APPENDIX J

Nutrient Management Report and Waste Management Report

NUTRIENT MANAGEMENT PLAN-PROPOSED

MAY 2021

PREPARED FOR:

SILVA DAIRY FARMS

1499 N EDMINSTER RD

STEVINSON CA 95374

Notes:

Developed to reflect proposed conditions

PREPARED BY:

CAS
CARDOSO AG SERVICES

MARIANN PEDROSO
PO BOX 906
NEWMAN CA 95360

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Silva Dairy Farms

Physical address of dairy:

1499 N Edminster RD	Stevinson	Merced	95374
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Date facility was originally placed in operation: 01/01/1915

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0055-0210-0049-0000

B. OPERATOR NAME: Silva, Manuel Telephone no.: Landline (209) 652-6582 Cellular

1499 Edminster Rd	Stevinson	CA	95374
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Silva, Manuel Telephone no.: Landline (209) 652-6582 Cellular

1499 Edminster Rd	Stevinson	CA	95374
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Pedroso, Mariann Telephone no.: Landline (209) 862-4291 Cellular (209) 277-2817

Title: Technical Service Provider

P.O. Box 906	Newman	CA	95360
Mailing Address Number and Street	City	State	Zip Code

AVAILABLE NUTRIENTS

A. HERD INFORMATION

The milk cow dairy is currently regulated under individual Waste Discharge Requirements.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

4,500 *milk and dry cows combined (regulatory review is required for any expansion)*

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Present count	4,000	500	1,000	1,000	400	400
Maximum count	4,000	500	1,000	1,000	400	400
Avg live weight (lbs)	1,000	1,050	725	665		
Daily hours on flush	22	18	6	6	0	0

Predominant milk cow breed: Jersey

Average milk production: 56 *pounds per cow per day*

B. IRRIGATION SOURCES

Irrigation Source Name	Type	Nitrogen (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Discharge Rate
Irrigation Well	Groundwater (well)	4.10			1,400 *gpm*
Merquin Canal 2013	Surface water (canal, river)	1.50	0.00	0.00	10 *cfs*
River Pump -2012	Surface water (canal, river)	0.62	0.00	0.00	4,000 *gpm*

C. NUTRIENT IMPORTS

No nutrient imports entered.

D. NUTRIENT EXPORTS

Nutrient Type/Name	Quantity	Moisture	Nitrogen	Phosphorus (as P2O5)	Potassium (as K2O)
Separator solids	9,000.00 *ton*	69.7%	2.480%	1.400%	1.010%
Separated solids	9,000.00 *ton*	69.7%	2.480%	1.400%	1.010%
Separator solids	9,000.00 *ton*	69.7%	2.480%	1.400%	1.010%
Corral solids	9,900.00 *ton*	24.3%	2.160%	1.550%	3.280%
Separated solids	9,500.00 *ton*	69.7%	2.480%	1.400%	1.010%
Separated solids	2,800.00 *ton*	69.7%	2.480%	1.400%	1.010%

Total nitrogen exported: 914,385.60 *lbs*

Total phosphorus exported: 247,230.35 *lbs*

Total potassium exported: 607,697.50 *lbs*

E. STORAGE PERIOD

Storage period is the maximum period of time anticipated between land application of process wastewater (from storage ponds/lagoons) to croplands. A qualified agronomist and civil engineer should collaborate and collectively consider predominant soil types, soil infiltration rates, maximum depth, available water, field capacity, permanent wilting point, allowable depletion, crop water use, evapotranspiration, precipitation, irrigation system capacity, water delivery constraints, crop nutrient requirements, soil nutrient adsorbtion/desorption, rooting depth, nutrient accumulation/availability for current and future crop needs, facility wide process wastewater storage capacity and other factors as deemed necessary across all croplands where process wastewater is applied in selecting a storage period. In many cases conflicts will arise between crop water demands, crop nutrient demands and insufficient process wastewater storage capacity. Process wastewater may not be the best choice as a source of either water and/or nutrients to meet crop demands throughout the year. Groundwater and surface water vulnerability has been considered.

The storage period selected in this Nutrient Management Plan is consistent with the storage period selected in the Waste Management Plan.

Storage period: 120 *days*

APPLICATION AREA

A. ASSESSOR PARCEL NUMBER: 0055-0020-0005-0000

Legal owner of parcel: Homen, Joe S | Telephone no.: Landline | (209) 564-6828 Cellular

P.O. Box 382 (Mailing Address Number and Street) | Snelling (City) | CA (State) | 95369 (Zip Code)

ASSESSOR PARCEL NUMBER: 0055-0020-0060-0000

Legal owner of parcel: Homen, Joe S | Telephone no.: Landline | (209) 564-6828 Cellular

P.O. Box 382 (Mailing Address Number and Street) | Snelling (City) | CA (State) | 95369 (Zip Code)

ASSESSOR PARCEL NUMBER: 0055-0021-0019-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0020-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0021-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0026-0000

Legal owner of parcel: Santos, Dave | Telephone no.: Landline | (209) 535-6059 Cellular

P.O. Box 160 (Mailing Address Number and Street) | Stevinson (City) | CA (State) | 95374 (Zip Code)

ASSESSOR PARCEL NUMBER: 0055-0210-0029-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0030-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0032-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0033-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0047-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0049-0000

ASSESSOR PARCEL NUMBER (CONTINUED): 0055-0210-0049-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0210-0051-0000

Legal owner of parcel:		Telephone no.:	Landline	Cellular
Campbell, Irv				(209) 111-1111
1440 Wainwright Ave	Stevinson		CA	95374
Mailing Address Number and Street	City		State	Zip Code

ASSESSOR PARCEL NUMBER: 0055-0290-0010-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0310-0003-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0310-0004-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0310-0006-0000

Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0055-0310-0016-0000

Legal owner of parcel:		Telephone no.:	Landline	Cellular
Santos, Dave				(209) 535-6059
P.O. Box 160	Stevinson		CA	95374
Mailing Address Number and Street	City		State	Zip Code

ASSESSOR PARCEL NUMBER: 0055-0310-0017-0000

Legal owner of parcel:		Telephone no.:	Landline	Cellular
Santos, Dave				(209) 535-6059
P.O. Box 160	Stevinson		CA	95374
Mailing Address Number and Street	City		State	Zip Code

ASSESSOR PARCEL NUMBER: 0055-0310-0018-0000

Legal owner of parcel:		Telephone no.:	Landline	Cellular
Santos, Dave				(209) 535-6059
P.O. Box 160	Stevinson		CA	95374
Mailing Address Number and Street	City		State	Zip Code

ASSESSOR PARCEL NUMBER: 0055-0310-0025-0000

Legal owner of parcel:		Telephone no.:	Landline	Cellular
Santos, Dave				(209) 535-6059
P.O. Box 160	stevinson		CA	95374
Mailing Address Number and Street	City		State	Zip Code

B. FIELD NAME: 3rd Street

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Early November	Late April	38
Corn, silage	Late May	Late September	38

FIELD NAME: Behind Heifers

Cropable acres: 6

Predominant soil type: Fine sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to retention pond

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	6
Corn, silage	Late May	Middle September	6

FIELD NAME: Big Field

Cropable acres: 34

Predominant soil type: Loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to retention pond

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	34
Corn, silage	Late May	Late September	34

FIELD NAME: Field on the Right

Cropable acres: 36

Predominant soil type: Loamy sand

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to retention pond

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	36
Corn, silage	Late May	Middle September	34

FIELD NAME: HR-1/HR-2/HR-3

Cropable acres: 81

Predominant soil type: Loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	81
Corn, silage	Late May	Late September	81

FIELD NAME: HR-4

Cropable acres: 29

Predominant soil type: Loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	29
Corn, silage	Late May	Late September	29

FIELD NAME: JN-1

Cropable acres: 38

Predominant soil type: Loamy sand

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	38
Corn, silage	Late May	Late September	38

FIELD NAME: JN-3

Cropable acres: 19

Predominant soil type: Loamy sand

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	19
Corn, silage	Late May	Late September	19

FIELD NAME: JN-5

Cropable acres: 21

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	21
Corn, silage	Late May	Late September	21

FIELD NAME: Palma/Hinds

Cropable acres: 37

Predominant soil type: Loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to retention pond

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Oats, silage-soft dough	Late October	Late April	37
Corn, silage	Late May	Late September	37

FIELD NAME: Pasture

Cropable acres: 18

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Bermed

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Pasture	Middle November	Middle September	18

C. LAND APPLICATION AREA FIELDS AND PARCELS

Field name	Cropable acres	Total harvests	Parcel number
3rd Street	38	2	0055-0020-00050000 0055-0020-00600000
Behind Heifers	6	2	0055-0210-00490000
Big Field	34	2	0055-0210-00320000 0055-0210-00330000 0055-0210-00470000
Field on the Right	36	2	0055-0210-00200000 0055-0210-00210000
HR-1/HR-2/HR-3	81	2	0055-0210-00260000 0055-0310-00180000 0055-0310-00250000
HR-4	29	2	0055-0210-00260000 0055-0310-00160000 0055-0310-00170000
JN-1	38	2	0055-0021-00190000 0055-0310-00030000 0055-0310-00040000
JN-3	19	2	0055-0310-00060000
JN-5	21	2	0055-0210-00510000
Palma/Hinds	37	2	0055-0210-00290000 0055-0210-00300000
Pasture	18	1	0055-0290-00100000
Land application area totals	832	43	

NUTRIENT BUDGET

A. NUTRIENT BUDGET FOR CROP: 3rd Street / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	130.0	36.0	250.0	130.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	3	0.0	0.0	0.0	2.7
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	0.9	0.0	0.0	10.0
	0.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	2.7	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	130.0	36.0	250.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	139.7	36.0	250.0
Potential crop nutrient removal	101.4	26.0	179.4
Nutrient balance	38.3	10.0	70.6
Applied to removal ratio	1.38	1.38	1.39

Fresh water applied: 0.65 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 3rd Street / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	325.0	110.0	425.0	325.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	7	0.0	0.0	0.0	14.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	24.0
	2.1	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	14.9	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	325.0	110.0	425.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	346.9	110.0	425.0
Potential crop nutrient removal	248.0	80.0	306.0
Nutrient balance	98.9	30.0	119.0
Applied to removal ratio	1.40	1.38	1.39

Fresh water applied: 3.65 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Behind Heifers / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	3	120.0 50%	19.0 80%	158.0 80%	361.6

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.5	0.0	0.0	2.5
	0.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	1.6	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	360.0	57.0	474.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	368.6	57.0	474.0
Potential crop nutrient removal	264.6	41.4	340.2
Nutrient balance	104.0	15.6	133.8
Applied to removal ratio	1.39	1.38	1.39

Fresh water applied: 0.92 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Behind Heifers / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	2.5

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.8	0.0	0.0	4.0
	0.8	0.0	0.0	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	108.0 50%	19.0 80%	130.0 80%	435.3

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.8	0.0	0.0	4.0
	0.8	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	5.8	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	432.0	76.0	520.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	444.8	76.0	520.0
Potential crop nutrient removal	324.9	54.2	379.1
Nutrient balance	119.9	21.9	141.0
Applied to removal ratio	1.37	1.40	1.37

Fresh water applied: 3.44 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Big Field / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): Big Field / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	3	115.0 50%	19.0 80%	155.0 80%	346.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.6	0.0	0.0	16.0
	0.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	1.8	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	345.0	57.0	465.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	353.8	57.0	465.0
Potential crop nutrient removal	264.6	41.4	338.4
Nutrient balance	89.2	15.6	126.6
Applied to removal ratio	1.34	1.38	1.37

Fresh water applied: 1.04 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Big Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	2.6

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	24.0
	0.9	0.0	0.0	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	115.0 50%	23.0 80%	120.0 80%	463.5

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	24.0
	0.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	6.1	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	460.0	92.0	480.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	473.1	92.0	480.0
Potential crop nutrient removal	339.0	66.0	345.0
Nutrient balance	134.1	26.0	135.0
Applied to removal ratio	1.40	1.39	1.39

Fresh water applied: 3.64 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Field on the Right / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	3	115.0 50%	19.0 80%	155.0 80%	346.9

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.6	0.0	0.0	18.0
	0.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	1.9	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	345.0	57.0	465.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	353.9	57.0	465.0
Potential crop nutrient removal	264.6	41.4	340.2
Nutrient balance	89.3	15.6	124.8
Applied to removal ratio	1.34	1.38	1.37

Fresh water applied: 1.10 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Field on the Right / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	2.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	26.0
	0.9	0.0	0.0	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	90.0 50%	20.0 80%	124.0 80%	363.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	26.0
	0.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	6.6	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	360.0	80.0	496.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	373.6	80.0	496.0
Potential crop nutrient removal	270.0	59.4	356.4
Nutrient balance	103.6	20.6	139.6
Applied to removal ratio	1.38	1.35	1.39

Fresh water applied: 3.94 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: HR-1/HR-2/HR-3 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): HR-1/HR-2/HR-3 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer)	3	79.0	13.0	100.0	247.2
Nutrient source: Retention pond (lagoon)		50%	80%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Irrigation Well	3.4	0.0	0.0	96.0
	3.4	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	10.2	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	237.0	39.0	300.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	254.2	39.0	300.0
Potential crop nutrient removal	181.5	28.5	214.5
Nutrient balance	72.7	10.5	85.5
Applied to removal ratio	1.40	1.37	1.40

Fresh water applied: 0.92 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: HR-1/HR-2/HR-3 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	3	0.0	0.0	0.0	6.7
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.2	0.0	0.0	54.0
	2.2	0.0	0.0	

In season irrigation (with fertilizer)	4	88.0	18.0	80.0	361.0
Nutrient source: Retention pond (lagoon)		50%	80%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.2	0.0	0.0	54.0
	2.2	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	15.7	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	352.0	72.0	320.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	374.7	72.0	320.0
Potential crop nutrient removal	268.8	53.2	232.4
Nutrient balance	105.9	18.8	87.6
Applied to removal ratio	1.39	1.35	1.38

Fresh water applied: 3.86 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: HR-4 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure *Nutrient source:* From dairy *Application method:* Broadcast/incorporate	1	225.0 50%	40.0 80%	305.0 80%	225.0
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	2	0.0 0%	0.0 0%	0.0 0%	4.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	18.0
	2.1	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	4.2	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	225.0	40.0	305.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	236.2	40.0	305.0

Potential crop nutrient removal	169.5	28.5	220.5
Nutrient balance	66.7	11.5	84.5
Applied to removal ratio	1.39	1.40	1.38

Fresh water applied: 1.03 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: HR-4 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	263.0	65.0	345.0	263.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	7	0.0	0.0	0.0	16.3
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.3	0.0	0.0	20.0
	2.3	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	16.3	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	263.0	65.0	345.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	286.3	65.0	345.0
Potential crop nutrient removal	204.7	48.3	253.0
Nutrient balance	81.6	16.7	92.0
Applied to removal ratio	1.40	1.35	1.36

Fresh water applied: 3.99 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-1 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	147.0	28.0	265.0	147.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					

NUTRIENT BUDGET FOR CROP (CONTINUED): JN-1 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	2	65.0 50%	15.0 80%	90.0 80%	133.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	1.6	0.0	0.0	18.0
	1.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	3.2	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	147.0	28.0	265.0
Liquid manure	130.0	30.0	180.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	287.2	58.0	445.0
Potential crop nutrient removal	205.5	42.0	321.0
Nutrient balance	81.7	16.0	124.0
Applied to removal ratio	1.40	1.38	1.39

Fresh water applied: 0.78 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	6.4

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	24.0
	2.1	0.0	0.0	

In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	79.0 50%	17.0 80%	95.0 80%	324.5

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	24.0
	2.1	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	14.9	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	316.0	68.0	380.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	337.9	68.0	380.0
Potential crop nutrient removal	248.4	51.3	275.4
Nutrient balance	89.5	16.7	104.6
Applied to removal ratio	1.36	1.33	1.38

Fresh water applied: 3.65 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-3 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	188.0	43.0	299.0	188.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (with fertilizer)	1	90.0	15.0	150.0	94.3
Nutrient source: Retention pond (lagoon)		50%	80%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	4.3	0.0	0.0	24.0
	4.3	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	4.3	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	188.0	43.0	299.0
Liquid manure	90.0	15.0	150.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	289.3	58.0	449.0

Potential crop nutrient removal	207.0	42.0	321.0
Nutrient balance	82.3	16.0	128.0
Applied to removal ratio	1.40	1.38	1.40

Fresh water applied: 1.04 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-3 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	6.4

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	12.0
	2.1	0.0	0.0	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	67.0 50%	16.0 80%	88.0 80%	276.5

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.1	0.0	0.0	12.0
	2.1	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	14.9	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	268.0	64.0	352.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	289.9	64.0	352.0
Potential crop nutrient removal	207.0	48.3	253.0
Nutrient balance	82.9	15.7	99.0
Applied to removal ratio	1.40	1.33	1.39

Fresh water applied: 3.65 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-5 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): JN-5 / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	278.0	58.0	445.0	278.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	3	0.0	0.0	0.0	3.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	1.3	0.0	0.0	8.0
	1.3	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	3.9	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	278.0	58.0	445.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	288.9	58.0	445.0
Potential crop nutrient removal	207.0	42.0	321.0
Nutrient balance	81.9	16.0	124.0
Applied to removal ratio	1.40	1.38	1.39

Fresh water applied: 0.94 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: JN-5 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	275.0	55.0	300.0	275.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	7	0.0	0.0	0.0	15.7
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	2.2	0.0	0.0	14.0
	2.2	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	15.7	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	275.0	55.0	300.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	297.7	55.0	300.0
Potential crop nutrient removal	216.0	40.5	216.0
Nutrient balance	81.7	14.5	84.0
Applied to removal ratio	1.38	1.36	1.39

