Well Use: Undetermined

For more information contact:
Department of Water Resources, San Joaquin District
Water Management Section
3374 East Shields Avenue
Fresno, CA 93726

Phone: 559-230-3326
Fax: 559-230-3301

Appendix C: Sozinho Well Log

ORIGINAL
File with DWR 19/22-5
Page ___ of ___
Owner's Well No. ___
Date Work Began 2-28-94 Ended 2-28-94
Local Permit Agency Kings
Permit No. ___ Permit Date ___

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 578874

DWR USE ONLY — STATE WELL NUMBER
STATE WELL POSITION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0	4	Top Soil
4	8	sand
8	19	clay
19	26	sand
26	42	clay
42	48	sand
48	57	clay
57	64	sand
64	70	clay
70	73	sand
73	86	clay
86	90	sand
90	94	clay
94	98	sand
98	105	clay
105	109	sand
109	116	clay
116	120	sand
120	124	clay
124	134	sand
134	136	clay
136	140	sand
140	146	clay
146	155	sand
155	158	clay
158	167	sand
167	187	clay
187	193	sand
193	202	clay
202	206	sand
206	211	clay
211	232	sand
232	236	clay
236	239	sand
239	243	clay
243	247	sand
247	250	clay
250	280	sand
280	282	clay
282	289	sand
289	294	clay
294	298	sand
298	301	clay
301	304	sand
304	308	clay
308	312	sand
312	316	clay
316	323	sand
323	340	clay
340	345	sand
345	375	clay

UNCONFINED

TOTAL DEPTH OF BORING 375 (Feet)
TOTAL DEPTH OF COMPLETED WELL 375 (Feet)

WELL OWNER

Name Joe Sozinho
Mailing Address 11447 - 8 1/2 Ave.
Hanford, CA 93230
CITY STATE ZIP

WELL LOCATION

Address 6/10 mi N of Houston & 400' E of 8 ½ Ave.
City Hanford
County Kings
APN Book Echoc Page 9 Parcel ___
or Township 19 S Range 22 E Section 5
or Latitude ___ DEG MIN SEC NORTH Longitude ___ DEG MIN SEC WEST

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH
Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE

ACTIVITY (✓)

X NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
DairyX Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID Natural

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* May not be representative of a well's long-term yield

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA (Inches)	TYPE (✓) BLANK	SCREEN	OPEN BORE	ALL TYPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	250	24	X				Steel	10.375	3/16	
250	350	24		X			louver	10.375	3/16	.070
350	375	24	X				Steel	10.375	3/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	SAND (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			
50	375				5/16x16

ATTACHMENTS (✓)

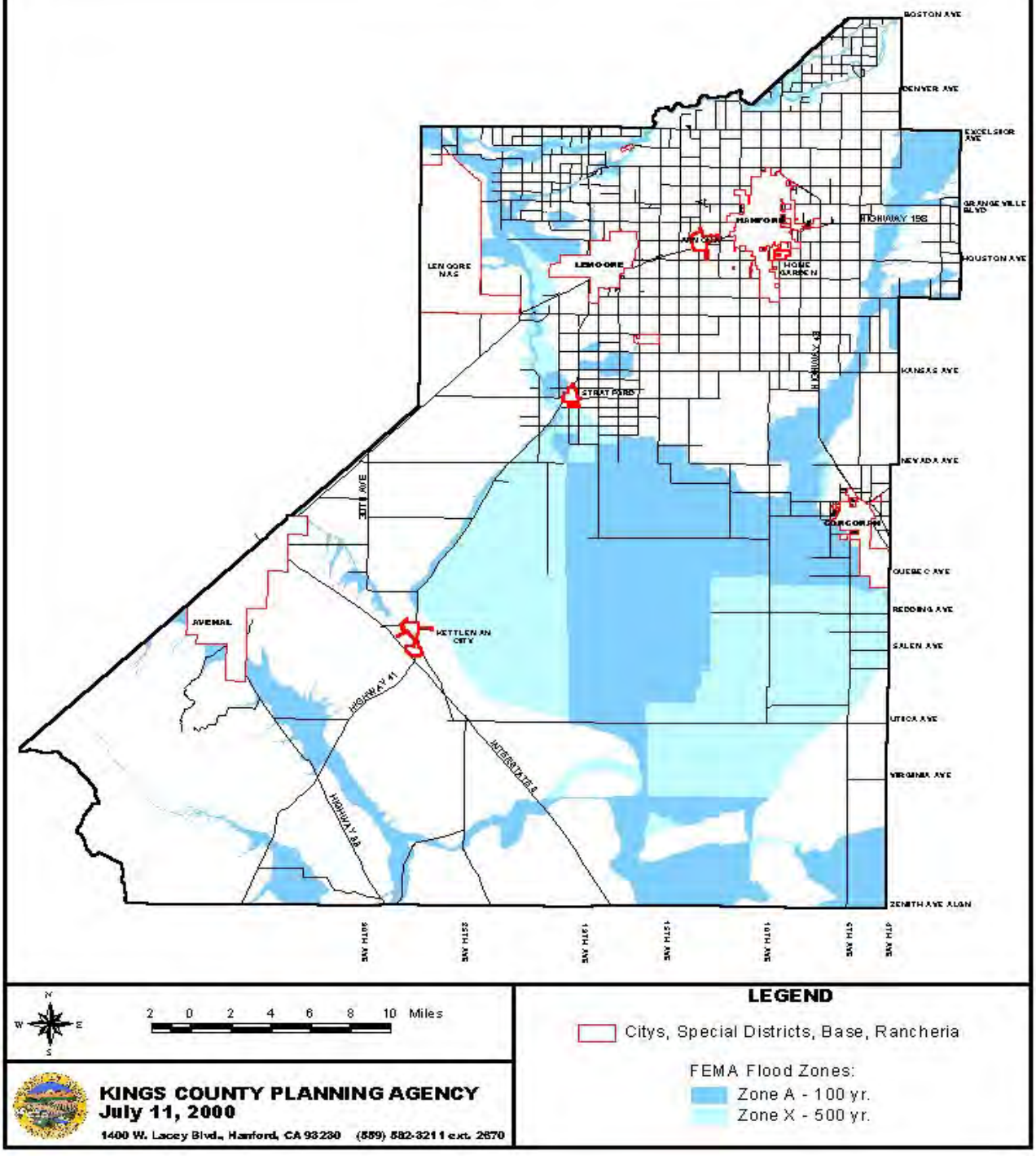
___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

