02	ldm	EPA 300.0	02/02/2023	18:15 ldm
Solids, Total Dissolved (TDS)	500	20	mg/L	1000 ²	1		02/03/2023	11:24	ctl	SM 2540 C	02/06/2023	12:59 ctl
Calcium	91	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	18:37 ac
Magnesium	15	1	mg/L		1	I	02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	18:37 ac
Sodium	38	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	18:37 ac

DQF Flags Definition:

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

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

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

March 9, 2023

Livingston Dairy Consulting, Inc.

Lab No. : VI 2340615

Customer No. : 4018505

Quality Control - Metals

Quality Control - Metals											
Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note			
Metals Calcium	200.7	02/23/2023:202002EJC (CC 2380566-001) (CC 2380566-002)	Blank	mg/L		ND	<1				
			LCS	mg/L	12.00	101 %	85-115				
			MS	mg/L	12.00	-71.2 %	<¼				
			MSD	mg/L	12.00	50.4 %	<¼				
			MSRPD	mg/L	0.8000	15.7%	≤20.0				
			MS	mg/L	12.00	-81.6 %	<¼				
			MSD	mg/L	12.00	-76.0 %	<¼				
			MSRPD	mg/L	0.8000	0.8%	≤20.0				
			Magnesium	200.7	02/23/2023:202002EJC (CC 2380566-001) (CC 2380566-002)	Blank	mg/L		ND	<1	
						LCS	mg/L	12.00	99.5 %	85-115	
MS	mg/L	12.00				13.9 %	75-125	435			
MSD	mg/L	12.00				71.5 %	75-125	435			
MSRPD	mg/L	0.8000				15.5%	≤20				
MS	mg/L	12.00				-4.1 %	75-125	435			
MSD	mg/L	12.00				-11.4 %	75-125	435			
MSRPD	mg/L	0.8000				1.9%	≤20				
Sodium	200.7	02/23/2023:202002EJC (CC 2380566-001) (CC 2380566-002)				Blank	mg/L		ND	<1	
						LCS	mg/L	12.00	98.4 %	85-115	
			MS	mg/L	12.00	-162 %	<¼				
			MSD	mg/L	12.00	1540 %	<¼				
			MSRPD	mg/L	0.8000	15.8%	≤20.0				
			MS	mg/L	12.00	-2490 %	<¼				
			MSD	mg/L	12.00	-3160 %	<¼				
			MSRPD	mg/L	0.8000	7.6%	≤20.0				

Definition

- <¼ : High Sample Background - Spike concentration was less than one forth of the sample concentration.
- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

Explanation

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

March 9, 2023

Livingston Dairy Consulting, Inc.

Lab No. : VI 2340615

Customer No. : 4018505

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO ₃)	2320B	02/04/2023:201239AMM	ND	mg/L		0.2%	10	435
Bicarbonate	2320B	(VI 2340484-001)	Dup	mg/L		0.2%	10	
E. C.	2320B	(VI 2340484-001)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	02/03/2023:201214CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	990.8	100 %	90-110	
			(VI 2340568-001)	Dup	mg/L	2.7%	5	
			(VI 2340568-001)	Dup	mg/L	1.6%	5	
Chloride	300.0	02/02/2023:201219LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	97.1 %	90-110	
			MS	mg/L	50.00	99.4 %	85-121	
			(STK2331230-003)	MSD	mg/L	100 %	85-121	
			MSRPD	mg/L	10.00	0.7%	≤19	
			MS	mg/L	50.00	101 %	85-121	
			(CH 2370567-001)	MSD	mg/L	96.8 %	85-121	
			MSRPD	mg/L	10.00	4.3%	≤19	
Nitrate Nitrogen	300.0	02/02/2023:201219LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	97.0 %	90-110	
			MS	mg/L	40.00	101 %	85-119	
			(STK2331230-003)	MSD	mg/L	101 %	85-119	
			MSRPD	mg/L	10.00	0.7%	≤19	
			MS	mg/L	40.00	104 %	85-119	
			(CH 2370567-001)	MSD	mg/L	98.8 %	85-119	
			MSRPD	mg/L	10.00	4.5%	≤19	
Sulfate	300.0	02/02/2023:201219LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	98.5 %	90-110	
			MS	mg/L	100.0	100 %	82-124	
			(STK2331230-003)	MSD	mg/L	101 %	82-124	
			MSRPD	mg/L	10.00	0.7%	≤23	
			MS	mg/L	100.0	104 %	82-124	
			(CH 2370567-001)	MSD	mg/L	98.7 %	82-124	
			MSRPD	mg/L	10.00	4.7%	≤23	