Fresh water applied: 3.86 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Palma/Hinds / Oats, silage-soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure *Nutrient source:* From dairy *Application method:* Broadcast/incorporate	1	160.0 50%	25.0 80%	210.0 80%	160.0
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	1	55.0 50%	15.0 80%	135.0 80%	56.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	1.8	0.0	0.0	54.0
	1.8	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	1.8	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	160.0	25.0	210.0
Liquid manure	55.0	15.0	135.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	223.8	40.0	345.0
Potential crop nutrient removal	160.2	28.8	248.4

Nutrient balance	63.6	11.2	96.6
Applied to removal ratio	1.40	1.39	1.39

Fresh water applied: 1.07 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Palma/Hinds / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	3	0.0 0%	0.0 0%	0.0 0%	2.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	28.0
	0.9	0.0	0.0	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	4	83.0 50%	15.0 80%	94.0 80%	335.8

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
River Pump -2012	0.9	0.0	0.0	28.0
	0.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	6.6	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	332.0	60.0	376.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	345.6	60.0	376.0
Potential crop nutrient removal	247.5	45.0	270.0
Nutrient balance	98.1	15.0	106.0
Applied to removal ratio	1.40	1.33	1.39

Fresh water applied: 3.90 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Pasture / Other

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): Pasture / Other

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Dry manure	1	55.0	2.0	2.0	55.0
Nutrient source: From dairy		50%	80%	80%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	8	0.0	0.0	0.0	12.0
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

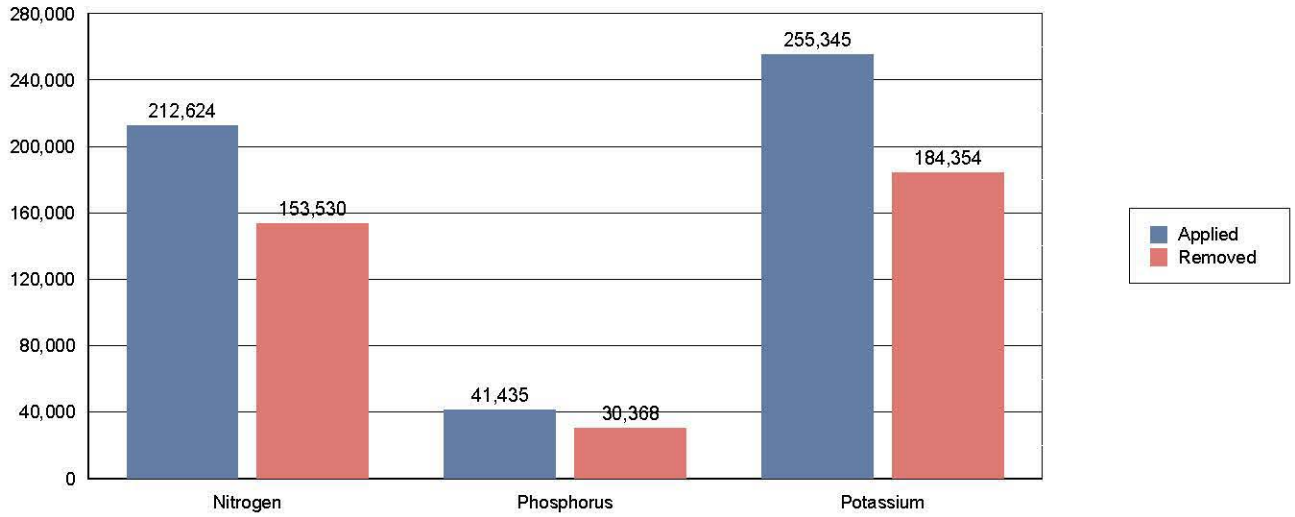
Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
Merquin Canal 2013	1.5	0.0	0.0	8.0
	1.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	12.0	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	55.0	2.0	2.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	81.0	2.0	2.0
Potential crop nutrient removal	60.0	2.0	2.0
Nutrient balance	21.0	0.0	0.0
Applied to removal ratio	1.35	1.00	1.00

Fresh water applied: 2.94 *feet* Total harvests: 1

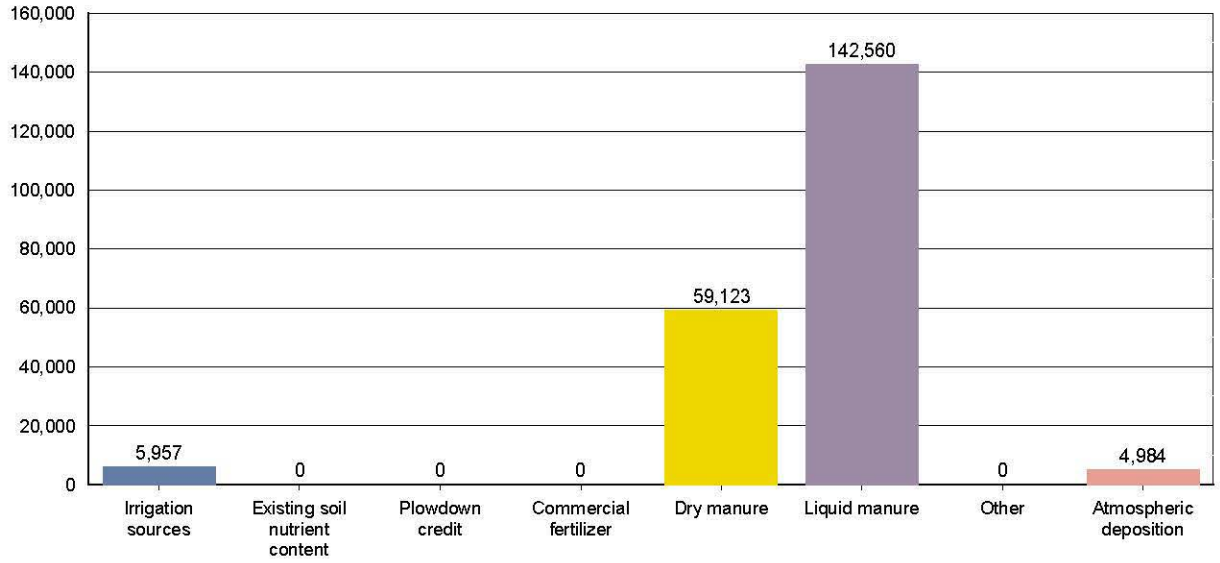
NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE

A. POUNDS OF NUTRIENT APPLIED VS. CROP REMOVAL POTENTIAL



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	5,957.2	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	59,123.0	13,808.0	83,702.0
Liquid manure	142,560.0	27,627.0	171,643.0
Other	0.0	0.0	0.0
Atmospheric deposition	4,984.0		
Nutrients applied to all crops	212,624.2	41,435.0	255,345.0
Potential crop nutrient removal	153,530.4	30,368.0	184,354.5
Nutrient balance	59,093.8	11,067.0	70,990.5
Applied to removal ratio	1.38	1.36	1.39

B. POUNDS OF NITROGEN APPLIED BY NUTRIENT SOURCE



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	5,957.2	0.0	0.0
Existing soil nutrient content	0.0	0.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	59,123.0	13,808.0	83,702.0
Liquid manure	142,560.0	27,627.0	171,643.0
Other	0.0	0.0	0.0
Atmospheric deposition	4,984.0		
Nutrients applied to all crops	212,624.2	41,435.0	255,345.0
Potential crop nutrient removal	153,530.4	30,368.0	184,354.5
Nutrient balance	59,093.8	11,067.0	70,990.5
Applied to removal ratio	1.38	1.36	1.39

NUTRIENT BALANCE

A. WHOLE FARM BALANCE

	Total N (lbs)	Total P (lbs)	Total K (lbs)
Nutrients in storage from herd*			
Daily gross	4,322.0	707.9	1,997.9
Annual gross	1,577,520.6	258,367.0	729,244.9
Net to pond storage after ammonia losses (30% loss applied)	886,791.9	210,765.7	668,474.5
Net to drylot storage after ammonia losses (30% loss applied)	217,472.5	47,601.3	141,070.4
Net in storage (30% loss applied)	1,104,264.4	258,367.0	809,544.9
Irrigation sources	5,957.2	0.0	0.0
Atmospheric deposition	4,984.0		
Imports	0.0	0.0	0.0
Exports	914,385.6	247,230.3	607,697.5
Potential crop nutrient removal	153,530.4	30,368.0	184,354.5
Nutrient balance	47,289.6	-19,231.3	17,492.9
Nutrient balance ratio	1.31	0.37	1.09

* Potassium excretion from milk cows and dry cows only.

SAMPLING AND ANALYSIS PLAN

A. MANURE SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each offsite export of manure	For each manure source exported, a composite sample "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each manure source exported, a scaled weight by truckload will be recorded.	Corral solids Settling basin solids	Date exported and total weight (tons) exported	Percent moisture. Total nitrogen, phosphorus and potassium during one export.
Annually	Annual estimation for total manure dry weight exported will be quantified using the following: Dry weight exported from a source per event = weight exported * (1 - (percent moisture / 100)) Dry weight exported per event = sum of dry weights exported from each source Dry weight exported to any offsite destination = sum of dry weights exported per event	Corral solids Settling basin solids	Total dry weight (tons) manure applied annually to each land application area, and total dry weight (tons) manure exported offsite annually	None required
Twice per year	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	None required	Total nitrogen, total phosphorus, total potassium, and percent moisture

A. MANURE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Once every two years (biennially)	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	None required	General minerals, including: calcium, magnesium, sodium, sulfate, chloride Fixed solids (ash)
Each application to each land application area	For each applied manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each applied manure source, a scaled weight by truckload will be recorded.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	Date applied and total weight (tons) applied	Percent moisture

B. PROCESS WASTEWATER SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Anually	A composite or grab sample prior to blending with irrigation water per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	None required	pH, total dissolved solids, electrical conductivity, nitrate-nitrogen, ammonion-nitrogen, total Kjeldahl nitrogen, total phosphorus, and total potassium

B. PROCESS WASTEWATER SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Once every two years (biennially)	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride
Each application	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	Date applied and volume (gallons or acre-inches) applied	None required
Quarterly during one application event	For field measurement: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For laboratory analyses: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	Date applied and electrical conductivity	Nitrate-nitrogen (only when pond is aerated), un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids

C. SOIL SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Once in summer of 2008 and then once every five years for each land application area	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	See LAA Table	None required	0 to 1 foot: Total phosphorus
Once every five years for each land application area (may be distributed over a 5-year period by sampling 20% of the land application areas annually)	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual fields and field size, e.g.: Field 1 - 200 acres Field 2 - 200 acres Field 3 - 200 acres Field 4 - 200 acres Field 5 - 200 acres	None required	Soluble phosphorus

D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each crop harvest from each land application area	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each field and crop, a scaled weight by truckload will be recorded.	See LAA Table	Date harvested and total weight (tons) of harvested material removed from each land application area	Percent wet weight of harvested plant removed Total nitrogen, phosphorus, and potassium, expressed on a dry weight basis

E. IRRIGATION WATER SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes

E. IRRIGATION WATER SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each fresh water irrigation event for each land application area	List individual irrigation sources and the measurement method, e.g.: Irrigation Well 1 - inline totalizing flow meter Irrigation Well 2 - flow rate multiplied by runtime Canal 1 - flow rate multiplied by runtime	List individual irrigation sources, e.g.: Canal River Irrigation Well-Big Field Irrigation Well - HR 1/2/3	Date applied and volume (gallons or acre-inches) applied	None required
One irrigation event during each irrigation season during actual irrigation events – for each irrigation water source (well and canal)	For each irrigation source, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. In lieu of sampling the irrigation water, the Discharger may provide equivalent data from the local irrigation district.	List individual irrigation sources, e.g.: Canal River Irrigation Well - Big Field Irrigation Well - HR 1/2/3	None required	Electrical conductivity, total dissolved solids, and total nitrogen

F. GROUNDWATER MONITORING SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Every five years (may be distributed over a 5-year period by sampling 20% of the wells annually)	For each domestic and agricultural supply well, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual wells, e.g.: Irrigation Well - Big Field Irrigation Well - HR 1/2/3 DW Dairy DW Heifers DW #1 DW #2 DW #3	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, chloride Total dissolved solids

F. GROUNDWATER MONITORING SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Annually	For each domestic and agricultural supply well, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual wells, e.g.: Irrigation Well - Big Field Irrigation Well - HR 1/2/3 DW Dairy DW Heifers DW #1 DW #2 DW #3	Electrical conductivity and ammonion-nitrogen	Nitrate-nitrogen. If field measurement indicates the presence of ammonium-nitrogen, the Discharger shall collect a sample for laboratory analysis of ammonium-nitrogen.

NUTRIENT MANAGEMENT PLAN REVIEW

A. NUTRIENT MANAGEMENT PLAN REVIEW

Person who created the NMP: Pedroso, Mariann *See above for contact information.*
Date the NMP was drafted: 06/01/2020
Person who approved the final NMP: Pedroso, Mariann *See above for contact information.*
Date of NMP implementation: 10/01/2020

ATTACHED MAP AND DOCUMENTATION REFERENCES

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Nutrient Management Plan for the reporting schedule of 'July 1, 2009'.

A. PRELIMINARY DAIRY FACILITY ASSESSMENT

The NMP will include the initial Preliminary Dairy Facility Assessment (Attachment A) and the annual updates as required by Monitoring and Reporting Program No. R5-2007-0035. Copies of these assessments shall be maintained for 10 years.

B. LAND AREA MAP(S)

Identify each land application area (under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) on a single published base map

1. A field identification system (Assessor's Parcel Number; land application area; crops grown); indication if each land application is owned, rented, or leased by the Discharger; indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

2. Process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities; flow meter locations; drainage ditches and canals, culverts, draining controls (berms, levees, etc.), and drainage easements.

Application area map reference number: Land App Map

Identify each field under control of the Discharger and within five miles of the dairy where neither process wastewater nor manure is applied. Each field shall be identified on a single published base map at an appropriate scale by the following:

1. Assessor's Parcel Number.
2. Total acreage.
3. Information on who owns or leases the field

Non-application area map reference number: N/A

Setbacks, Buffers, and Other Alternatives to Protect Surface Water (see Technical Standard VII):

1. Identify all potential surface waters or conduits to surface water that are within 100 feet of any land application area.
2. For each land application area that is within 100 feet of a surface water or a conduit to surface water, identify the setback, vegetated buffer, or other alternative practice that will be implemented to protect surface water (Technical Standard VII).

Setbacks and buffers map reference number: Land App Map

C. PROCESS WASTEWATER WRITTEN AGREEMENTS

Provide copies of written agreements with third parties that receive process wastewater for their own use from the Discharger's dairy (Technical Standards V.A.1 and V.A.3).

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

SAMPLING AND ANALYSIS PLAN CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Silva Dairy Farms

Physical address of dairy:

1499 N Edminster RD	Stevinson	Merced	95374
Physical Address Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I certify that I meet the requirements as a certified specialist in developing nutrient management plans as described in Attachment C of Waste Discharge Requirements General Order No. R5-2007-0035 and that I prepared the Sampling and Analysis plan.

Technical Service Provider
TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 5-14-21

Mariann Pedroso
PRINT OR TYPE NAME

P.O. Box 906; Newman, CA 95360
MAILING ADDRESS

(209) 862-4291
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

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.

SIGNATURE OF OWNER OF FACILITY	SIGNATURE OF OPERATOR OF FACILITY
Manuel Silva	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
5-18-21	
DATE	DATE

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

NUTRIENT BUDGET CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Silva Dairy Farms

Physical address of dairy:

1499 N Edminster RD	Stevinson	Merced	95374
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I certify that I meet the requirements as a certified specialist in developing nutrient management plans as described in Attachment C of Waste Discharge Requirements General Order No. R5-2007-0035 and that I prepared the Nutrient Budget plan.

Technical Service Provider
TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 5-14-21

Mariann Pedroso
PRINT OR TYPE NAME

P.O. Box 906; Newman, CA 95360
MAILING ADDRESS

(209) 862-4291
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

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.

SIGNATURE OF OWNER OF FACILITY

SIGNATURE OF OPERATOR OF FACILITY

Manuel Silva
PRINT OR TYPE NAME

PRINT OR TYPE NAME

5-18-21
DATE

DATE

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

STATEMENTS OF COMPLETION

Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies (General Order) requires owners and operators of existing milk cow dairies (Dischargers) to develop and implement a Nutrient Management Plan for their land application areas (land under control of the Discharger, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient cycling). The Discharger is required to maintain the NMP at the dairy, make the NMP available to Central Valley Water Board staff during their inspections, and submit the NMP to the Executive Officer upon request.

The General Order requires the Discharger to submit two Statements of Completion during development of the NMP. The Discharger may use this form to comply with the General Order requirement to submit one or both of these Statements of Completion. Parts A and E must be completed for each Statement of Completion. Parts B, C and D are to be completed for the Statements of Completion due by 1 July 2008, 31 December 2008 and 1 July 2009, respectively. Both the owner and the operator of the dairy must sign this form in Part E below.

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Silva Dairy Farms

1499 N Edminster RD	Stevinson	Merced	95374
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Operator name: _____ Telephone no.: _____ (Landline) _____ (Cellular)

_____	_____	_____	_____
Mailing Address Number and Street	City	State	Zip Code

Legal owner name: Silva, Manuel Telephone no.: _____ (Landline) (209) 652-6582 (Cellular)

1499 Edminster Rd	Stevinson	CA	95374
Mailing Address Number and Street	City	State	Zip Code

B. STATEMENT OF COMPLETION DUE 1 JULY 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2008:

☐ **Item I.A.1 Land Application Information**
Identification of land used for manure application and needed information on a facility map.