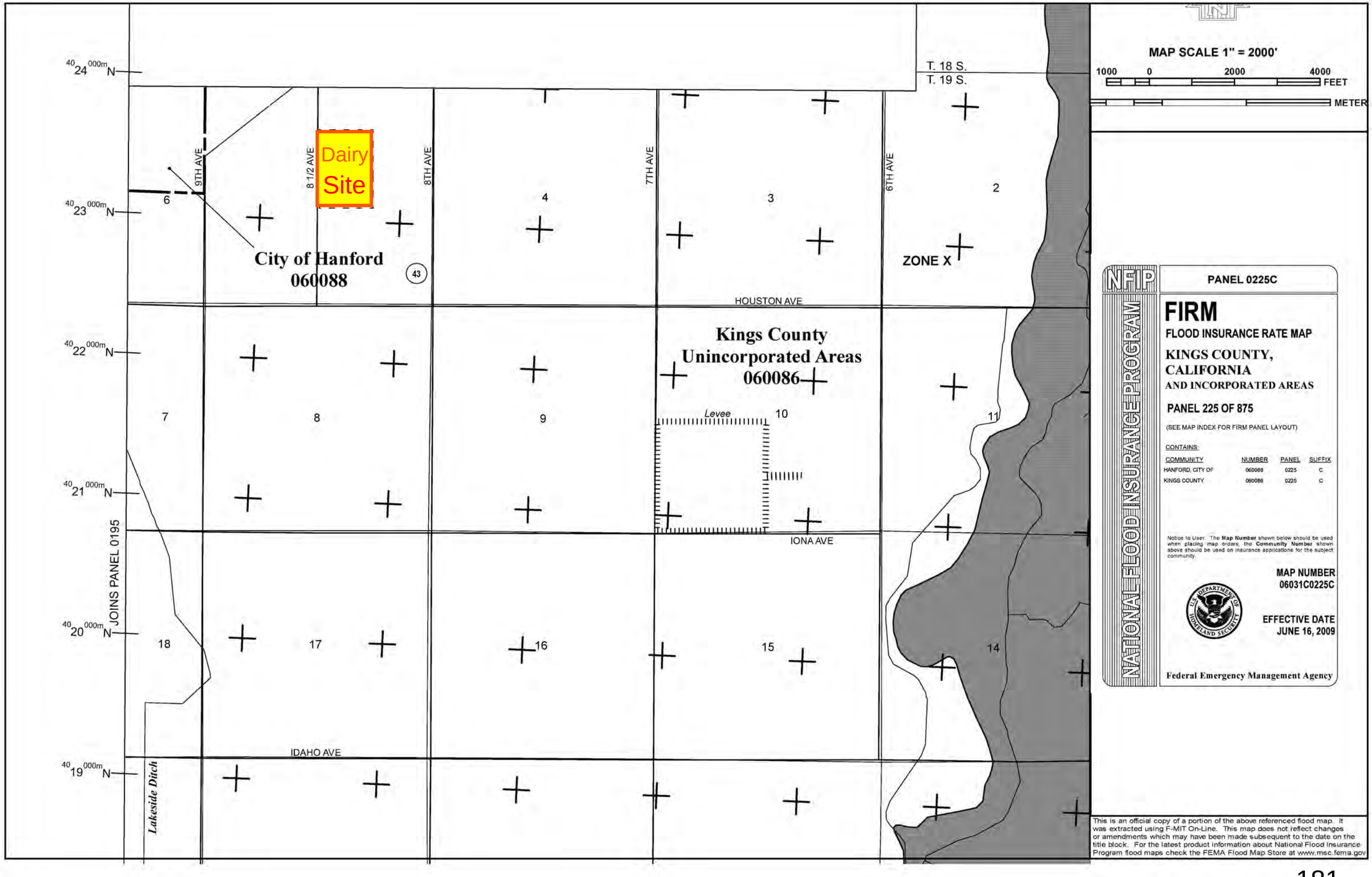
CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME Grabow Well Drilling, inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 12522 9th Ave. Hanford, CA 93230 CITY STATE ZIP
Signed Keith E. Grabow (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 3-2-94 (DATE SIGNED) 288489 (C-57 LICENSE NUMBER)

DWR 188 (REV 7-90) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

FIGURE 5
FEMA Flood Zones




Dairy Site
City of Hanford
060088
Kings County
Unincorporated Areas
060086
ZONE X
Levee
9TH AVE
8 1/2 AVE
8TH AVE
7TH AVE
6TH AVE
HOUSTON AVE
IONA AVE
IDAHO AVE
JOINS PANEL 0195
Lakeside Ditch
T. 18 S.
T. 19 S.
MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
METER
NFIP
PANEL 0225C
FIRM
FLOOD INSURANCE RATE MAP
KINGS COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 225 OF 875
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
HANFORD, CITY OF 060088 0225 C
KINGS COUNTY 060086 0225 C
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
06031C0225C
EFFECTIVE DATE
JUNE 16, 2009
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was California State Plane, Zone III. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the National Geodetic Survey, 2005, Kings County Planning Agency, 2006, and U.S. Geological Survey, 1989. Additional information was photogrammetrically compiled at a scale of 1:12,000 from aerial photography dated 2004.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D Boundary

CBRS and OPA Boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

4276000mE — 1000-meter Universal Transverse Mercator grid values, zone 10

600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone III (FIPSZONE 0403), Lambert Conformal Conic Projection

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL
JUNE 16, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