Definition

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

Client: Livingston Dairy Consulting, Inc. Address: Livingston Dairy Consulting, Inc 1635 E. Prosperity Suite B Tulare, CA 93274 Phone: (559)687-1440 Fax: Contact Person: Noreen Livingston Project Name: W-4 Vitor Borda #1 Purchase Order Number: Quote Number: VI 20210208-01 Sampler(s): Marcene & Kaylin		42085:03/01/2022 TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information	
Method of Sampling: Composite(C) Grab(G) Type of Sample: **SEE REVERSE SIDE** Potable(P) Non-Potable(NP) Ag Water(AgW) Bacti Type: Other(O) System(SYS) Source(SR) Waste(W) Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL) Dairy Analysis-W-4-Aik. (CaCO3, Cl, Conductivity, NO3-N, TDS, SO4, Ca, Na, Mg 16oz(P))			
Lab Number: VI 2340615 4-18505			
Samp Num	Location Description	Date Sampled	Time Sampled
1	Barn 2	2/1	7:38 AM
2			
3			
4			
5			
6			
7			
8			
9			
10			
Remarks:		Relinquished Date: 2/2/23 Time: 1140 Received By: CLS Relinquished Date: 2/2/23 Time: 1140 Received By: me	

Corporate Offices & Laboratory 853 Corporation Street Santa Paula, CA 93060 Phone: (805) 392-2000 Env Fax: (805) 525-4172 / Ag Fax: (805) 392-2063	Office & Laboratory 2500 Stagecoach Road Stockton, CA 95215 Phone: (209) 942-0182 Fax: (209) 942-0423	Office & Laboratory 563 E. Lindo Chico, CA 95926 Phone: (530) 343-5818 Fax: (530) 343-3807	Office & Laboratory 3442 Empressa Drive, Suite D San Luis Obispo, CA 93401 Phone: (805) 783-2940 Fax: (805) 783-2912	Office & Laboratory 9415 W. Goshen Avenue Visalia, CA 93291 Phone: (559) 734-9473 Fax: (559) 734-8435
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Inter-Laboratory Condition Upon Receipt (Attach to COC)

Sample Receipt at: STK CC

CH VI

1. Number of ice chests/packages received: 1 Shipping tracking # CTC

2. Were samples received in a chilled condition? Temps: 201 / 49 / / /

Surface water SWTR bact samples: A sample that has a temperature upon receipt of $>10^{\circ}\text{C}$, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.

3. Do the number of bottles received agree with the COC? ☒ Yes No N/A

4. Were samples received intact? (i.e. no broken bottles, leaks etc.) ☒ Yes No N/A

5. VOAs checked for Headspace? ☒ Yes No N/A

6. Were sample custody seals intact? ☒ Yes No N/A

7. If required, was sample split for pH analysis? ☒ Yes No N/A

8. Were all analyses within holding times at time of receipt? ☒ Yes No

9. Verify sample date, time and sampler name ☒ Yes No

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.