☐ **Item I.B Land Application Information**
Information list for information provided on map above.

☐ **Item I.C Land Application Information**
Copies of written third-party process wastewater agreements.

☐ **Item I.D Land Application Information**
Identification of fields under control of the discharger within five miles of the dairy where neither process wastewater nor manure is applied.

☐ **Item II Sampling and Analysis Plan**

☐ **Item IV Setbacks, Buffers, and Other Alternatives to Protect Surface Water**
Identification of all potential surface waters or conduits to surface waters within 100 feet of land application areas and appropriate protection.

☐ **Item VI Record-Keeping Requirements**
Identification of monitoring records that will be maintained as required in the production and land application areas.

Has Item II (Sampling and Analysis Plan) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☐ Yes ☐ No

C. STATEMENT OF COMPLETION DUE 31 DECEMBER 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 31 December 2008:

☐ **Item V Field Risk Assessment**
Evaluation of the effectiveness of management practices used to control the discharge of waste constituents from land application areas by assessing the water quality monitoring results of discharges of manure, process wastewater, tailwater, subsurface (tile) drainage, or storm water from the land application areas.

D. STATEMENT OF COMPLETION DUE 1 JULY 2009

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2009:

☐ **Item I.A.2 Land Application Area Information**
Identification of process wastewater conveyance, mixing and drainage information for each land application area on a facility map.

☐ **Item III Nutrient Budget**
Established planned rates of nutrient applications by crop based on nutrient monitoring results for each land application area.

Has Item III (Nutrient Budget) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☐ Yes ☐ No

E. CERTIFICATION STATEMENT

I certify under penalty of law that I have completed the items of the Nutrient Management Plan that are checked in Parts B, C and/or D above for the dairy identified in Part A above and that the appropriate certified nutrient management specialist has certified the items requiring such certification as noted in part B and/or D above and that I have personally examined and am familiar with the information submitted in Parts A, B, C and D 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.

SIGNATURE OF OWNER OF FACILITY	SIGNATURE OF OPERATOR OF FACILITY
Manuel Silva	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
5/18/2021	
DATE	DATE

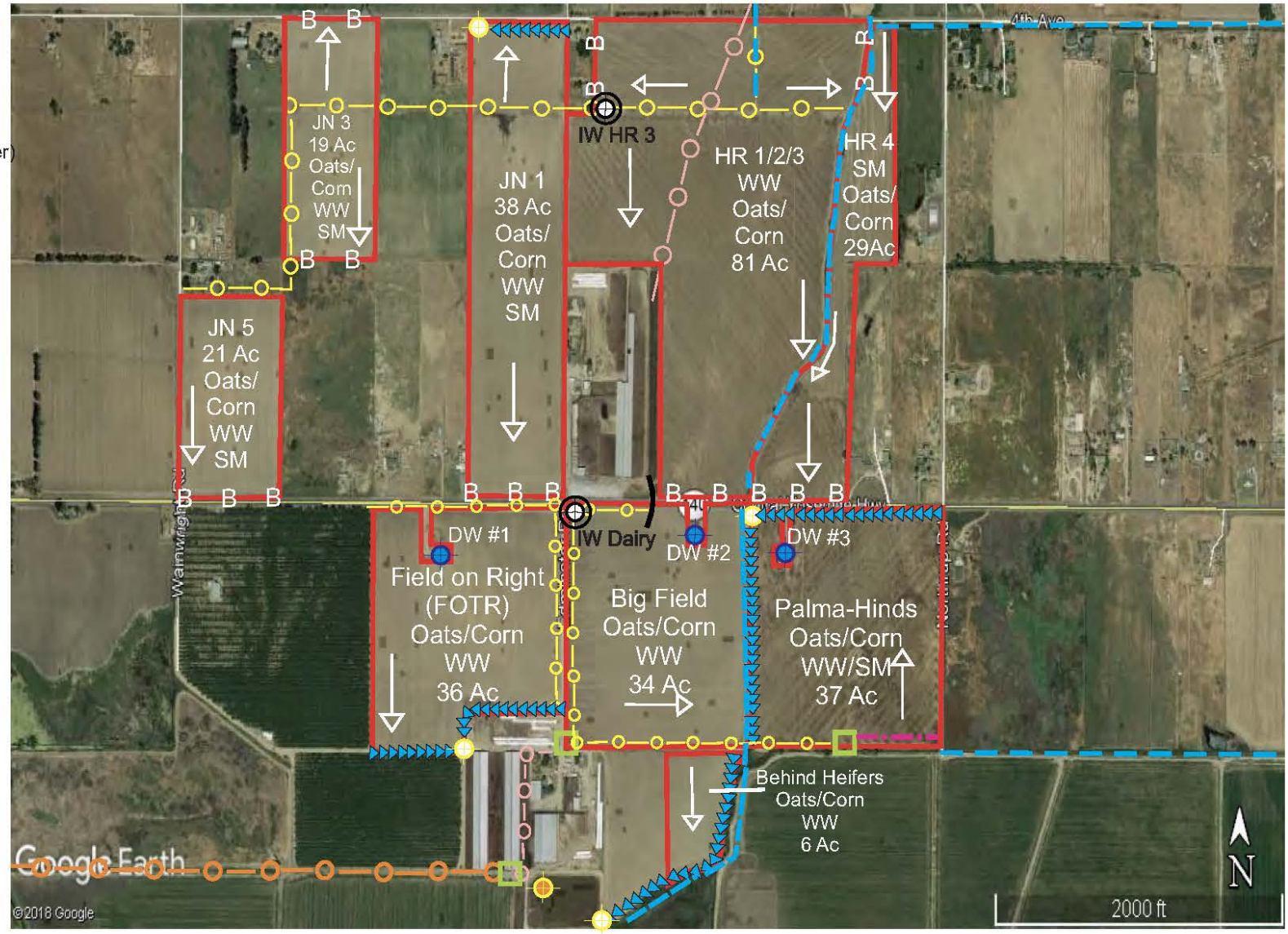
LAND APPLICATION AREA FIELD INFORMATION ATTACHMENT

DAIRY NAME: Silva Dairy Farms
DAIRY ADDRESS: 1499 N Edminster Rd. Stevinson CA 95374

APN	FIELD ID	ACRES	CROPS GROWN	OWNED BY DAIRY OWNER	LEASED BY DAIRY OPERATOR	NUTRIENTS APPLIED
0055-0210-0020-0000	FIELD ON RIGHT	36	OATS/CORN	XX		WW/SM
0055-0210-0021-0000						
0055-0210-0032-0000	BIG FIELD	34	OATS/CORN	XX		WW/SM
0055-0210-0033-0000						
0055-0210-0047-0000						
0055-0210-0030-0000	PALMA/HINDS	37	OATS/CORN	XX	XX	WW/SM
0055-0210-0029-0000						
0055-0210-0049-0000	BEHIND HEIFERS	6	OATS/CORN	XX		WW/SM
0055-0210-0019-0000	JN-1	38	OATS/CORN	XX		WW/SM
0055-0310-0003-0000						
0055-0310-0004-0000						
0055-0310-0006-0000	JN-3	19	OATS/CORN	XX		WW/SM
0055-0210-0051-0000	JN-5	21	OATS/CORN		XX	WW/SM
0055-0310-0025-0000	HR-1/HR-2/HR-3	81	OATS/CORN		XX	WW/SM
0055-0310-0018-0000					XX	WW/SM
0055-0210-0026-0000						
0055-0210-0026-0000	HR-4	29	OATS/CORN		XX	SM
0055-0310-0017-0000						
0055-0310-0016-0000						
0055-0290-0010-0000	PASTURE	18	PASTURE	XX		SM
0055-0020-0005-0000	3RD STREET	38	OATS/CORN		XX	SM
0055-0020-0060-0000						
		357				

Legend:

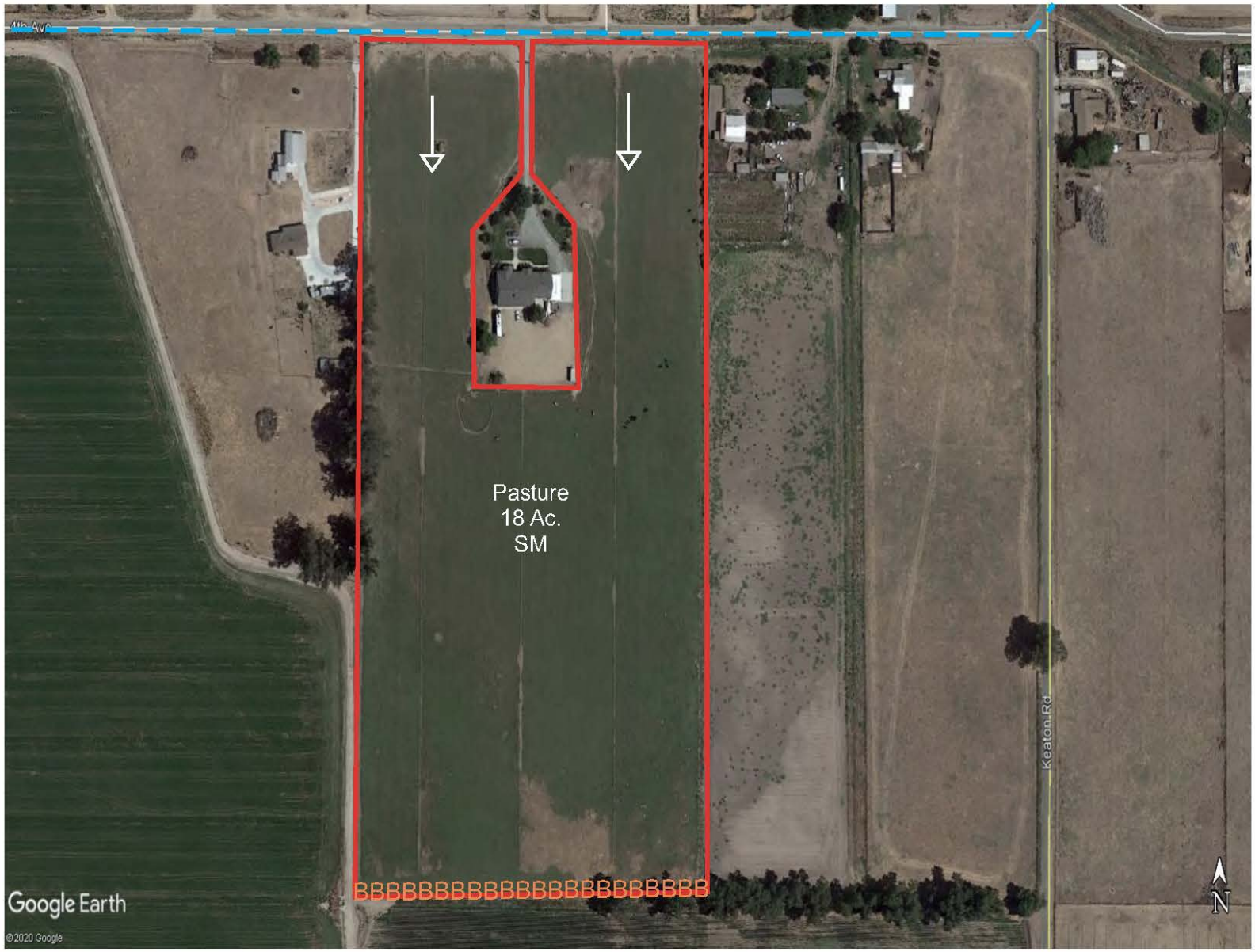
- Field Boundary
- Merquin Canal
- Irrigation Pipeline (Freshwater & Wasetwater)
- Dedicated Wastewater Pipeline
- Export Pipeline
- Irrigation Ditch
- Tailwater Flow
- Flow Direction
- Tailwater Pump
- Domestic Well
- Floating Pump
- Irrigation Well w/ Setback
- B Berm
- D Drain
- Mixing Box
- Culvert (Under Road Conveyance)



CARDOSO AG SERVICES	1574 Ft. Scale	Silva Dairy Farms Merced County, CA		**Land App. Area Proposed**
	Project No.	Date: 05/14/2021	Drawn By: MD	App By: MP

Legend:

- Field Boundary
- Flow Direction
- Merquin Canal
- B Berm



CARDOSO AG SERVICES

476 Ft.
Scale

Project No.

Silva Dairy Farms
Merced County, CA

Date:	Drawn By:	App By:
04/29/2019	MD	MP

Land App. Area

Legend:

- Field Boundary
- Flow Direction
- Freshwater Pipeline
- B Berm

CARDOSO AG SERVICES

531 Ft.
Scale

Project No.

Silva Dairy Farms
Merced County, CA

Date:	Drawn By:	App By:
05/14/2021	MD	MP

Land App. Area

Waste Management Plan
For
Silva Dairy Farms
Merced County, CA

Prepared For:
Silva Dairy Farms
1499 N. Edminster Road
Stevinson, CA 95374

SOUSA
ENGINEERING
INFRASTRUCTURE-DEVELOPMENT-
AGRICULTURE

SOUSA
ENGINEERING
INFRASTRUCTURE-DEVELOPMENT-
AGRICULTURE

PO BOX 1613
OAKDALE, CA 95361
PHONE: (209)238-3151
www.sousaeng.com

WASTE MANAGEMENT PLAN
FOR
SILVA DAIRY FARMS
MERCED COUNTY, CA

TABLE OF CONTENTS

1. NARRATIVE

INTRODUCTION

This Waste Management Plan (WMP) has been prepared at the request of the subject dairy's owner and/or operator to comply with Section H.1.b., *Waste Management Plan,* of Order No. R5-2013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies,* (Order) adopted by the California Regional Water Quality Control Board (CRWQCB) Central Valley Region. Per the requirements set forth by the aforementioned Order it is the intent of this plan to provide an evaluation of the existing milk cow facility's design, construction, operation, and maintenance for flood protection and waste containment and to determine whether the facility complies with Prohibition A.14, General Specifications B.1 through B.3, Pond Specifications C.1 through C.3, and Production Area Specifications D.1, D.4, and D.5. Should the evaluation provided by this plan determine that the existing facility does not comply with the requirements of the Order, then modifications will be proposed for the facility that will bring it into compliance and those modifications shall be made a part of this plan.

COMPLIANCE CRITERIA

As required by the Order this plan must evaluate the existing facility's compliance with Prohibition A.14, General Specifications B.1 through B.3, Pond Specifications C.1 through C.3, and Production Area Specifications D.1, D.4, and D.5. The criteria set forth by this Prohibition and General Specifications are as follows:

Prohibition A.14: *"The direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells is prohibited."*

The water, irrigation, and wastewater systems of this facility have been examined by a Registered Civil Engineer licensed in the State of California. It has been determined and hereby documented that there are no existing conditions on the project site that would allow for direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells. The existing wells that supply the irrigation system have been constructed with air gaps to prevent backflow of wastewater into the wells.

General Specification B.1: *"The existing milk cow dairy shall have facilities that are designed, constructed, operated, and maintained to retain all facility process wastewater generated during the storage period (maximum period of time anticipated between land application of process wastewater), together with all precipitation on and drainage through manured areas, up to and including during a 25-year, 24-hour storm (see item II of Attachment B, which is attached to and made part of this Order)."*

Section 3.a. of this plan contains calculations that demonstrate the facility's ability to retain all process wastewater and precipitation generated by the 25-year, 24-hour storm. The tributary areas for storm drain runoff were determined by utilizing field measurements and aerial photography. The existing Wastewater Basins (WW) were field measured.

General Specification B.2: **"***In the Sacramento and San Joaquin River Basins, ponds and manured areas at existing milk cow dairies in operation on or before 27 November 1984 shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. Existing milk cow dairies that were in operation on or before 27 November 1984 and that are protected against 100-year peak stream flows must continue to provide such protection. Existing milk cow dairies built or expanded after 27 November 1984 shall be protected against 100-year peak stream flows (Title 27 Section 22562(c))."*

The facility is in the San Joaquin River Basin and was constructed before 27 November 1984. However the facility has been expanded since 27 November 1984 and thus must have protection against the 100-year storm event. The relevant Flood Zone Map published by the Federal Emergency Management Agency (FEMA) is Panel No. 06047C350G. This map indicates that the existing dairy facility is in Zone A and is thus subject to inundation by the 100-year storm event. An analysis describing locations and levels of inundation and recommended protection measures is included in the Plan in Section 3.b.

General Specification B.3: **"***In the Tulare Lake Basin, existing milk cow dairies that existed as of 25 July 1975 shall be protected from inundation or washout from overflow from any stream channel during 20-year peak stream flows and existing milk cow dairies constructed after 25 July 1975 shall be protected from 100-year peak stream flows. Existing milk cow dairies expanded after 8 December 1984 shall be protected from 100-year peak stream flows."*

As the facility is in the San Joaquin River Basin this specification is not applicable.

Pond Specification C.1: *"The level of waste in the process wastewater retention ponds shall be kept a minimum of two (2) feet from the top of each aboveground embankment and a minimum of one (1) foot from the ground surface of each belowground pond. Less freeboard may be approved by the Executive Officer when a Civil Engineer who is registered pursuant to California law, or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work, demonstrates that the structural integrity of the pond will be maintained with the proposed freeboard.*

2' of freeboard has been assigned to all wastewater retention ponds as they all have been or will be constructed above grade.

Pond Specification C.2: *"Ponds shall be managed and maintained to prevent breeding of mosquitoes and other vectors. In particular,*

a. Small coves and irregularities shall not be allowed around the perimeter of the water surface;
b. Weeds shall be minimized through control of water depth, harvesting, or other appropriate method;
c. Dead algae, vegetation, and debris shall not accumulate on the water surface; and
d. Management shall be in accordance with the requirements of the Mosquito Abatement District."