N

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

600 0 600 1200 METERS

ATTACHMENT 1c

Soils Map and Legends

Soil Boring Map and Logs

Seismic Risk Maps

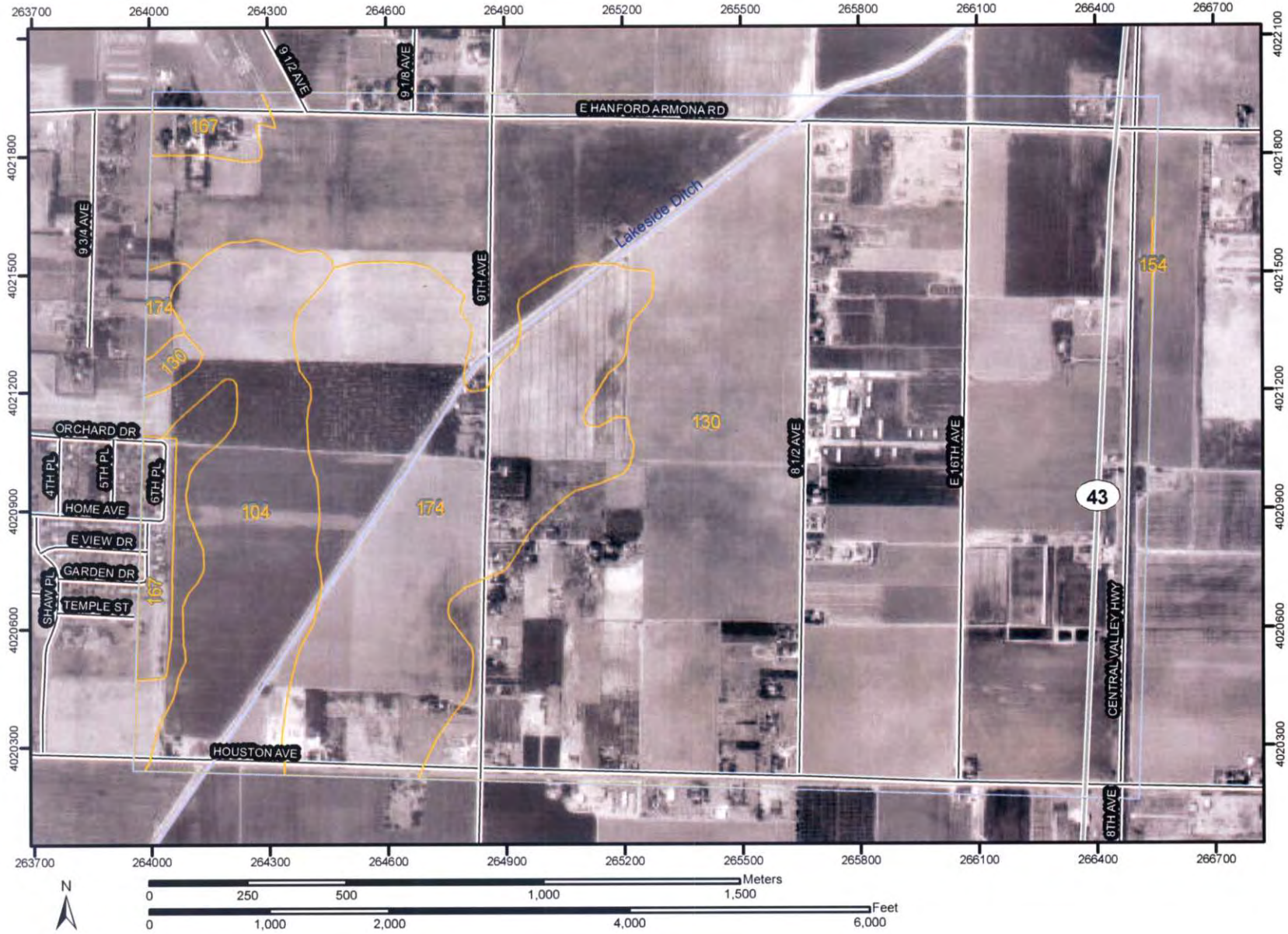
Seismic Zone Description

APPENDICES

Appendix A: Soil Map
Appendix B: Soil Boring Logs

Appendix A: Soil Map

Soil Map–Kings County, California
(Sozinho Dairies)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kings County, California
Survey Area Data: Version 6, Dec 12, 2007

Date(s) aerial images were photographed: 5/10/1994

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Kings County, California (CA031)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
104	Cajon sandy loam	101.3	9.2%
130	Kimberlina fine sandy loam, saline-alkali	793.9	71.9%
154	Pits and Dumps	0.3	0.0%
167	Urban land	24.2	2.2%
174	Wasco sandy loam, 0 to 5 percent slopes	185.3	16.8%
Totals for Area of Interest (AOI)		1,105.0	100.0%

Appendix B: Soil Boring Logs

Approximate Scale: 330 ft.

Boring Location Plan

Sozinho Dairy #1 and #2
Western Dairy Design
Hanford, California

08/07/08

Figure 1

BSK	567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-1*** Sozinho Dairy Hanford, California	**Sheet 1 of 1** **Job Number:** G0819810V **Elevation:**

Driller: BSK Associates	**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA	**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers	**Logged By:** M.Robinson
Borehole Diameter: 8" — **Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	
2	■	21	108	4.9		**Silty SAND (SM)** Brown, fine to medium grained, moist, medium dense		Bulk sample at 0 - 5'
4	■	21	101	6.4				
6							-7.5	
8						**SAND (SP)** Gray, fine to medium grained, moist, loose		
10	⊠	7						
12								
14	■	15					-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		
18								
20								
22								
24								
26								
28								
30								

BSK 567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-2*** Sozinho Dairy Hanford, California	**Sheet 1 of 1**
		Job Number: G0819810V
		Elevation:
Driller: BSK Associates		**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA		**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers		**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	
2		13	99	5.2		**SAND (SP)** Brown, fine to medium grained, moist, medium dense, trace of fines		Bulk sample at 0 - 5' 13% silt and clay content
4		15				. . .little to no fines	-5.5	
6						Boring terminated at 5.5 feet Backfilled with soil cuttings Groundwater not encountered		
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-3