Sample Receipt Review completed by (initials): QA

Sample Receipt at SP:

1. Were samples received in a chilled condition? Temps: 1C / / / /

Acceptable is above freezing to 6°C . If many packages are received at one time check for tests/H.T.'s/rushes/

2. Shipping tracking numbers: 558732941 945

3. Do the number of bottles received agree with the COC? ☒ Yes No N/A

4. Were samples received intact? (i.e. no broken bottles, leaks etc.) ☒ Yes No N/A

5. Were sample custody seals intact? ☒ Yes No N/A

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? ☒ Yes No

2. Did bottle labels correspond with the client's ID's? ☒ Yes No

3. Were all bottles requiring sample preservation properly preserved? ☒ Yes No N/A FGL
[Exception: Oil & Grease, VOA and CrVI verified in lab]

4. VOAs checked for Headspace? ☒ Yes No N/A

5. Have rush or project due dates been checked and accepted? ☒ Yes No N/A

6. Were all analyses within holding times at time of receipt? ☒ Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): MX

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____

Initiated By: _____ Date: _____

Problem: _____

Resolution: _____

2. Person Contacted: _____ Phone Number: _____

Initiated By: _____

Problem: _____

Resolution: _____

(Please use the back of this sheet for additional contacts)

(4018505)
Livingston Dairy Consulting, Inc.

VI 2340615

iv 02/01/2023 16:18:47



VI 2340615

July 31, 2023

Livingston Dairy Consulting, Inc
1635 E. Prosperity Suite B
Tulare, CA 93274

Lab No. : VI 2344172
Customer No. : 4018505

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
Elder Dom	07/07/2023	07/07/2023	VI 2344172-001	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

EPA 351.2	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

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

KD: EHB

Approved By **Kelly A. Dunnahoo, B.S.**

 Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-08-01

July 31, 2023

Livingston Dairy Consulting, Inc
 1635 E. Prosperity Suite B
 Tulare, CA 93274

Description : Elder Dom
 Project : W-6 Vitor Borba #1

Lab No. : VI 2344172-001
 Customer No. : 4018505

Sampled On : July 7, 2023 at 06:03
 Sampled By : Noreen / Marlene
 Received On : July 7, 2023 at 11:39
 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
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	07/25/2023	10:41	sta	EPA 351.2	07/28/2023	18:52	lcr
Nitrate Nitrogen	3.7	0.4	mg/L	10	1		07/14/2023	11:00	lfs	SM 4500-NO3 F	07/14/2023	13:11	lfs
Nitrogen, Total as Nitrogen	3.7	0.5	mg/L		1		07/25/2023	10:41	sta	Calc.	07/28/2023	18:52	lcr
Nitrate + Nitrite as N	3.7	0.4	mg/L	10	1		07/14/2023	11:00	lfs	SM 4500-NO3 F	07/14/2023	13:11	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	07/25/2023	10:41	sta	EPA 351.2	07/28/2023	18:52	lcr
Conductivity	302	1	umhos/cm	1600 ²	1		07/12/2023	14:47	amm	SM 4500-H+B	07/12/2023	16:22	amm
Solids, Total Dissolved (TDS)	230	20	mg/L	1000 ²	1	I	07/11/2023	10:45	ctl	SM 2540 C	07/12/2023	12:00	ctl

DQF Flags Definition:

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

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

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

July 31, 2023

Livingston Dairy Consulting, Inc.

Lab No. : VI 2344172

Customer No. : 4018505

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(SP 2311379-001)	Dup	umhos/cm		0.2%	5	
Solids, Total Dissolved	2540CE	07/11/2023:207527CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	993.7	98.8%	90-110	
			(VI 2344180-001) Dup	mg/L		7.98%	5	440
			(VI 2344180-001) Dup	mg/L		0.1%	5	
Nitrogen, Total Kjeldahl	351.2	07/25/2023:208151STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	96.1%	73-124	
			MS	mg/L	12.00	95.7%	54-136	
			(SP 2311637-004) MSD	mg/L	12.00	94.8%	54-136	
			MSRPD	mg/L		0.8%	≤27	
			MS	mg/L	12.00	79.9%	54-136	
			(STK2338896-006) MSD	mg/L	12.00	81.9%	54-136	
			MSRPD	mg/L		2.5%	≤27	
Nitrate + Nitrite as N	4500NO3F	07/14/2023:207745LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	101%	80-120	
			MS	mg/L	5.609	93.6%	66-125	
			(CH 2375111-001) MSD	mg/L	5.609	95.4%	66-125	
			MSRPD	mg/L		1.1%	≤30.4	
Nitrate Nitrogen	4500NO3F	07/14/2023:207745LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	101%	80-120	
			MS	mg/L	5.609	93.6%	66-125	
			(CH 2375111-001) MSD	mg/L	5.609	95.4%	66-125	
			MSRPD	mg/L		1.1%	≤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