An Operations and Maintenance Plan addressing these items has been included in Section 3.a. and is hereby made a part of this plan.

Pond Specification C.3: **"***Ponds designated to contain the 25-year, 24-hour storm event runoff must have a depth marker that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour storm event."*

A marker meeting this specification will be installed in all the facility's ponds by the compliance date.

Production Area Specification D.1: *"All dirt or unpaved corrals shall be graded to promote drainage. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. Water troughs,*

permanent feed racks, and mangers shall have paved access, and water troughs shall have a drain to carry water away from the corrals. (Cal Code Regs., title 3, § 646.1.)."

Dirt or unpaved areas are graded to promote drainage. Any areas requiring improvement are noted on Exhibit Sheets 3 and 4 and in Section 3.b.

All cow washing areas are paved with Portland Cement Concrete (PCC) and sloped to a drain which conveys wastewater to the retention ponds.

Water troughs, feed racks, and mangers have access paved with PCC. Water troughs have drains which convey wastewater to the retention ponds.

Production Area Specification D.4: *"All roofs, buildings, and non-manured areas located in the production area of the existing milk cow dairy shall be constructed or otherwise designed so that clean rainwater is diverted away from manured areas and waste containment facilities, unless such drainage is fully contained in the wastewater retention ponds. (Title 27, § 22562(b).)."*

The production area is designed such that rainwater that is not diverted away from manured areas and waste containment facilities is collected and conveyed to the wastewater retention ponds.

Production Area Specification D.5: *"Roof drainage from barns, milk houses, or shelters shall not drain into the corrals unless the corrals are properly graded and drained. (Cal Code Regs., title 3, § 661.)."*

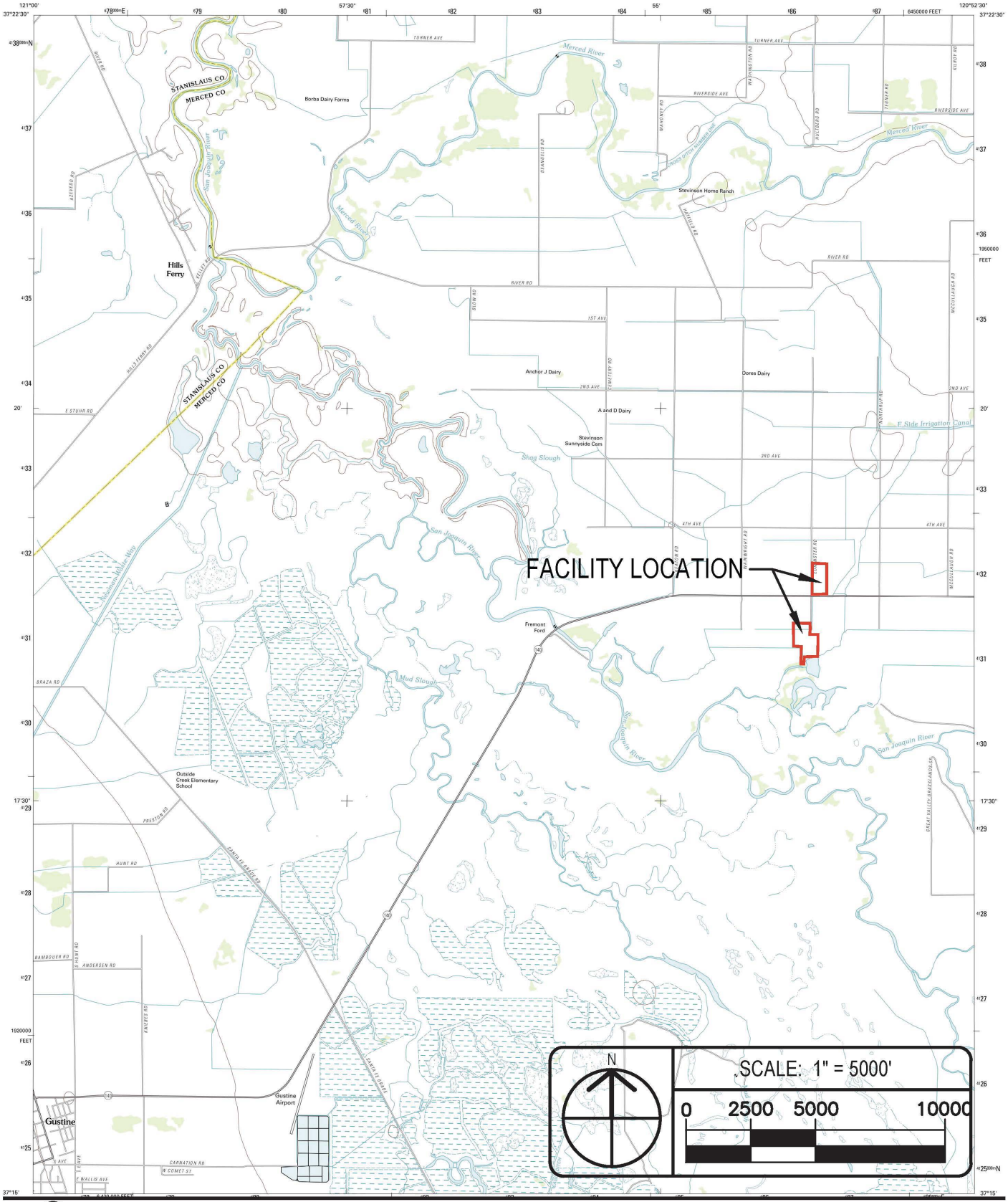
Roof drainage is collected by gutters, downspouts, and drains and is conveyed to the wastewater retention ponds, adjacent fields, or to irrigation pipelines.

RESULTS AND CONCLUSIONS

After conducting a visual inspection of the site, obtaining herd and facility information from the operator, performing the required measurements of facility improvements, and performing the calculations included in Section 3.a. it has been determined that the design, construction, operation, and waste containment of this facility are in compliance with Prohibition A.14 and General Specifications B.1 through B.3 and B.10 through B.16 of Order No. R5-2013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies*.

The only future improvements required to maintain compliance with the General Order are the construction of the proposed wastewater retention pond as shown on Exhibit Sheet 4 and in Section 3.b. of this Plan.

2. EXHIBITS



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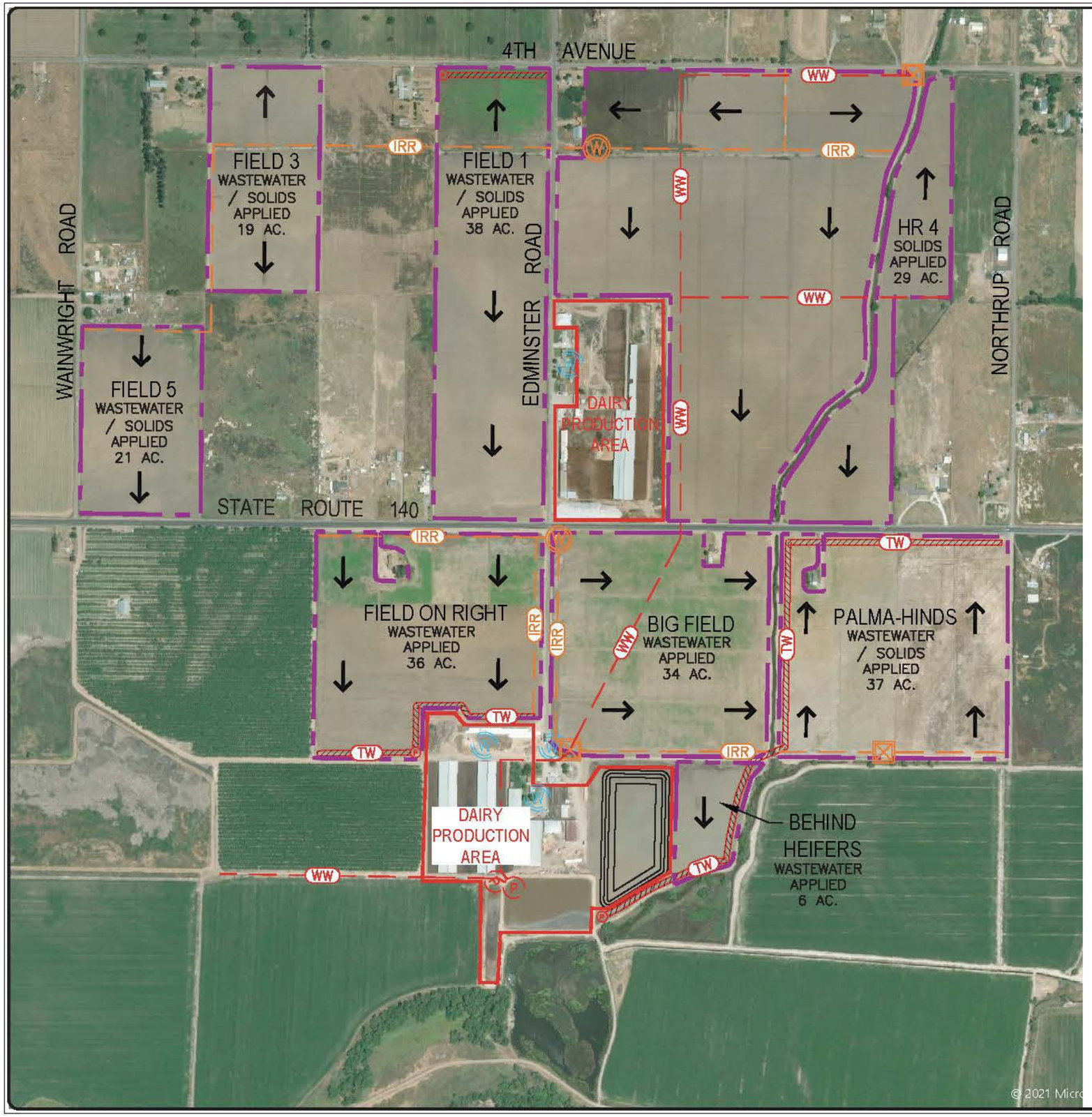
VICINITY MAP
SILVA DAIRY FARMS

MERCED COUNTY, CA



LEGEND

- LAND APPLICATION AREA
- IRRIGATION LINE
- IRRIGATION CONTROL BOX
- IRRIGATION WELL
- TAILWATER DITCH
- WASTEWATER LINE
- DOMESTIC WELL
- GENERAL SLOPE AND DIRECTION OF FLOW

DISCHARGE POINTS

	LAND APP. AREA	LATITUDE	LONGITUDE
	FIELD 1	N37° 18' 58.60"	W120° 53' 52.74"
	BEHIND HEIFERS	N37° 18' 32.06"	W120° 53' 36.76"
	HR 1/2/3	N37° 19' 03.22"	W120° 53' 35.09"
	FIELD 3	N37° 19' 07.83"	W120° 54' 07.97"
	HR 4	N37° 19' 01.83"	W120° 53' 24.25"
	FIELD 5	N37° 18' 54.39"	W120° 54' 17.06"
	FIELD ON RIGHT	N37° 18' 41.99"	W120° 53' 56.30"
	BIG FIELD	N37° 18' 41.60"	W120° 53' 39.96"
	PALMA-HINDS	N37° 18' 41.52"	W120° 53' 23.61"
	THIRD STREET	N37° 19' 47.31"	W120° 54' 45.16"
	PASTURE	N37° 19' 07.22"	W120° 55' 06.25"

N

SCALE: 1" = 600'

0 300 600 1200

SHEET 2 OF 8

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SITE MAP
LAND APPLICATION AREAS
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS
DATE: 5/9/2021
FILE: 02_site.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APP'D.

LEGEND

- LAND APPLICATION AREA
- IRRIGATION LINE (IRR)
- GENERAL SLOPE AND DIRECTION OF FLOW

N

SCALE: 1" = 600'

0 300 600 1200

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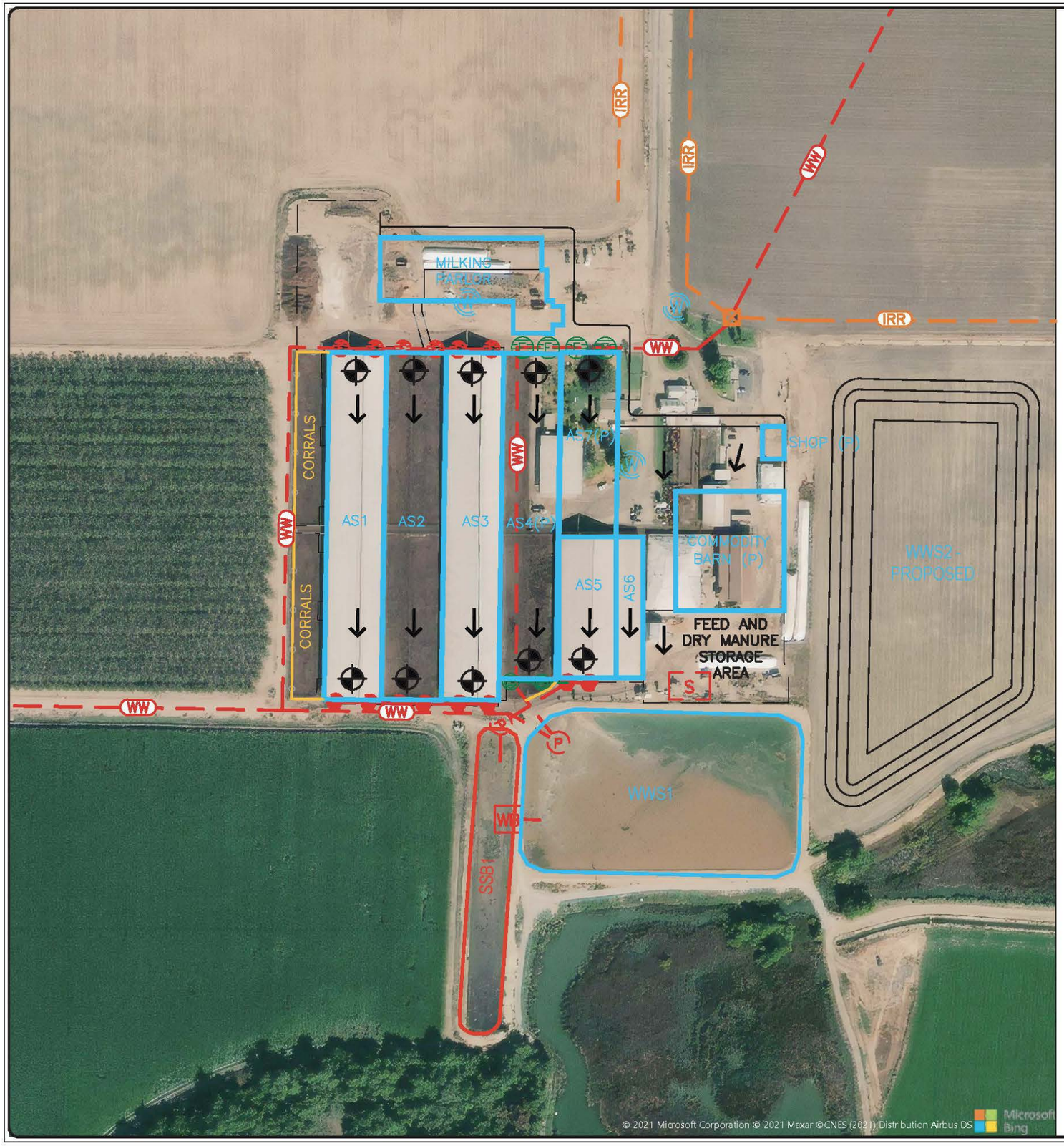
SITE MAP
LAND APPLICATION AREAS
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS
DATE: 5/9/2021
FILE: 02_site.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.