Sozinho Dairy
Hanford, California

Sheet 1 of 1
Job Number: G0819810V
Elevation:

Driller: BSK Associates
Start Date: August 4, 2008
Drill Method: BK-81 w/8" HSA
Finish Date: August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers
Logged By: M.Robinson
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	
2		22	100	6.8		**SAND (SP)** Brown, fine to medium grained, moist, medium dense, trace of fines		Bulk sample at 0 - 5' 15% silt and clay content
4		16				. . .no fines	-5.5	
6						Boring terminated at 5.5 feet Backfilled with soil cuttings Groundwater not encountered		
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								

BSK	567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-4*** Sozinho Dairy Hanford, California	**Sheet 1 of 1** **Job Number:** G0819810V **Elevation:**
Driller: BSK Associates			**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA			**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers			**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered		**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
						Dry loose soil	0	
0						**Silty SAND (SM)**		
2		32				Brown, fine grained with clay, moist, medium dense		Bulk sample at 0 - 5'
4		12	91	14.5		. . .medium dense		
6								
8								
10		22				. . .fine to medium dense, decrease in fines, no clay		
12							-12.5	
14		19	106	5.5		**SAND (SP)** Brown, fine to medium grained, moist, medium dense		Bulk sample at 15 - 20'
16		37				. . .no fines		
18								
20		49				. . .increase in fines, trace clay	-21.5	
22		43	100	12.0		**Sandy SILT (ML)** Gray, fine grained sand, moist, hard	-23.5	
24		56				**SAND (SP)** Gray, fine to medium grained, moist, very dense		
26								
28								
30		53					-30.5	
32						Boring terminated at 30.5 feet Backfilled with soil cuttings Groundwater not encountered		
34								

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-5

Sozinho Dairy
Hanford, California

Sheet 1 of 1
Job Number: G0819810V
Elevation:

Driller: BSK Associates
Start Date: August 4, 2008
Drill Method: BK-81 w/8" HSA
Finish Date: August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers
Logged By: M.Robinson
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
						Dry loose soil	0	
0						**Silty SAND (SM)**		
2		49				Brown, fine to medium grained with trace of clay, moist, dense		Bulk sample at 0 - 5'
4		15	101	12.1		. . .medium dense		
6							-7.5	
8						**SAND (SP)**		
10		26	100	2.8		Yellow brown, fine to medium grained, moist, medium dense		
12							-12.5	
14		25	106	14.6		**Silty SAND (SM)**		Bulk sample at 13 - 16'
16		36				Olive gray, fine to medium grained, moist	-16.5	
18						**Sandy SILT (ML)**		
20		35				Olive gray, fine grained sand, moist, hard		
22		33					-22	
24		35				**SAND (SP)**		
26						Yellow brown, fine grained, moist, dense		
28						. . .fine to medium grained		
30		37				. . .gray, fine grained	-30.5	
32						Boring terminated at 30.5 feet		
34						Backfilled with soil cuttings		
						Groundwater not encountered		

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-6

Sozinho Dairy
Hanford, California

Sheet 1 of 1
Job Number: G0819810V
Elevation:

Driller: BSK Associates
Start Date: August 4, 2008
Drill Method: BK-81 w/8" HSA
Finish Date: August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers
Logged By: M.Robinson
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
						Dry loose soil	0	
0						**Sandy SILT (ML)**		
2		25	101	10.0		Brown, fine to medium grained, moist, medium dense		45% silt and clay content
4		15	95	23.4		. . .brown, fine grained sand, moist		
6								
8						. . .6" clean yellow brown sand		
10		10						
12						. . .increase in fine grained sand	-12.5	
14		36				**Silty SAND (SM)** Olive gray, fine to medium grained, moist		
16							-17.5	
18						**Sandy SILT (ML)**		
20		20				Olive gray, lenses of fine to medium grained silty sand, moist, very stiff	-20.5	
22						Boring terminated at 20.5 feet Backfilled with soil cuttings Groundwater not encountered		
24								
26								
28								
30								
32								
34								

BSK 567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-7*** Sozinho Dairy Hanford, California	**Sheet 1 of 1**
		Job Number: G0819810V
		Elevation:
Driller: BSK Associates		**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA		**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers		**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	Bulk sample at 0 - 5'
2		28	104	9.5		**Sandy SILT (ML)** Gray brown, fine to medium grained, moist, medium dense		46% silt and clay content
4		12	102	18.0		. . .brown, increase in fines		
6							-7.5	
8						**SAND (SP)** Gray brown, fine to medium grained, moist, medium dense		
10		22	92	6.3				
12							-12.5	
14		24				**Sandy SILT (ML)** Olive brown, fine grained sand with trace clay, moist, very stiff		
16								
18								
20		37	101	20.6			-20.5	
22						Boring terminated at 20.5 feet Backfilled with soil cuttings Groundwater not encountered		
24								
26								
28								
30								
32								
34								

BSK 567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-8*** Sozinho Dairy Hanford, California	**Sheet 1 of 1**
		Job Number: G0819810V
		Elevation:
Driller: BSK Associates		**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA		**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers		**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	Bulk sample at 0 - 5'
2		21	110	4.8		**SAND (SP)** Gray brown, fine to medium grained, moist, medium dense		
4		21	91	2.9		. . .no fines		
10		10						
14		23					-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-9

Sozinho Dairy
Hanford, California

Sheet 1 of 1
Job Number: G0819810V
Elevation:

Driller: BSK Associates
Start Date: August 4, 2008
Drill Method: BK-81 w/8" HSA
Finish Date: August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers
Logged By: M.Robinson
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	Bulk sample at 0 - 5'
2	■	26	99	13.6		**Silty SAND (SM)** Dark olive gray, fine to medium grained with trace clay, moist, medium dense		
4	■	38				. . .dense		
6							-7.5	
8						**SANDY (SP)** Yellow brown, fine to medium grained, moist, medium dense		
10	■	17						
12								
14	⊠	7				. . .loose	-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		
18								
20								
22								
24								
26								
28								
30								
32								
34								