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

Special

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information		42086:04/01/2023	
Client: Livingston Dairy Consulting, Inc. Address: Livingston Dairy Consulting, Inc 1635 E. Prosperity Suite B Tulare, CA 93274	Phone: (559)687-1440 Fax: Contact Person: Noreen Livingston Project Name: W-6 Vitor Barba #1 Purchase Order Number: Quote Number: VI 20210208-01	Sampling Fee: Pickup Fee: Time: / / Compositor Setup Date: / / Time: / /	Lab Number: VI 2344172 4-18505
Sampler(s) Noreen & Markene	Method of Sampling: Composite(C) Grab(G)	Type of Sample	Relinquished
Potable(P) Non-Potable(NP) Ag Water(AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL)	Other(O) Special(SPL)
Dairy Analysis-W-6-Conductivity, NO3-N, Total N, TDS	16oz(P)	Bottles/Containers Split Fee	8oz(P)-H2SO4
1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
8	1	1	1
9	1	1	1
10	1	1	1
Remarks:	Relinquished	Date: 7/7/23 1139	Time: 1139
	Received By: SRO	Date: 7/7/23	Time: 1139
	Relinquished	Date: 7/7/23	Time: 1730
	Received By: GLS	Date: 7/8/23	Time: 1330
	Relinquished	Date: 7/7/23	Time: 1730
	Received By: GLS	Date: 7/7/23	Time: 1730

Inter-Laboratory Condition Upon Receipt (Attach to COC)

Sample Receipt at: STK CC

CH VI

- Number of ice chests/packages received: 1 Shipping tracking # OTC
- Were samples received in a chilled condition? Temps: 20 / 59 / / /
Surface water SWTR bact samples: A sample that has a temperature upon receipt of $>10^{\circ}\text{C}$, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
- Do the number of bottles received agree with the COC? ☒ Yes No N/A
- Were samples received intact? (i.e. no broken bottles, leaks etc.) ☒ Yes No N/A
- VOAs checked for Headspace? ☒ Yes No N/A
- Were sample custody seals intact? ☒ Yes No N/A
- If required, was sample split for pH analysis? ☒ Yes No N/A
- Were all analyses within holding times at time of receipt? ☒ Yes No
- Verify sample date, time and sampler name ☒ Yes No

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.

Sample Receipt Review completed by (initials): SRO

Sample Receipt at SP:

- Were samples received in a chilled condition? Temps: 1 / / / /
Acceptable is above freezing to 6°C . If many packages are received at one time check for tests/H.T.'s/rushes/
- Shipping tracking numbers: 559726594 / 85
- Do the number of bottles received agree with the COC? ☒ Yes No N/A
- Were samples received intact? (i.e. no broken bottles, leaks etc.) ☒ Yes No N/A
- Were sample custody seals intact? ☒ Yes No N/A

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

- Were all requested analyses understood and acceptable? ☒ Yes No
- Did bottle labels correspond with the client's ID's? ☒ Yes No
- Were all bottles requiring sample preservation properly preserved? ☒ Yes No N/A FGL
[Exception: Oil & Grease, VOA and CrVI verified in lab]
- VOAs checked for Headspace? ☒ Yes No N/A
- Have rush or project due dates been checked and accepted? ☒ Yes No N/A
- Were all analyses within holding times at time of receipt? ☒ Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): CDA