LEGEND

- ROOF AREA
- (P) ROOF AREA (PROPOSED)
- CORRAL AREA
- IRR IRRIGATION LINE
- WW WASTEWATER LINE
- WW WASTEWATER LINE (PROPOSED)
- P WASTEWATER SUMP WITH PUMP
- FLUSH SYSTEM DRAIN INLET
- FLUSH SYSTEM DRAIN INLET (PROPOSED)
- FLUSH SYSTEM DISCHARGE VALVE
- FLUSH SYSTEM DISCHARGE VALVE (PROPOSED)
- S MECHANICAL SEPARATOR (EXISTING)
- W WELL
- GENERAL SLOPE AND DIRECTION OF FLOW
- INSPECTION POINT FOR MONITORING ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM

N

SCALE: 1" = 200'

0 100 200 400

SHEET 4 OF 8

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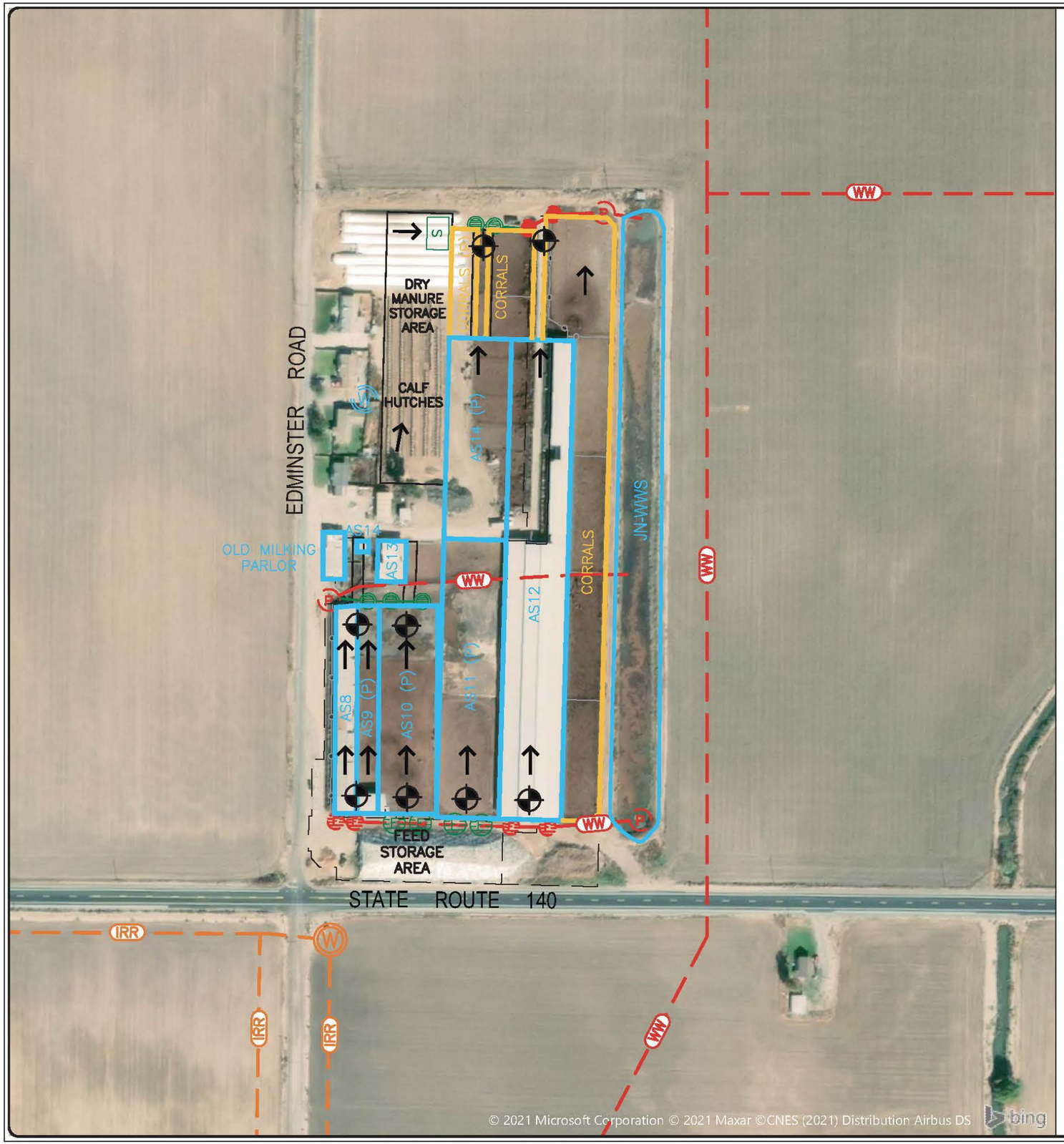
SITE MAP - PRODUCTION AREA - SOUTH
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS	REVISIONS	
DATE: 5/6/2021	SYMBOL	DESCRIPTION
FILE: DM_dpa.dwg		
JOB NO.: 2018---018		



LEGEND

- ROOF AREA
- (P) ROOF AREA (PROPOSED)
- CORRAL AREA
- (P) CORRAL AREA (PROPOSED)
- IRRIGATION LINE
- WASTEWATER LINE
- WASTEWATER LINE (PROPOSED)
- WASTEWATER SUMP WITH PUMP
- FLUSH SYSTEM DRAIN INLET
- FLUSH SYSTEM DRAIN INLET (PROPOSED)
- FLUSH SYSTEM DISCHARGE VALVE
- FLUSH SYSTEM DISCHARGE VALVE (PROPOSED)
- S MECHANICAL SEPARATOR (PROPOSED)
- WELL
- GENERAL SLOPE AND DIRECTION OF FLOW
- INSPECTION POINT FOR MONITORING ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM

N

SCALE: 1" = 200'

0 100 200 400

SHEET 5 OF 8

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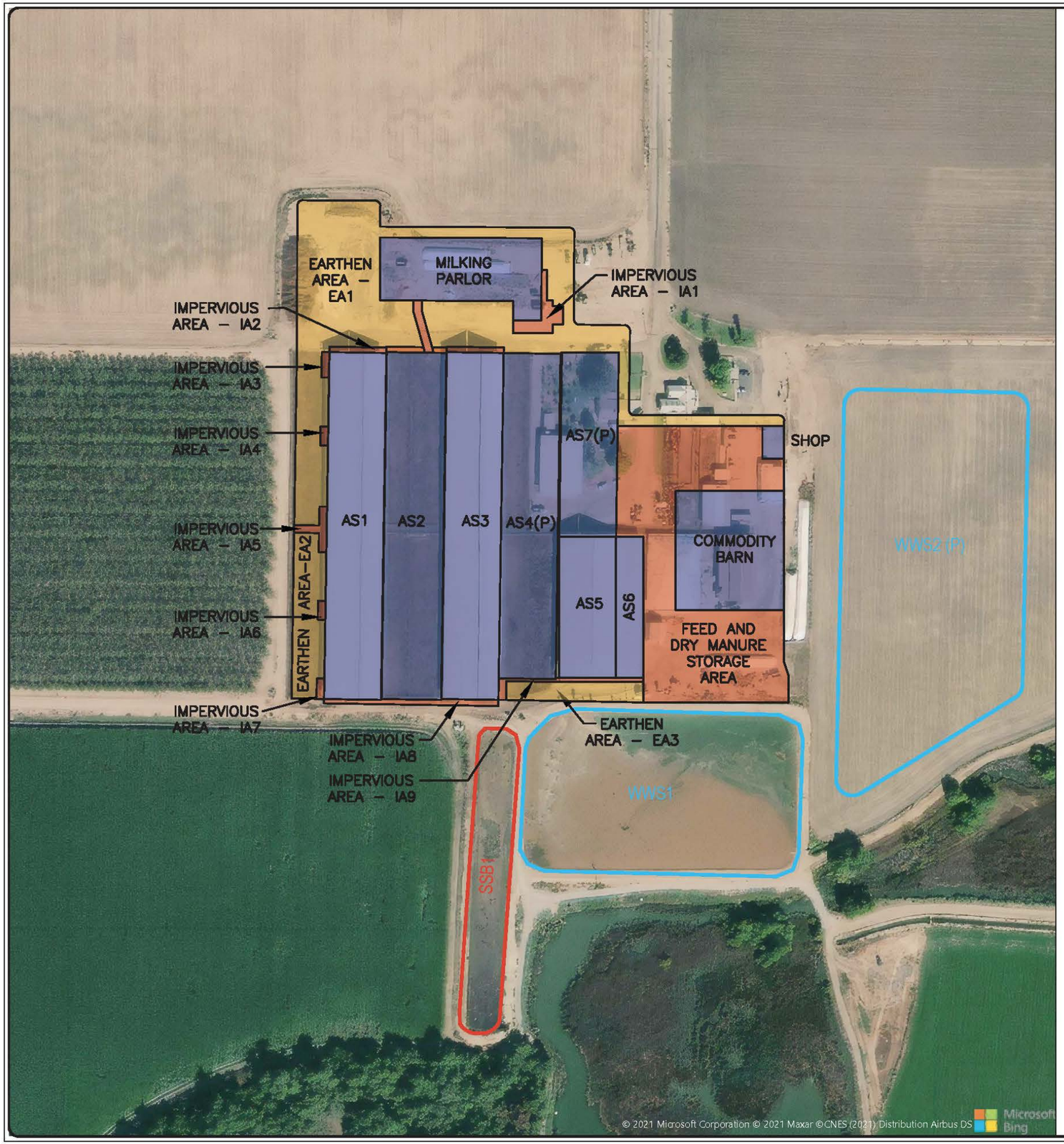
SITE MAP - PRODUCTION AREA - NORTH
SILVA DAIRY FARMS
MERCED COUNTY, CA

SYMBOL	DESCRIPTION	APPD.
	REVISIONS	

DRAWN BY: MS
DATE: 5/6/2021
FILE: 018_dpa.dgn
JOB NO.: 2018—018



LEGEND

- ROOF AREA
- EARTHEN AREA
- IMPERVIOUS AREA

N

SCALE: 1" = 200'

0 100 200 400

SHEET 6 OF 8

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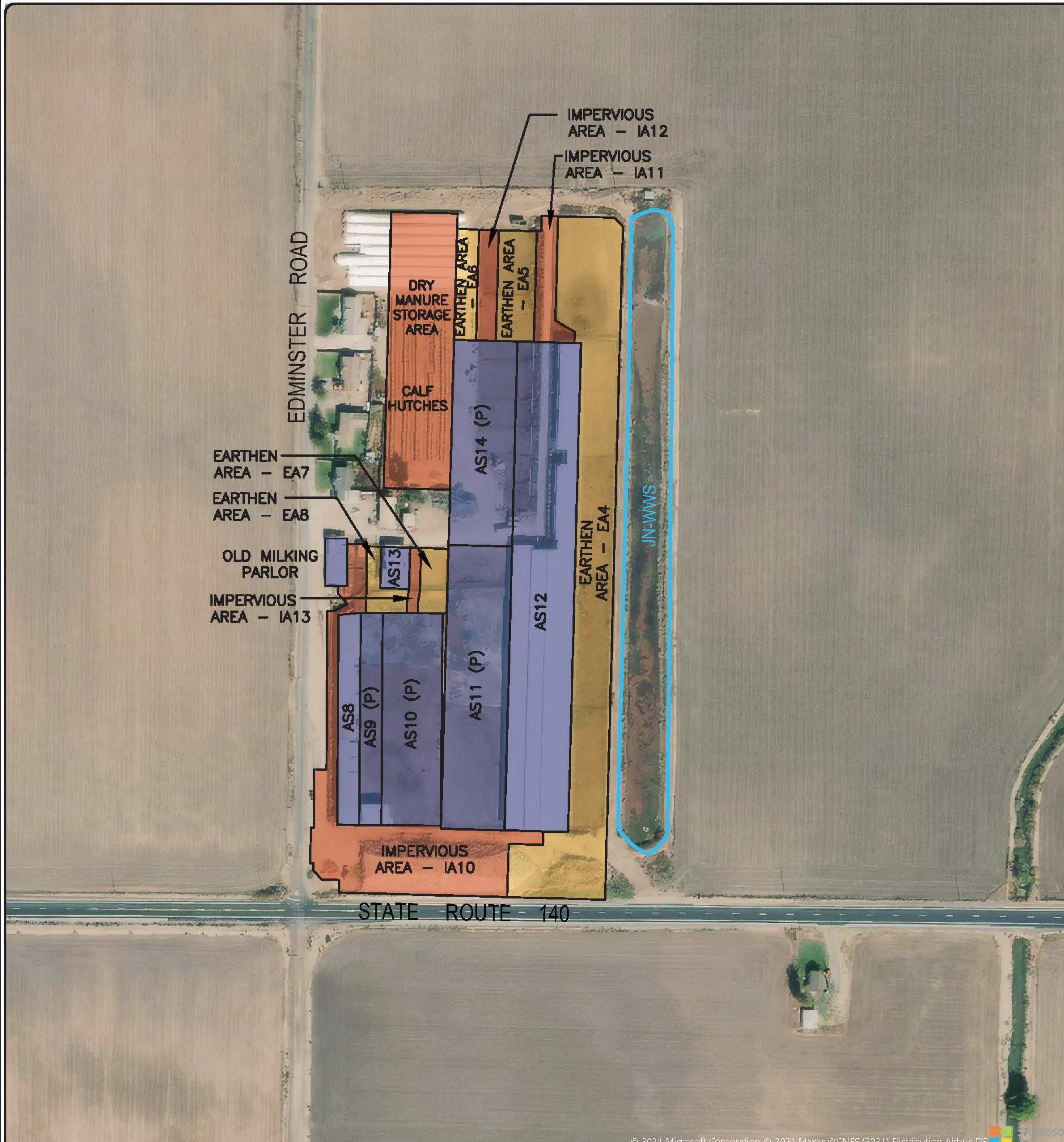
PRODUCTION AREA HYDROLOGIC MAP

SILVA DAIRY FARMS

MERCED COUNTY, CA

DRAWN BY: MS
DATE: 5/9/2021
FILE: 04_hydro.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.



LEGEND

- ROOF AREA
- EARTHEN AREA
- IMPERVIOUS AREA

N

SCALE: 1" = 200'

0 100 200 400

SHEET 7 OF 8

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PRODUCTION AREA
HYDROLOGIC MAP - NORTH
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS
DATE: 5/9/2021
FILE: 07_hydro.dwg
JOB NO.: 2018-018

REVISIONS

SYMBOL	DESCRIPTION	APPD.

National Flood Hazard Layer FIRMette

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/28/2021 at 10:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE)
- With BFE or Depth
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
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- Area with Flood Risk due to Levee

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard
- Effective LOMRs
- Area of Undetermined Flood Hazard

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/23/2021 at 8:47 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

3. DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE DOCUMENTATION

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Silva Dairy Farms

Physical address of dairy:

1499 N Edminster RD	Stevinson	Merced	95374
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

7S	10E	20	Mt. Diablo	37° 18' 36.58" N	120° 53' 51.14" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1915

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0055-0210-0020-0000 0055-0210-0024-0000 0055-0210-0049-0000

B. OPERATOR NAME: Silva, Manuel Telephone no.: (Landline) (209) 652-6582 (Cellular)

1499 N Edminster RD	Stevinson	CA	95374
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Silva, Manuel Telephone no.: (Landline) (Cellular) (209) 652-6582

1499 N Edminster RD	Stevinson	CA	95374
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sousa, Manny Telephone no.: (209) 238-3151 (Landline) (Cellular)

Title: Civil Engineer

P.O. Box 1613	Oakdale	CA	95361
Mailing Address Number and Street	City	State	Zip Code

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The milk cow dairy is currently regulated under individual Waste Discharge Requirements.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

4,500 milk and dry cows combined (regulatory review is required for any expansion)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	4,000	4,000	22	1,000
Dry Cows	500	500	18	1,050
Bred Heifers (15-24 mo.)	1,000	1,000	6	725
Heifers (7-14 mo.)	1,000	1,000	6	665
Calves (4-6 mo.)	400	400	0	
Calves (0-3 mo.)	400	400	0	

Predominant milk cow breed: Jersey

Average milk production: 56 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 308 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 4.0 per day

Number of hours spent milking each day: 22.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 2.0 run cycles/wash

Bulk tank wash vat volume: 200 gallons/cycle

Bulk tank wash wastewater: 1,600.0 gallons/day

Pipeline wash and sanitizing: 2.0 run cycles/wash

Pipeline wash vat volume: 200 gallons/cycle

Pipeline wash wastewater: 800.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 5,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 52,093 gallons/day

Vacuum pumps / air compressors / chillers type: Mechanically/Air Cooled

Vacuum pumps / air compressors / chillers volume: 0 gallons/day

Milkbarn and equipment wastewater volume generated daily: 54,493 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0 *of 4,000*	0 *of 500*	0 *of 1,000*	0 *of 1,000*	0 *of 400*	0 *of 400*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 0 sprinklers

Duration of each sprinkler cycle: 0.1 minutes

Number of sprinkler pen runs/milking: 0 cycles/milking

Flow rate for each sprinkler head: 0.1 gallons/minute

Total sprinkler pen wastewater volume: 0 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

No miscellaneous equipment entered.

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 52,093 gallons/day

Recycled water reused: 5,000 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 47,093 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 6,539,160 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	600	40.0	50%	15,000
			Total:	15,000

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 35 %

Description of all solids separation equipment used in flushed lane manure management systems:

The facility will have two (2) solid manure separators, one (1) each at the South portion of the facility and at the North portion of the facility.

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	10,898.67	1,307,841	81,527.75	9,783,330
Manure generated by the herd sent to pond(s):	7,572.11	908,653	56,643.29	6,797,195
Manure generated by the herd sent to dry lot(s):	2,344.23	281,307	17,536.03	2,104,324
Manure solids (herd) removed by separation:	475.55	57,066	3,557.34	426,881
Liquid component in separated solids not send to pond(s):	506.79	60,815	3,791.08	454,930
Imported and facility generated bedding sent to pond(s):	125.00	15,000	935.06	112,208
Total manure and bedding sent to pond(s):	7,697.11	923,653	57,578.36	6,909,403
Residual manure solids and bedding sent to pond(s) w/factor:	504.08	60,490	3,770.78	452,494
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:	183,989		1,376,335	

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Newman

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.50 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 7.58 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone A

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
Dry Manure Storage Area / Calf Hutches	60,000	1	0.95	0.50	Drains into pond(s).
Feed and Dry Manure Storage Area	95,570	1	0.95	0.50	Drains into pond(s).
Impervious Area 1 - IA1	3,670	1	0.95	0.50	Drains into pond(s).
Impervious Area 10 - IA10	58,850	1	0.95	0.50	Drains into pond(s).
Impervious Area 11- IA11	9,525	1	0.95	0.50	Drains into pond(s).
Impervious Area 12 - IA12	7,200	1	0.95	0.50	Drains into pond(s).
Impervious Area 13 - IA13	2,370	1	0.95	0.50	Drains into pond(s).
Impervious Area 2 - IA2	4,600	1	0.95	0.50	Drains into pond(s).
Impervious Area 3 - IA3	660	1	0.95	0.50	Drains into pond(s).
Impervious Area 4 - IA4	490	1	0.95	0.50	Drains into pond(s).

Impervious Area 5 - IA5	1,820	1	0.95	0.50	Drains into pond(s).
Impervious Area 6 - IA6	490	1	0.95	0.50	Drains into pond(s).
Impervious Area 7 - IA7	540	1	0.95	0.50	Drains into pond(s).
Impervious Area 8 - IA8	3,100	1	0.95	0.50	Drains into pond(s).
Impervious Area 9 - IA9	2,330	1	0.95	0.50	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 251,215 sq. ft.