BSK	567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-10*** Sozinho Dairy Hanford, California	**Sheet 1 of 1** **Job Number:** G0819810V **Elevation:**

Driller: BSK Associates		**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA		**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers		**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	Bulk sample at 0 - 5'
2	■	20				**SAND (SP)** Brown, fine to medium grained, moist, medium dense, trace fines		
4	■	15	97	6.6			-5	
6						**Silty SAND (SM)** Brown, fine to medium grained, clay present, moist, medium dense	-8	
8						**SAND (SP)** Gray, fine to medium grained, moist, medium dense		
10	⊠	10						
12								
14	■	15					-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		
18								
20								
22								
24								
26								
28								
30								
32								
34								

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-11

Sozinho Dairy
Hanford, California

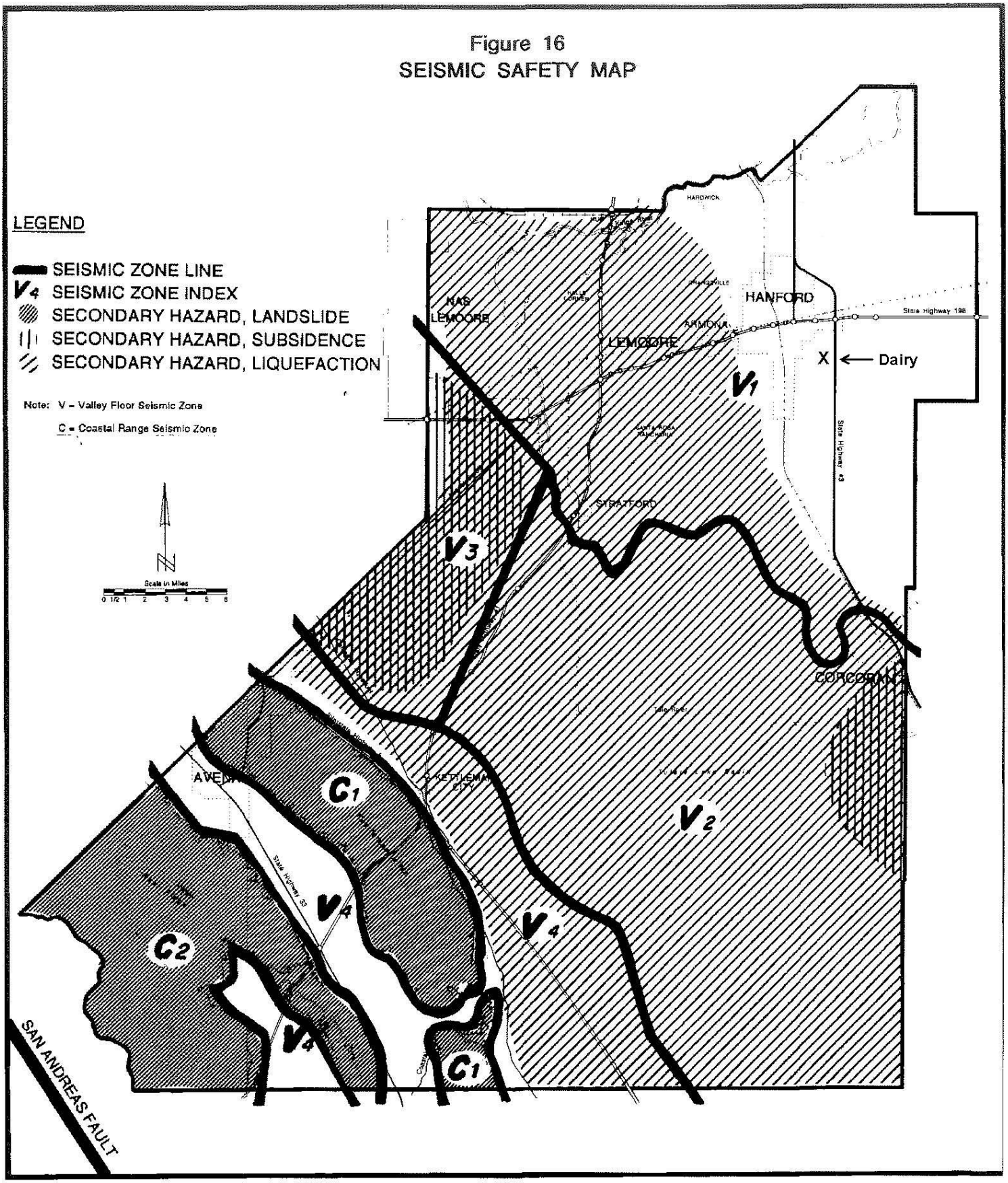
Sheet 1 of 1
Job Number: G0819810V
Elevation:

Driller: BSK Associates
Start Date: August 4, 2008
Drill Method: BK-81 w/8" HSA
Finish Date: August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers
Logged By: M.Robinson
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	
2	■	16	97	17.8		**Silty SAND (SM)** Brown, fine to medium grained, moist, medium dense	-3	
4	■	23	99	5.7		**SAND (SP)** Gray, fine to medium grained, moist, medium dense	-7.5	
8	⊠	10				**Silty SAND (SM)** Brown, fine to medium grained, moist, medium dense	-12.5	
14	■	38				**Sandy SILT (ML)** Olive brown, fine grained sand, trace clay, moist, hard	-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		

BSK 567 W. Shaw Ave. Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	***Log of Boring B-12*** Sozinho Dairy Hanford, California	**Sheet 1 of 1**
		Job Number: G0819810V
		Elevation:
Driller: BSK Associates		**Start Date:** August 4, 2008
Drill Method: BK-81 w/8" HSA		**Finish Date:** August 4, 2008
Sample Method: 2.4"I.D.Cal.Mod.& 1/4"I.D.SPT Samplers		**Logged By:** M.Robinson
Borehole Diameter: 8"	**Water Level:** Not encountered	**Checked By:** L.Suehiro