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

- Person Contacted: _____ Phone Number: _____
Initiated By: _____ Date: _____
Problem: _____
Resolution: _____
- Person Contacted: _____
Initiated By: _____
Problem: _____
Resolution: _____

(Please use the back of this sheet for additional com contacts)

(4018505)
Livingston Dairy Consulting, Inc.
VI 2344172

mdc 07/07/2023 12:57:34



VI_2344172

2023 KINGS RIVER WATERSHED CANAL RESULTS

LEMOORE WEIR

Sample Month and Results																
Constituent	Lab	BPO	RL	Units	January	February	March	April	May	June	July	August	September	October	November	December
Physical Parameters/General Chemistry																
Flow	KRWA			cfs	0	0	0	0	0	45	0	0	0	0	0	0
EC	Field ✓	700		umhos/cm						51.3	✓					
pH	Field	6.5-8.3		pH						7.5						
Dissolved Oxygen	Field	5/7		mg/L						9.44						
Temperature	Field	Δ < 5° C		°C						17.7						
Turbidity	BSK ✓	No adv eff.	0.2	NTU						2.2	✓					
TDS	BSK	450	10	mg/L						2.2						
TSS	BSK	-	10	mg/L						ND						
Hardness (as CaCO3)	BSK	-	2.5	mg/L						14						
TOC	BSK	-	0.3	mg/L						1.8						
Pathogens																
E. Coll	BSK	320		MPN						46						
Fecal Coliform	BSK	400		MPN/100mL						46						
Nutrients																
Nitrate (+ Nitrite) - N	BSK ✓	10	0.05	mg/L						0.02	✓					
Total Kjeldahl Nitrogen	BSK		0.5	mg/L						0.17						
Ammonia - N	BSK	chart	0.1	mg/L						ND						
Un-ionized Ammonia	BSK	chart	0.0015	mg/L						ND						
Orthophosphate - P	BSK	-	0.01	mg/L						0.0069						
Phosphorus	BSK		0.1	mg/L						0.014						
Water Column Toxicity																
Toxicity, minnow	PER	> 80%	(96h test)	% survival						100						
Toxicity, water flea	PER	> 80%	(48h test)	% survival						100						
Toxicity, algae	PER		(48h test)	cells/mL						4800000						
Toxicity, algae (control)	PER		(48h test)	cells/mL						2840000						

Livingston Dairy Consulting, Inc.

1635 E. Prosperity Ave. Ste. B

Tulare, CA 93274

559-687-1440

Sunday, April 14, 2024

Re: 2023 NMP

Vitor Borba #1 Dairy WDID 5C16NC00042

7721 Flint Avenue Hanford, CA 93230

Enclosed is the 2023/2024 Nutrient Budget for your facility to comply with the California Regional Water Quality Control Board General Order No. R5-2007-0035.

*2023 Whole Farm Nitrogen Balance

The whole farm nitrogen balance for the crop year 2022 was **1.15**
Nitrogen Summary will show the balances for each field and for the whole farm.

*Ranges for the Whole Farm Nitrogen Balance

<u>Factor</u>	<u>Status</u>	<u>Evaluation</u>
> 1.65	Excessive	Too much nitrogen applied
1.4 - 1.65	Slightly High	Nitrogen is satisfactory to slightly high
0.9 - 1.4	Normal	Normal to slightly low
< 0.9	Low	Low nitrogen status, additional nitrogen needed

*Nutrient Management Plan/ Nutrient Budget Certification

This Nutrient Budget was prepared by a Certified Crop Advisor as required by the California Regional Water Quality Control Board.



Butch Brazil

Certified Crop Advisor #35629

This Nutrient Management Plan / Nutrient Budget is based on samples collected and analyzed by a third party laboratory. This Certified Crop Advisor was not involved in oversight of outside laboratory sample collection, transportation, or analyses. Interpretation of the data is based on submitted information. Where data was incomplete, book values and / or historical data was used. The third party laboratory or Certified Crop Advisor was not involved with the agronomic growth of the crops and the Nutrient Budget is based on information provided by the owner.