Total surface area: 251,215 sq. ft.

Runoff from normal storage period rainfall: 593,520 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 890,280 gallons/storage period

25 year/24 hour storm event runoff: 371,929 gallons/storage period

Total surface area runoff: 965,449 gallons/storage period

Total surface area runoff with 1.5 factor: 1,262,209 gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
Animal Shelter 1 - AS1	67,200	1	Irrigation Pipeline
Animal Shelter 10 - AS10	41,472	1	Wastewater pond
Animal Shelter 11 - AS11	59,110	1	Wastewater pond
Animal Shelter 12 - AS12	101,775	1	Wastewater pond
Animal Shelter 13 - AS13	3,900	1	Wastewater pond
Animal Shelter 14 - AS14	42,665	1	Wastewater pond
Animal Shelter 2 - AS2	70,400	1	Irrigation Pipeline
Animal Shelter 3 - AS3	67,200	1	Irrigation Pipeline
Animal Shelter 4 - AS4	63,000	1	Wastewater pond
Animal Shelter 5 - AS5	27,300	1	Wastewater pond
Animal Shelter 6 - AS6	13,000	1	Wastewater pond
Animal Shelter 7 - AS7	35,700	1	Wastewater pond
Animal Shelter 8 - AS8	15,280	1	Wastewater pond
Animal Shelter 9 - AS9	15,360	1	Wastewater pond
Commodity Barn	44,000	1	Adjacent field
Milking Parlor	36,440	1	Wastewater pond
Old Milking Parlor	3,440	1	Wastewater pond
Shop	2,400	1	Adjacent field

Surface area that does not run off into pond(s):	251,200	sq. ft.
Surface area that runs off into pond(s):	458,442	sq. ft.
Total surface area:	709,642	sq. ft.
Runoff from normal storage period rainfall:	2,166,228	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	3,249,342	gallons/storage period
25 year/24 hour storm event runoff:	714,455	gallons/storage period
Total surface area runoff:	2,880,683	gallons/storage period
Total surface area runoff with 1.5 factor:	3,963,797	gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
Earthen Area 1 - EA1	113,270	1	0.35	0.20	Drains into pond(s).
Earthen Area 3 - EA3	9,000	1	0.35	0.20	Drains into pond(s).
Earthen Area 4 - EA4	107,440	1	0.35	0.20	Drains into pond(s).
Earthen Area 5 - EA5	13,800	1	0.35	0.20	Drains into pond(s).
Earthen Area 6 - EA6	8,000	1	0.35	0.20	Drains into pond(s).
Earthen Area 7 - EA7	5,870	1	0.35	0.20	Drains into pond(s).
Earthen Area 8 - EA8	5,280	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s):	0	sq. ft.
Surface area that runs off into pond(s):	262,660	sq. ft.
Total surface area:	262,660	sq. ft.
Runoff from normal storage period rainfall:	248,224	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	372,336	gallons/storage period
25 year/24 hour storm event runoff:	143,269	gallons/storage period
Total surface area runoff:	391,493	gallons/storage period
Total surface area runoff with 1.5 factor:	515,605	gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: JN-WWS

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	1,180 ft.	Earthen Depth (ED):	13 ft.
Earthen Width (EW):	80 ft.	Side Slope (S):	1.7 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	1.0 ft.

Calculations			
Liquid Length (LL):	1,173 ft.	Storage Volume Adjusted for Dead Storage Loss:	650,748 cu. ft.
Liquid Width (LW):	73 ft.		
Pond Surface Area:	94,400 sq. ft.	Pond Marker Elevation:	10.4 ft.
Storage Volume:	693,405 cu. ft.	Evaporation Volume:	530,742 gals/period
		Adjusted Surface Area:	84,590 sq. ft.

POND OR BASIN DESCRIPTION: SSB 1

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	570 ft.	Earthen Depth (ED):	13 ft.
Earthen Width (EW):	75 ft.	Side Slope (S):	1.7 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	0.0 ft.

Calculations			
Liquid Length (LL):	563 ft.	Storage Volume Adjusted for Dead Storage Loss:	297,762 cu. ft.
Liquid Width (LW):	68 ft.		
Pond Surface Area:	42,750 sq. ft.	Pond Marker Elevation:	10.4 ft.
Storage Volume:	297,762 cu. ft.	Evaporation Volume:	236,854 gals/period
		Adjusted Surface Area:	37,750 sq. ft.

POND OR BASIN DESCRIPTION: WWS1

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	510 ft.	Earthen Depth (ED):	8 ft.
Earthen Width (EW):	300 ft.	Side Slope (S):	3.0 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	2.0 ft.

Calculations			
Liquid Length (LL):	498 ft.	Storage Volume Adjusted for Dead Storage Loss:	536,736 cu. ft.
Liquid Width (LW):	288 ft.		
Pond Surface Area:	153,000 sq. ft.	Pond Marker Elevation:	5.4 ft.
Storage Volume:	778,248 cu. ft.	Evaporation Volume:	891,166 gals/period
		Adjusted Surface Area:	142,035 sq. ft.

POND OR BASIN DESCRIPTION: WWS2 - Proposed

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	620 ft.	Earthen Depth (ED):	13 ft.
Earthen Width (EW):	300 ft.	Side Slope (S):	3.0 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	1.0 ft.

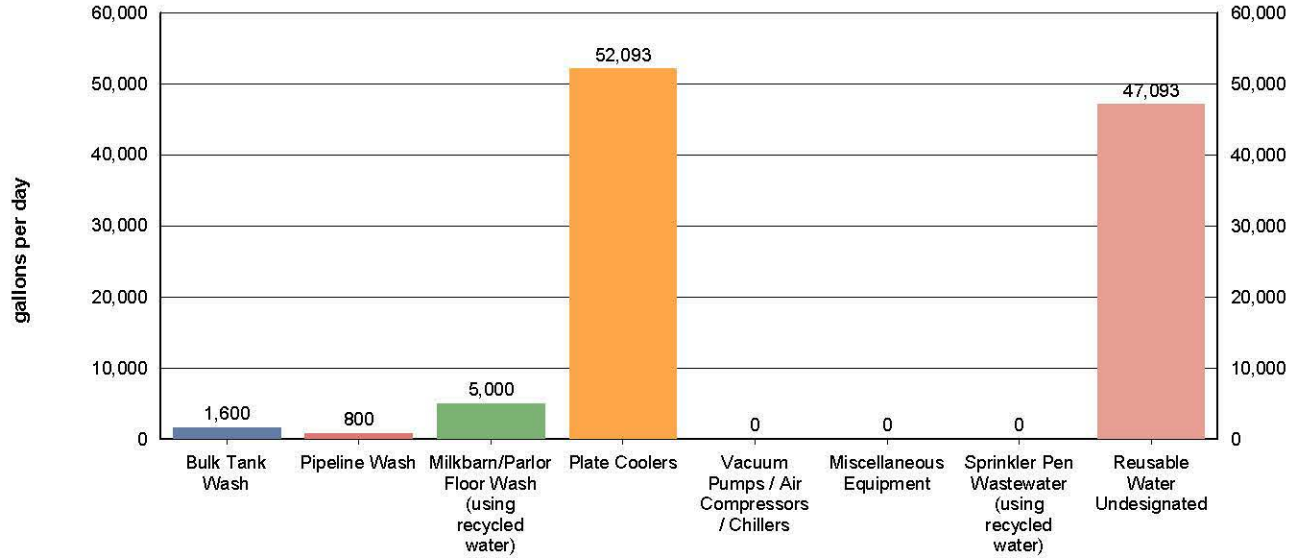
Calculations			
Liquid Length (LL):	608 ft.	Storage Volume Adjusted for Dead Storage Loss:	1,494,240 cu. ft.
Liquid Width (LW):	288 ft.		
Pond Surface Area:	186,000 sq. ft.	Pond Marker Elevation:	10.4 ft.
Storage Volume:	1,616,868 cu. ft.	Evaporation Volume:	1,088,755 gals/period
		Adjusted Surface Area:	173,527 sq. ft.

Potential storage losses (due to dead storage):	406,797.0 cubic feet - or -	3,043,052.9 gallons
Liquid storage surface area:	442,816 sq. ft.	
Rainfall onto retention pond(s):	2,249,901 gallons/storage period	
Rainfall runoff into retention pond(s):	3,007,972 gallons/storage period	
Normal rainfall onto retention pond(s) with 1.5 factor:	3,374,852 gallons/storage period	
Normal rainfall runoff into retention pond(s) with 1.5 factor:	4,511,957 gallons/storage period	
Storage period evaporation (default):	13.42 inches/storage period	
Storage period evaporation (user-override):	inches/storage period	
Storage period evaporation volume:	2,747,517 gallons/storage period	
Manure and bedding sent to pond(s):	6,909,403 gallons/storage period	

Milkbarn water sent to pond(s):	6,539,160 gallons/storage period
Fresh flush water for storage period:	0 gallons/storage period

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

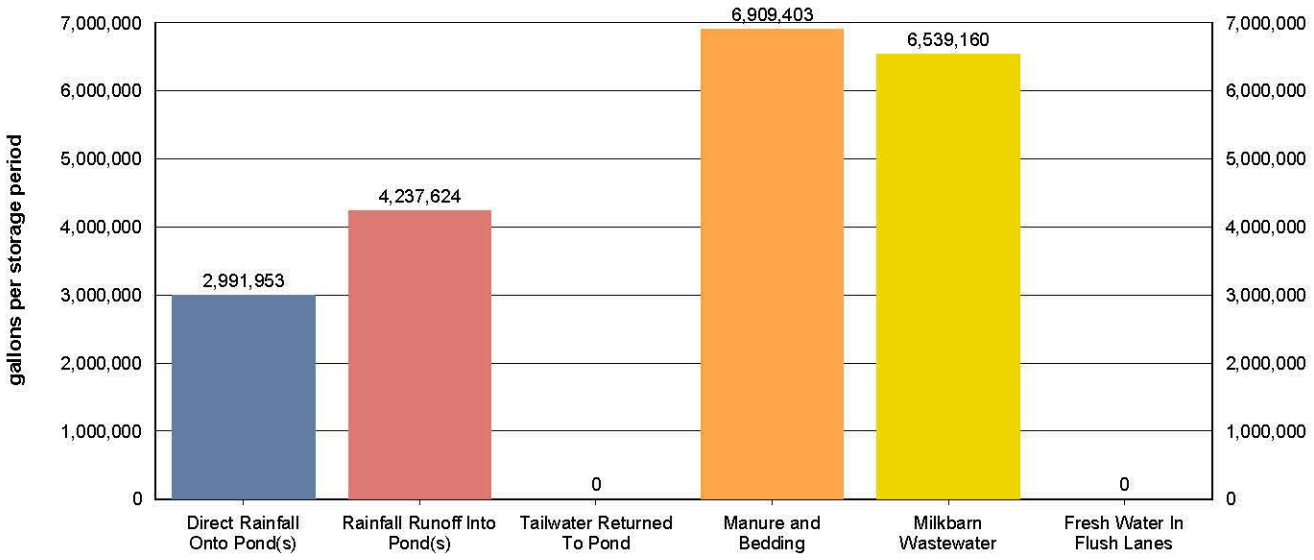


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 54,493 gallons/day

Total milkbarn wastewater generated per period: 6,539,160 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

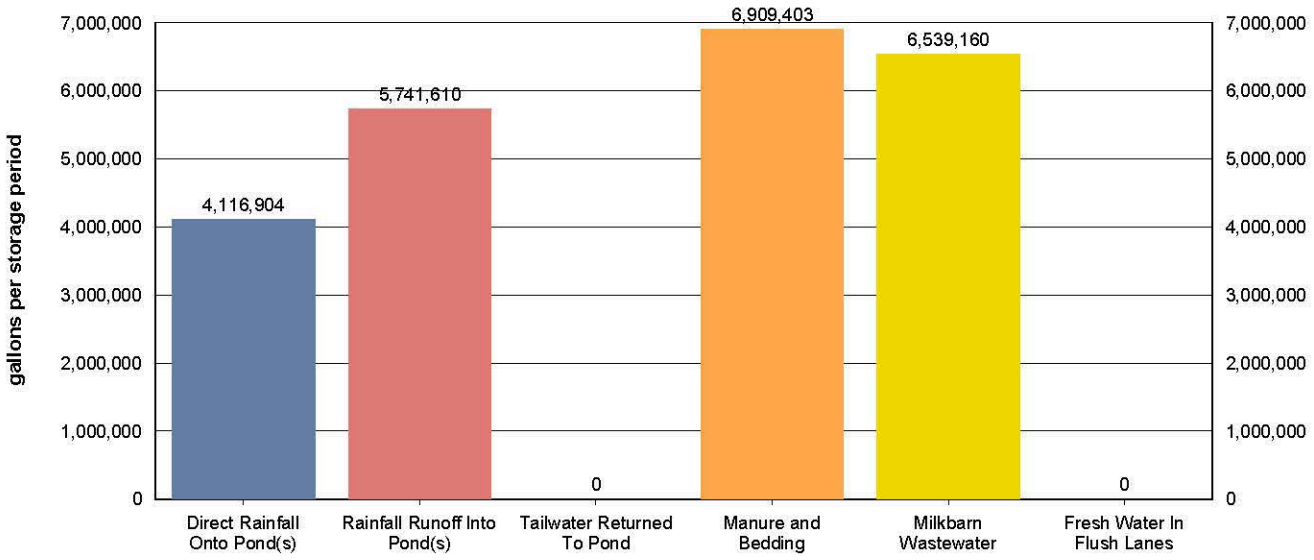


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	172,318	gallons/day
Total process wastewater generated per period:	20,678,141	gallons/storage period
Total process wastewater removed due to evaporation:	2,747,517	gallons/storage period
Total storage capacity required:	17,930,624	gallons
	2,396,976	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	22,288,103	gallons
	2,979,486	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)

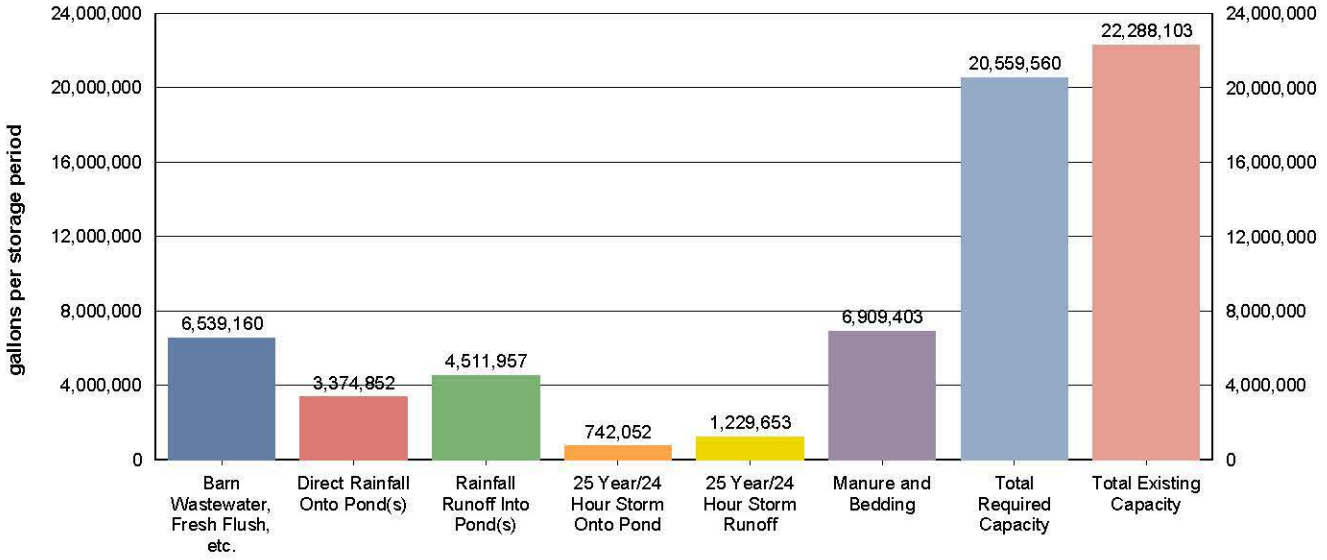


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	194,226	gallons/day
Total process wastewater generated per period:	23,307,077	gallons/storage period
Total process wastewater removed due to evaporation:	2,747,517	gallons/storage period
Total storage capacity required:	20,559,560	gallons
	2,748,413	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	22,288,103	gallons
	2,979,486	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

D. STORAGE VOLUME ASSESSMENT (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Barn wastewater, fresh flush water, and tailwater:	6,539,160	gallons/storage period
Manure and bedding sent to pond:	6,909,403	gallons/storage period
Precipitation onto pond:	3,374,852	gallons/storage period
Precipitation runoff:	4,511,957	gallons/storage period
25 year/24 hour storm onto pond:	742,052	gallons/storage period
25 year/24 hour storm runoff:	1,229,653	gallons/storage period
Residual solids after liquids have been removed (liquid equivalent):	452,494	gallons/storage period
Total process wastewater removed due to evaporation:	2,747,517	gallons/storage period
Total required capacity:	20,559,560	gallons/storage period
Total existing capacity:	22,288,103	gallons/storage period
Existing capacity meets estimated storage needs:	[X] Yes [ ] No	

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: SSB 1

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 0.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Solids will be measured manually after lowering of the liquid pond level.