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						Dry loose soil	0	Bulk sample at 0 - 5'
2		25	93	4.9		**Silty SAND (SM)** Brown, fine grained, moist, medium dense		
4		26						
6								
8							-9.5	
10		23				**SAND (SP)** Yellow gray, fine to medium grained, moist, medium dense		
12								
14		22					-15.5	
16						Boring terminated at 15.5 feet Backfilled with soil cuttings Groundwater not encountered		
18								
20								
22								
24								
26								
28								
30								
32								
34								



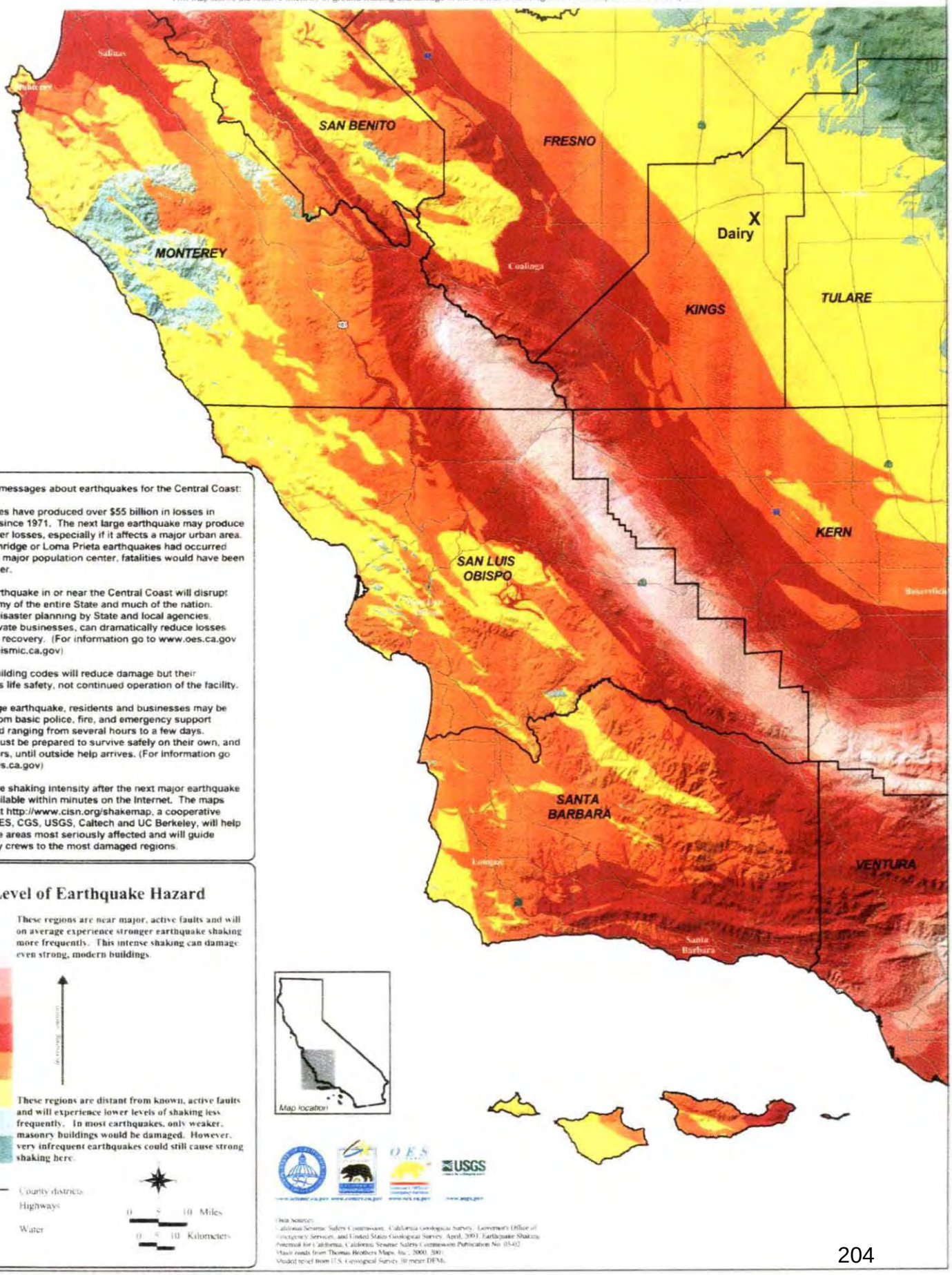
Seismic Safety Map of Kings County from Kings County General Plan showing Location of Gaspar Dairy

Earthquake Shaking Potential for the Central Coast Region

Counties

Summer, 2003

This map shows the relative intensity of ground shaking and damage in the Central Coast Region from anticipated future earthquakes.



Important messages about earthquakes for the Central Coast:

- Earthquakes have produced over $55 billion in losses in California since 1971. The next large earthquake may produce even greater losses, especially if it affects a major urban area. If the Northridge or Loma Prieta earthquakes had occurred closer to a major population center, fatalities would have been much higher.
- A large earthquake in or near the Central Coast will disrupt the economy of the entire State and much of the nation. Effective disaster planning by State and local agencies, and by private businesses, can dramatically reduce losses and speed recovery. (For information go to www.oes.ca.gov or www.seismic.ca.gov)
- Current building codes will reduce damage but their objective is life safety, not continued operation of the facility.
- After a large earthquake, residents and businesses may be isolated from basic police, fire, and emergency support for a period ranging from several hours to a few days. Citizens must be prepared to survive safely on their own, and to aid others, until outside help arrives. (For information go to www.oes.ca.gov)
- Maps of the shaking intensity after the next major earthquake will be available within minutes on the Internet. The maps available at http://www.cisn.org/shakemap, a cooperative effort of OES, CGS, USGS, Caltech and UC Berkeley, will help identify the areas most seriously affected and will guide emergency crews to the most damaged regions.

Level of Earthquake Hazard

These regions are near major, active faults and will on average experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings.

These regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.