When solids/sludge accumulate to a thickness of 12.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids will be removed with an excavator.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS1

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 1.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Solids will be measured manually after lowering of the liquid pond level.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids will be removed with an excavator.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS2 - Proposed

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 1.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Solids will be measured manually after lowering of the liquid pond level.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

The proposed wastewater storage basin will be lined. Solids from the higher elevations may be removed with an excavator so longs as care is taken not to damage the liner. Solids from the lower elevations or bottom of the basin must be removed with an agitator or similar equipment in a manner that will not damage the liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: JN-WWS

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 1.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Solids will be measured manually after lowering of the liquid pond level.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids will be removed with an excavator.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
Animal Shelter 1 - AS1	1	67,200
Animal Shelter 10 - AS10	1	41,472
Animal Shelter 11 - AS11	1	59,110
Animal Shelter 12 - AS12	1	101,775
Animal Shelter 14 - AS14	1	42,665
Animal Shelter 2 - AS2	1	70,400
Animal Shelter 3 - AS3	1	67,200
Animal Shelter 4 - AS4	1	63,000
Animal Shelter 5 - AS5	1	27,300
Animal Shelter 7 - AS7	1	35,700
Animal Shelter 9 - AS9	1	15,360
Commodity Barn	1	44,000
Milking Parlor	1	36,440
Old Milking Parlor	1	3,440
Shop	1	2,400
Buildings without rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
Animal Shelter 13 - AS13	1	3,900
Animal Shelter 6 - AS6	1	13,000
Animal Shelter 8 - AS8	1	15,280

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 1st of October

Assessment for other rainfall collections systems will occur on or before: 1st of October

Description of how rainfall collection systems will be assessed:

Gutters, downspouts, inlets, and drainage piping will be inspected for proper operation. Repairs will be made as needed prior to the rain season.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur:	1st of each month
Day of the week wet season assessment will occur:	Monday
Solid manure removal and regrading assessment will occur on or before:	1st of October

Conditions requiring manure removal and/or regrading:

Solids will be removed with scrapers and/or loaders. Regrading will be performed as necessary after solids removal to ensure proper drainage.

Solid manure removal and/or regrading will occur on or before:	1st of October

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur:	1st of each month
Day of the week wet season assessment will occur:	Monday
Regrading/resurfacing and berm maintenance assessment will occur on or before:	1st of October
Regrading/resurfacing and berm maintenance completion will occur on or before:	1st of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 1st of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 1st of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 1st of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 1st of October

Animal housing drainage system maintenance will occur on or before: 1st of September

Animal housing area drainage system assessment and maintenance methods:

Animal housing drainage systems will be inspected for proper operation. Repairs will be made as soon as possible after identification of damaged facilities.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: San Jose Tallow

Rendering company or landfill telephone number: (408) 452-8777

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Annually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
Iodine / Teat Dip	1,000	gallons	year	Milking Parlor	Picked up by distributor			
Acid	300	gallons	year	Milking Parlor	Picked up by distributor			
CIP Detergent	600	gallons	year	Milking Parlor	Picked up by distributor			

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Exhibit Sheets 4 & 5

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Exhibit Sheets 2 & 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: n/a

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Exhibit Sheets 3,4,5

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Exhibit Sheet 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge/mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Exhibit Sheets 3 & 4

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Exhibit Sheet 2

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Exhibit Sheets 3 & 4

E. FLOOD PROTECTION / INUNDATION REPORT

Provide the proposed modifications or improvements with the corresponding design to achieve the necessary flood protection and a schedule for construction and certification of completion to comply with the Schedule of Tasks J.1 of Waste Discharge Requirements General Order No. R5-2007-0035.

Flood zone map and/or document reference number: WMP Section 3.b.

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: WMP Section 1.b.

C. OWNER AND/OR OPERATOR CERTIFICATION

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.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Manuel Silva	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
5-10-21	
DATE	DATE

INTRODUCTION / PROJECT OVERVIEW

This analysis has been prepared to accompany the Waste Management Plan (WMP) for the subject facility in Merced County, CA. A Waste Management Plan (WMP) describing the generation and management of dairy wastewater under the proposed conditions must be prepared in accordance with Merced County and Central Valley Regional Water Quality Control Board (CVRWQCB) requirements. CVRWQCB General Order No. R5-20013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies,* (Order) was adopted by the California Regional Water Quality Control Board (CRWQCB) Central Valley Region in 2013 and establishes the criteria for preparation of the WMP.

Per the requirements set forth by the Order each milk cow dairy in the Central Valley Region that is in an area subject to inundation from the prescribed flood event must have or must construct improvements that provide protection from that flood event. More particularly the Order states the following:

***General Specification B.2**: "In the Sacramento and San Joaquin River Basins, ponds and manured areas at existing milk cow dairies in operation on or before 27 November 1984 shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. Existing milk cow dairies that were in operation on or before 27 November 1984 and that are protected against 100-year peak stream flows must continue to provide such protection.*

Existing milk cow dairies built or expanded after 27 November 1984 shall be protected against 100-year peak stream flows (Title 27 Section 22562(c))."

Given the proposed expansion of this existing dairy facility it will be required to provide protection against 100-year peak stream flows.

The above referenced section of Title 27 (Section 22562 of Chapter 7, Subchapter 2) also states the following criterion in its item (3):

"The determination of peak stream flows shall be from data provided by a recognized federal, state, local, or other agency."

The source of flood information for this analysis is Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) Flood Insurance Studies (FISs). FIRMs and FISs are industry standard sources of flood information for engineers, scientists, lending institutions, and other industries with a vested interest in the location of real property as it relates to areas subject to flood inundation.

A portion of the subject facility and its proposed expansion area lie within a FEMA Zone A, or an area determined to be subject to inundation by the 100-year flood event. It is the intent of this analysis to do the following:

1. Determine a Base Flood Elevation (BFE) for the portion of the site located with the FEMA Zone A.
2. Determine the elevations of existing Dairy Production Area (DPA) improvements relative to the determined BFE.
    a. If the DPA is currently protected from inundation by the design storm event, then the extent of this protection will be demonstrated.
    b. If the DPA is not protected from inundation by the design storm event, then the extent of

inundation will be demonstrated.

3. If portions of the existing and proposed DPA are determined not to be protected from the design storm event by existing conditions, then a plan for constructing improvements to provide adequate protection will be developed.

Neither this analysis nor any of the information contained herein represent a certificate of elevation or Letter of Map Revision or Amendment (LOMR / LOMA) for the project site.

DETERMINATION OF BASE FLOOD ELEVATION (BFE)

A portion of the existing dairy facility and its proposed expansion area lie within Zone A per the relevant FIRM. Zone A is defined as an area subject to inundation by the 100-year storm event but for which a Base Flood Elevation (BFE) has not been established. The location of the DPA is shown on the FIRM on the attached Exhibit B.

The hydrologic analysis used to determine the boundary of Zone A in these cases typically has been performed utilizing topographic information available on quadrangle maps prepared by the United States Geological Survey (USGS). The method of determining an estimated flood elevation for Zone A sites as recommended by FEMA is to superimpose the Zone A boundary defined by the FIRM over the relevant USGS quadrangle map and interpolate the elevation along said Zone A boundary (see *Managing Floodplain Development in Approximate Zone A Areas, Federal Emergency Management Agency,* April, 1995).

For purposes of this analysis the FIRM was digitally superimposed over an aerial photo of the project site. The 20' contours on the quadrangle map were digitized and a three-dimensional model of the existing terrain was generated. Spot elevations of this model were then taken along the Zone A boundary to obtain estimated flood elevations within the DPA. The elevations of the model along with the spot elevations are shown on Exhibit C, Estimated 100-Year Base Flood Elevation. It is noted that the quadrangle map is referenced to the North American Vertical Datum of 1988 (NAVD88).

As indicated on Exhibit C, Estimated 100-Year Base Flood Elevation, the estimated flood elevation in the vicinity of the DPA that is subject to inundation varies from approximately 73.6' at the northwest corner of the DPA to approximately 74.9' at the northeast corner of the DPA.

DETERMINATION OF ELEVATIONS OF EXISTING DAIRY PRODUCTION AREA AND PROPOSED EXPANSION AREA WITHIN FEMA ZONE A

An engineering survey was performed to determine the actual existing elevations of facilities within the DPA relative to the estimated flood elevation. USGS benchmarks referenced to the North American Vertical Datum of 1988 (NAVD88) were used to establish elevations. A three -dimensional model of the existing terrain was generated using the engineering survey performed on the existing DPA improvements in to compare actual elevations to those of the estimated flood elevation. Contours of that model are shown on Exhibit D, Existing Topography – Existing Improvements.

It is apparent upon visual inspection that the DPA was raised significantly above existing grade during construction. Portions of the facility were raised approximately 6' and this was verified by the survey data. As shown on Exhibit D, Existing Topography – Existing Improvements, the elevations of the DPA within the Flood Zone Boundary are consistently above the estimated flood elevation and range from 75' to 79'.

The proposed expansion includes construction of a new wastewater pond near the southwest corner of the existing DPA. This area is currently unimproved and is utilized as irrigated cropland for production of feed crops for the dairy operation. The existing elevations in this area vary from 73' to 74'.

DETERMINATION OF LEVELS OF FLOOD PROTECTION AND INUNDATION / CONCEPTUAL FLOOD PROTECTION PLAN

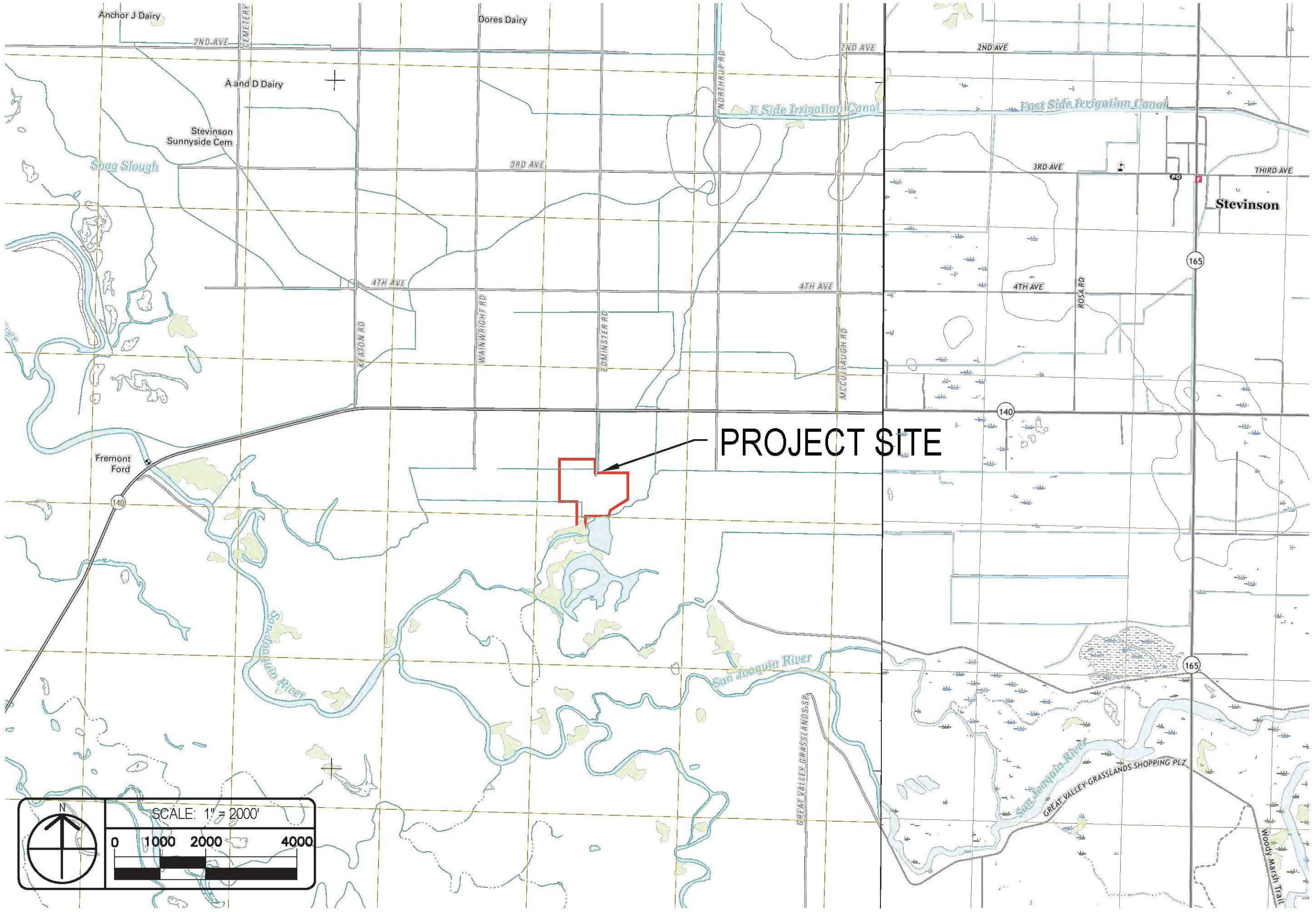
As discussed in the previous section the existing DPA that is within the designated Zone A area has been elevated to elevations between 75' to 79', or 1' to 5' above the estimated flood elevation, and as such currently meets the requirements of General Specification B.2. of the General Order for flood protection. However, the proposed expansion area consisting of a new wastewater pond near the southwest corner of the existing DPA will require improvements to meet the flood protection criteria of the General Order.

A Conceptual Grading Plan / Flood Protection Plan has been prepared and is incorporated in this Analysis as Exhibit E. This Plan includes proposed improvements that would provide adequate flood protection as required by the Order. A summary of the proposed improvements is as follows:

1. The proposed wastewater pond will be constructed mostly above existing grade and will have a depth of approximately 12'. The existing grade in the area of the pond is approximately 73' to 74'. The estimated BFE in the area of the pond is approximately 74.8'. It is expected that the top of the embankments of the pond will be approximately 11' above existing grade or to an elevation of approximately 84'.

With construction of the proposed improvements described above and shown conceptually on Exhibit E, the subject dairy facility will have adequate protection from the 100-year flood event.

EXHIBITS



SHEET 1 OF 5

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EXHIBIT A
VICINITY MAP
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS
DATE: 3/4/2021
FILE: 01_vic.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.

National Flood Hazard Layer FIRMette

EXHIBIT B

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE)
- With BFE or Depth
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Flood Risk due to Levee. See Notes.
- Area with Flood Risk due to Levee

OTHER AREAS
- Area of Minimal Flood Hazard
- Effective LOMRs
- Area of Undetermined Flood Hazard

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

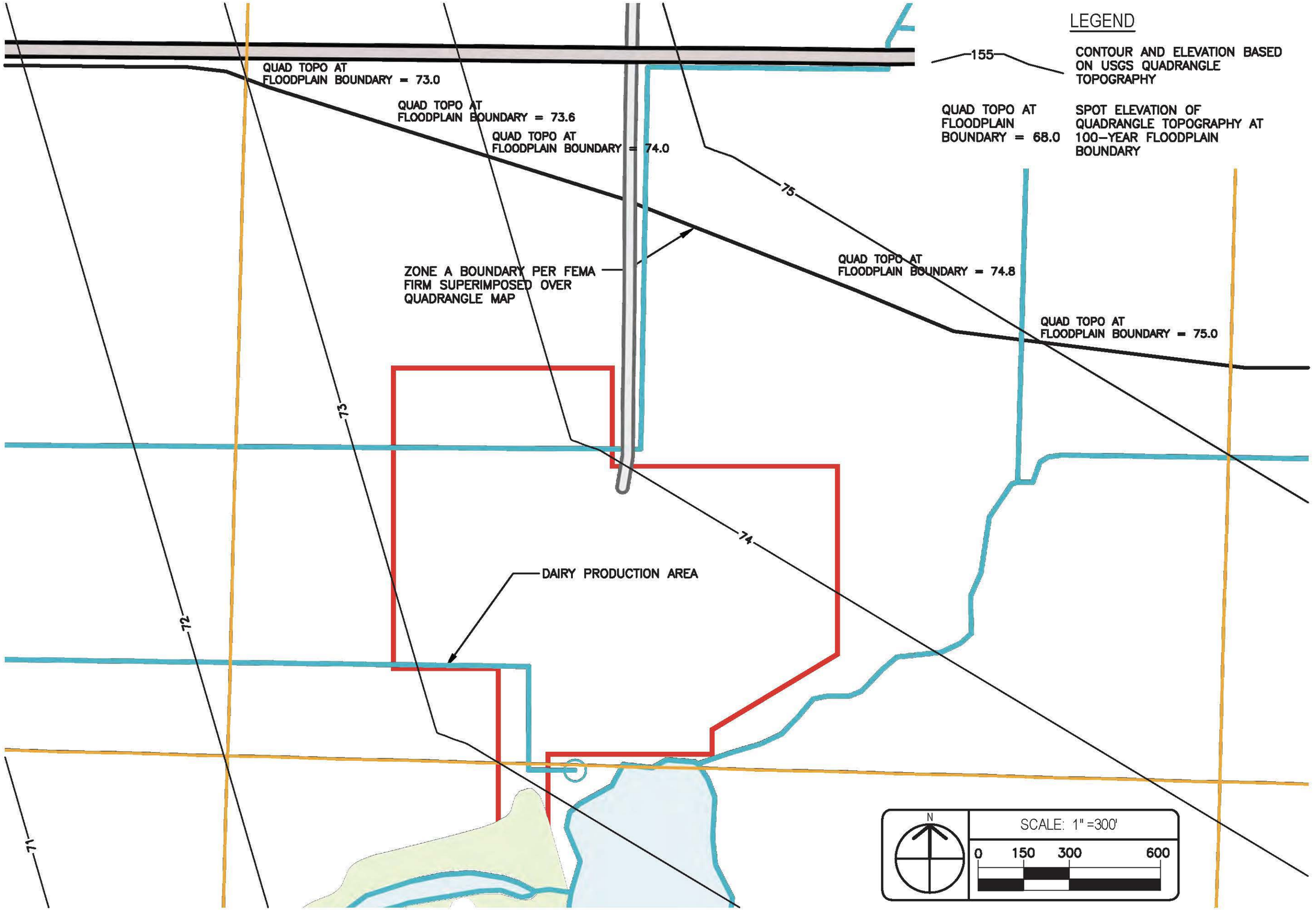
MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/23/2021 at 8:47 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