County districts

Highways

Water

0 5 10 Miles

0 5 10 Kilometers

Data sources:
California Seismic Safety Commission, California Geological Survey, Governor's Office of Emergency Services, and United States Geological Survey, April, 2003. Earthquake Shaking Potential for California, California Seismic Safety Commission Publication No. 03-02
Vault roads from Thomas Brothers Maps, Inc., 2000, 2001.
Shaded relief from U.S. Geological Survey 30 meter DEMs.

Seismic Zone Description

Seismic Zone	Generalized Geologic Formations	Amplification of Shaking
V1[1]	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex.	Amplification of shaking that would affect low to medium-rise structures is relatively high but the distance to either of the fault systems that are expected sources of the shaking is sufficiently great that the effect should be minimal.
V2[1]	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex.	Amplification of shaking that would affect low to medium-rise structures is low and the distance to the San Andrea fault zone is moderate. The combined effect is that shaking is expected to be minimal.
V3[1]	Thick section of marine and continental sedimentary deposits.	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but the moderate proximity of the San Andrea fault zone results in a moderate increase in expected shaking over that for the east side of the valley.
V4[1]	Thick section of consolidated sedimentary units overlain by thick unconsolidated alluvial fan deposits.	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but its moderately close proximity to the San Andrea fault zone results in the expectation of moderately high shaking characteristics.
C1[2]	Thick section of consolidated sedimentary units, with a high frequency of exposure.	Amplification of shaking is low because of the firm nature of the surface in this area. But because of its close proximity to the San Andrea fault zone, the combination results in moderate to high shaking characteristics.
C2[2]	Moderately thick section of marine sedimentary rock unit with a high frequency of exposure throughout the area, with some metamorphics locally, which are of minor importance.	Amplification is low, but the close proximity of the San Andrea fault zone should result in moderate to high shaking characteristics.

[1] Valley Floor Seismic Zone Source: 1974 Five County Seismic Safety Element
[2] Coastal Range Seismic Zone

ATTACHMENT 1d

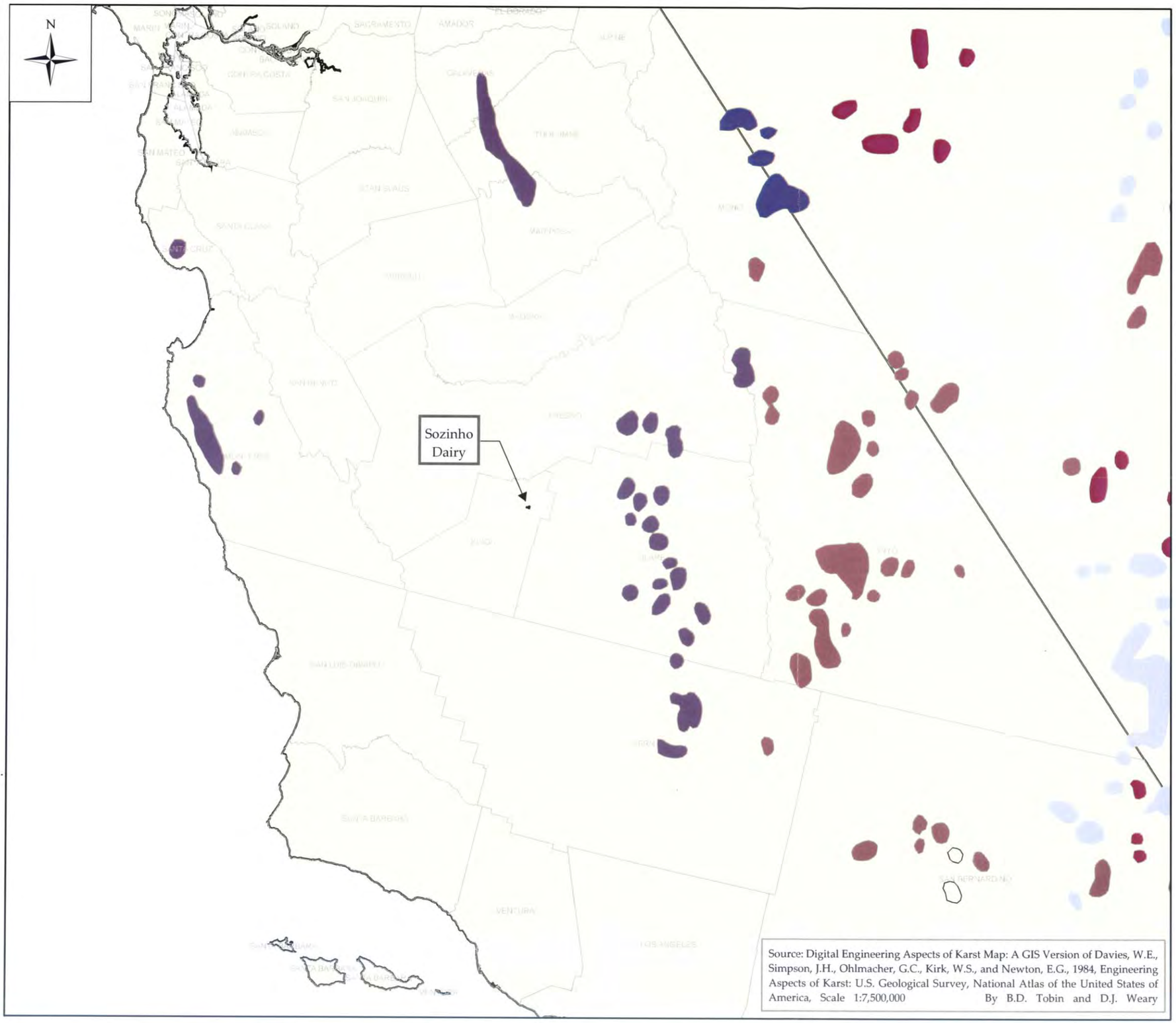
Karst Map

Well Locations Map

Karst Map

Partial View of the Karst Map
of the United States.

Sozinho Dairy
and Land Application Fields.