SHEET 3 OF 5

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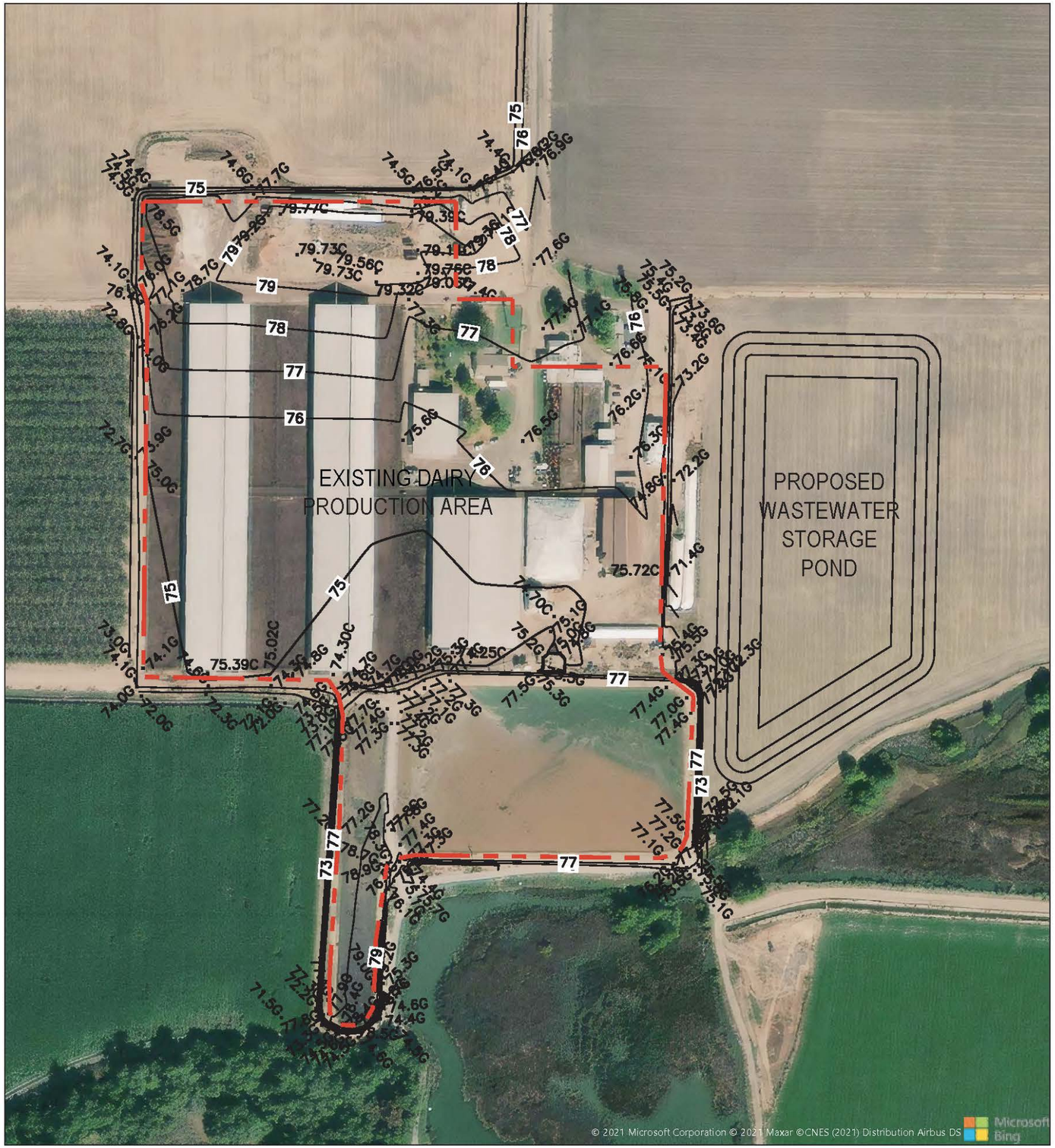
EXHIBIT C
EXISTING TOPOGRAPHY AND ESTIMATED FLOOD ELEVATION
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN: BY:MS
DATE:3/4/2021
FILE:03_site.dwg
JOB NO.:2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.



LEGEND

155	CONTOUR OF THREE–DIMENSIONAL MODEL OF EXISTING SITE IMPROVEMENTS
	IMPROVEMENTS CONSTRUCTED ABOVE ESTIMATED BASE FLOOD ELEVATION (BFE)
× 75.6G	EXISTING GROUND ELEVATION
× 75.6C	EXISTING CONCRETE PAVEMENT ELEVATION

N

SCALE: 1" =200'

0 100 200 400

SHEET 4 OF 5

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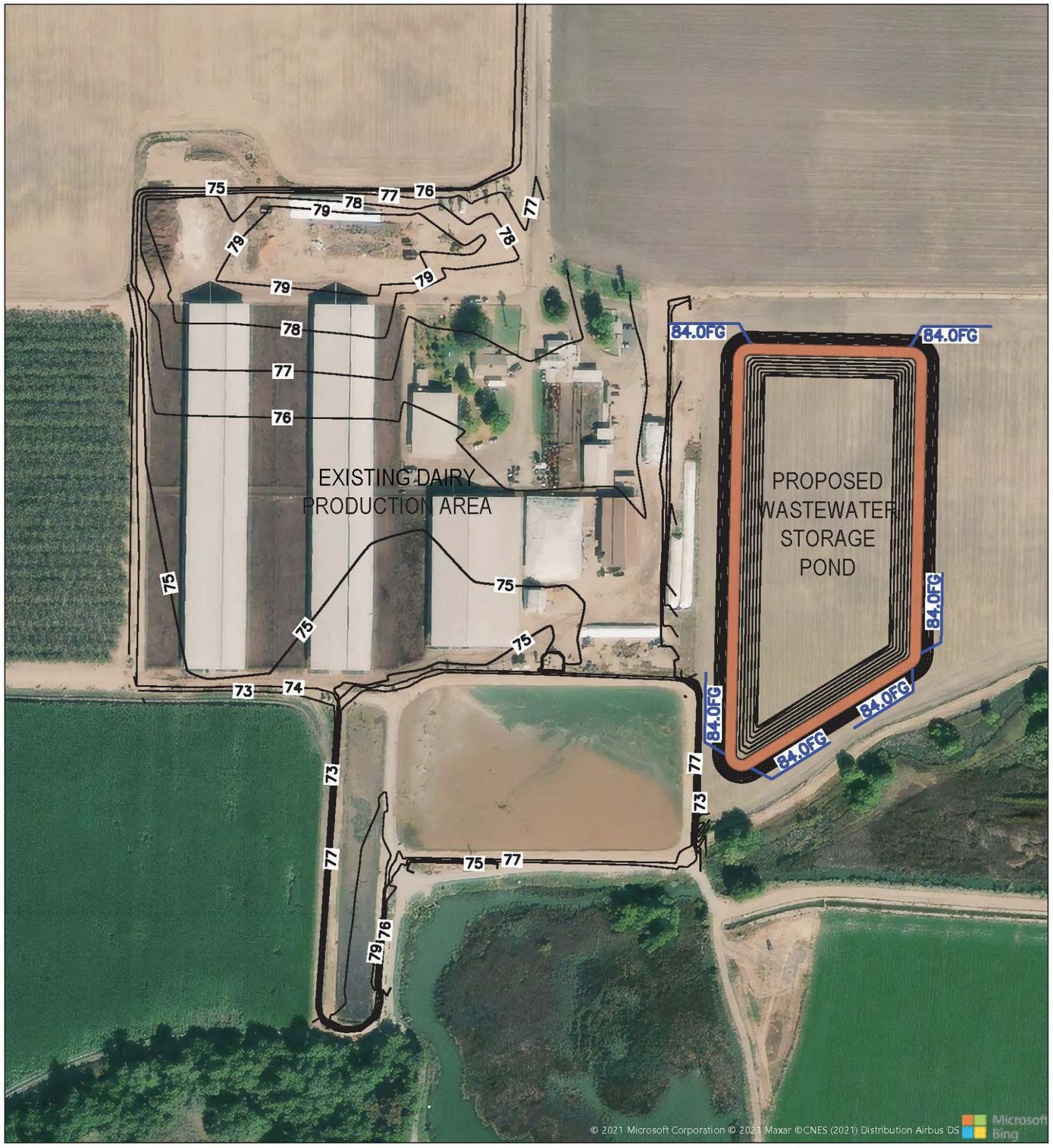
EXHIBIT D
EXISTING TOPOGRAPHY -
EXISTING IMPROVEMENTS
SILVA DAIRY FARMS

MERCED COUNTY, CA

DRAWN BY: MS
DATE: 5/4/2021
FILE: 04_survey.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.



LEGEND

155 — CONTOUR OF THREE–DIMENSIONAL MODEL OF EXISTING SITE IMPROVEMENTS

PROPOSED WASTEWATER STORAGE POND TOP OF EMBANKMENT

139.8FG — PROPOSED FINISHED GRADE ELEVATION

N

SCALE: 1" =200'

0 100 200 400

SHEET 5 OF 5

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EXHIBIT E
CONCEPTUAL GRADING AND FLOOD PROTECTION PLAN
SILVA DAIRY FARMS
MERCED COUNTY, CA

DRAWN BY: MS
DATE: 3/4/2021
FILE: 02_grad.dwg
JOB NO.: 2018-018

SYMBOL	REVISIONS DESCRIPTION	APPD.

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VECTOR CONTROL PLAN
FOR
SILVA DAIRY FARMS
MERCED COUNTY, CA

TABLE OF CONTENTS

1. INTRODUCTION

Vector control is an important aspect of disease prevention and public health. Without proper management, agricultural production facilities can create or enhance opportunities for vectors to develop and proliferate. Certain land management practices can reduce vector populations thereby reducing long–term vector treatment costs, reducing the amount of pesticides used in vector control operations, helping to protect public health, and contributing to an integrated pest management (IPM) approach to vector control.

Integrated Pest Management is an approach that focuses on site–specific, scientifically sound decisions to manage pest populations by matching a wide variety of techniques with the conditions found on site. These techniques are commonly grouped into four categories:

1. Source reduction or physical control—environmental manipulation that results in a reduction of vector development sites.
2. Biological Control—use of biological agents to limit vector populations
3. Chemical Control—larvicides (materials that kill immature larval vectors and mosquitoes) and adulticides (materials that kill adult vectors and mosquitoes)
4. Cultural Control—change the behavior of people so that their actions prevent the development of vectors or the transmission of vector–borne disease.

Through the adoption of these policies and procedures, this Plan will provide an outline to effectively control vectors by physical, cultural, and biological means.

The Vector Reduction Best Management Practices (BMPs) referred to in this document are the recommended land management practices that can provide a reduction in vector populations by various means including: reducing or eliminating breeding areas, increasing the efficacy of biological controls, increasing the efficacy of chemical controls, and improving access for control operations.

While it is generally accepted that vector production from all sources may be reduced through the widespread implementation of vector Reduction BMPs, these policies specifically target the most severe vector problems with the greatest likelihood of responding through the use of BMPs.

2. BEST MANAGEMENT PRACTICES (BMPs)

a. Land Application Areas: for Land Application Areas, the following are areas of concern and recommended BMPs for vector control:

Common Vector Development Areas

- Vegetated ditches
- Seepage or flooding of fallow fields
- Irrigation tail water return sumps
- Blocked ditches or culverts
- Leaky water control structures
- Irrigated pastures
- Low areas caused by improper grading
- Broken or leaky irrigation pipes or valves

Special Concerns

Agricultural practices vary among growers, locations, and conventional or organic production methods. Pesticide regulations can affect the ability to use chemical control. The Best Management Practices below are offered as tools to balance the economic and agronomic requirements of the growers and land owners with the need for effective vector control.

General Vector Reduction Principles

1. Prevent or eliminate unnecessary standing water that stands for more than 72 –96 hours during mosquito season which can start as early as March and extend through October depending on weather.
2. Maintain access for Abatement District staff to monitor and treat mosquito breeding sources.
3. Minimize emergent vegetation and surface debris on the water.
4. Contact the County Department of Environmental Health or Mosquito Abatement District for technical guidance or assistance in implementing vector reduction BMPs.

Vector Reduction BMPs for Land Application Areas

Ditches and Drains

DD-1 Construct or improve ditches with at least 2:1 slopes and a minimum 4-foot bottom. Consider a 3:1 slope or greater to discourage burrowing animal damage, potential seepage problems, and prevent unwanted vegetation growth. Other designs may be approved by the MVCD based on special circumstances.

DD-2 Keep ditches clean and well–maintained. Periodically remove accumulated sediment and vegetation. Maintain ditch grade to prevent areas of standing water.

DD-3 Design irrigation systems to use water efficiently and drain completely to avoid standing water.

Irrigated Pastures

IP-1 Grade field to achieve efficient use of irrigation water. Use NRCS guidelines for irrigated pastures. Initial laser leveling and periodic maintenance to repair damaged areas are needed to maintain efficient water flow.

IP-2 Irrigate only as frequently as is needed to maintain proper soil moisture. Check soil moisture regularly until you know how your pasture behaves

IP-3 Do not over fertilize. Excess fertilizers can leach into irrigation tail water, making mosquito production more likely in ditches or further downstream

IP-4 Apply only enough water to wet the soil to the depth of rooting.

IP-5 Drain excess water from the pasture within 24 hours following each irrigation. This prevents scalding and reduces the number of weeds in the pasture. good check slopes are needed to achieve drainage. A drainage ditch may be used to remove water from the lower end of the field.

IP-6 Inspect fields for drainage and broken checks to see whether re–leveling or reconstruction of levees is needed. Small low areas that hold water can be filled and replanted by hand. Broken checks create cross–leakage that provide habitat for vectors.

IP-7 Keep animals off the pasture while the soil is soft. An ideal mosquito habitat is created in irrigated pastures when water collects in hoof prints of livestock that were run on wet fields or left in the field during irrigation. Keeping animals off wet fields until soils stiffen also protects the roots of the forage crop and prevents soil compaction that interferes with plant growth.

IP-8 Break up pastures into smaller fields so that the animals can be rotated from one field to another. This allows fields to dry between irrigations and provides a sufficient growth period between grazings. It also prevents hoof damage (pugging), increases production from irrigated pastures, and helps improve water penetration into the soil by promoting a better root system.

b. Dairy Production Area (DPA): for the Dairy Production Area, the following are areas of concern and recommended BMPs for vector control:

Common Vector Development Areas
- Wastewater lagoons
- Animal washing areas

- Drain ditches
- Sumps/ponds
- Watering troughs

Special Concerns
Dairy and associated agricultural practices vary; however, these practices need to consider mosquito and vector control issues. The Best Management Practices for Vector Reduction below offer options to balance the requirements of the dairy operators with the need for effective vector control.

General Vector Control Principles
1. Prevent or eliminate unnecessary standing water that remains for more than 72 –96 hours during mosquito season which can start as early as March and extend through October depending on weather.
2. Maintain access for Abatement District staff to monitor and treat mosquito breeding sources.
3. Minimize emergent vegetation and surface debris on the water.
4. Contact the County Department of Environmental Health or Mosquito Abatement District for technical guidance or assistance in implementing vector reduction BMPs.

Vector Reduction BMPs for Dairy Production Area

DA-1 All holding ponds should be surrounded by lanes of adequate width to allow safe passage of vector control equipment. This includes keeping the lanes clear of any materials or equipment (e.g. trees, calf pens, hay stacks, silage, tires, equipment, etc.).

DA-2 If fencing is used around the holding ponds, it should be placed on the outside of the lanes with gates provided for vehicle access.

DA-3 It is recommended that all interior banks of the holding ponds should have a grade of at least 2:1.

DA-4 An effective solids separation system should be utilized such as a mechanical separator or two or more solids separator ponds. If ponds are used, they should not exceed sixty feet in surface width.

DA-5 Drainage lines should not by–pass the separator ponds whenever possible, except those that provide for normal corral run–off and do not contain solids. All drain inlets must be sufficiently graded to prevent solids accumulation.

DA-6 Floating debris should be minimized in all ponds; mechanical agitators may be used to break up crusts.

DA-7 Vegetation should be controlled regularly to prevent emergent vegetation and barriers to access. This includes access lanes, interior pond embankments and any weed growth that might become established within the pond surface.

DA-8 Dairy wastewater discharged for irrigation purposes should be managed so that it does not stand for more than three days.

DA-9 All structures and water management practices should meet current California Regional Water Quality Control Board requirements.

DA-10 Tire sidewalls or other objects that will not hold water should be used to hold down tarps (e.g. on silage piles). Whole tires or other water–holding objects should be replaced.

3. CONTACT INFORMATION

a. Merced County Department of Environmental Health
260 E. 15th St.
Merced, CA 95341
Toll Free: 800-734-7391
Phone: (209)381-1100
Fax: (209) 384-1593

b. Merced County Mosquito Abatement District
3478 Beachwood Drive
P.O. Box 909
Merced, CA 95341
Toll Free: 800-622-3242
Phone: (209) 722-1527
Fax: (209) 722-3051