LEGEND

- Sozinho Dairy & Fields
- CA Counties
- United States

Karst Formations

K_TYPE

- absent_1
- absent_2
- absent_3
- long_1
- long_2
- long_3
- long_4
- long_5
- long_6
- no_geol
- pseudo_1
- pseudo_2
- pseudo_3
- pseudo_4
- short_1
- short_10
- short_2
- short_3
- short_4
- short_5
- short_6
- short_7
- short_8
- short_9

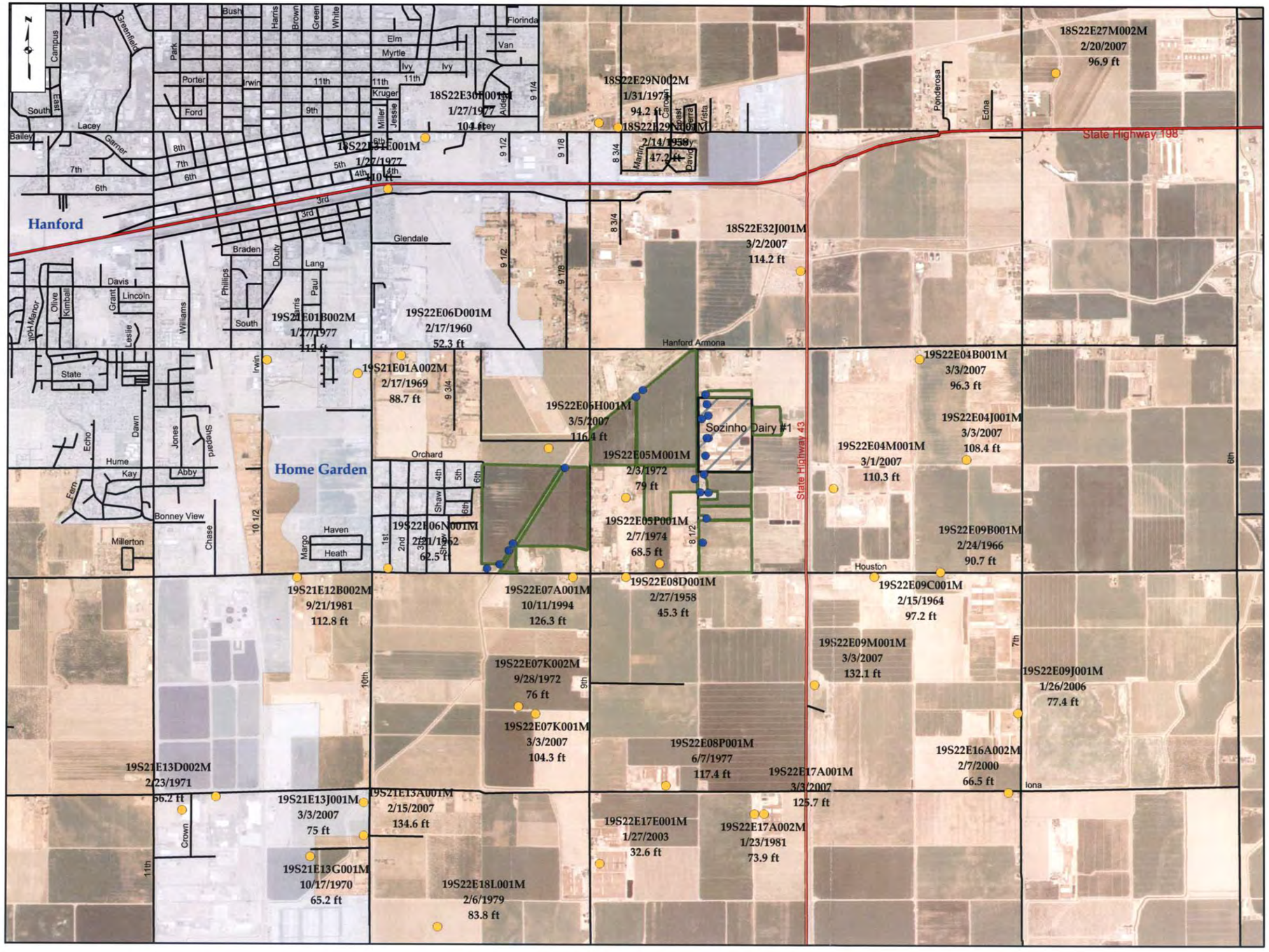
Source: Digital Engineering Aspects of Karst Map: A GIS Version of Davies, W.E., Simpson, J.H., Ohlmacher, G.C., Kirk, W.S., and Newton, E.G., 1984, Engineering Aspects of Karst: U.S. Geological Survey, National Atlas of the United States of America, Scale 1:7,500,000 By B.D. Tobin and D.J. Weary

0 15 30 60 90 120 Miles

Sozinho Dairy

Kings Co.

DWR Well Map



LEGEND

- Sozinho Dairy
- Land Application Fields
- Sozinho Dairy Wells
- DWR_Wells
- SJV_Roads
- State_Highways
- Cities

DWR Information is the DWR well number, date of last reading, and depth to groundwater during the last reading.

0 0.3 0.6 1.2 1.8 2.4 Miles

Aerial photo provided by USDA-NAIP and taken in July 2006.

All well and field information provided on this map was current as of July 2009. Modifications to the site may be necessary to accommodate the expansion. However, this does not impact the intent of this map.

Prepared By
JMLord, Inc.
July 2009

ATTACHMENT 1e

Faxed Letter from DOGGR

State of California
Department of Conservation
Division of Oil, Gas & Geothermal Resources
466 North 5th Street Coalinga, CA 93210

(559) 935-2941...Phone *(559) 935-5154...Fax*

Fax

To: Jeff Fleming **From:** Glenn Muggelberg

Fax: (209) 848-8654 **Pages:** 3 (Including cover)

Phone: **Date:** 6-11-08

RE: **CC:**

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• **Comments:**

STATE OF CALIFORNIA, RESOURCES AGENCY ARNOLD SCHWARZENEGGER, GOVERNOR

DEPARTMENT OF CONSERVATION

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

466 N. Fifth Street • Coalinga, CALIFORNIA 93210

PHONE 559/935-2941 • FAX 559/935-5154 • WEB SITE conservation.ca.gov

June 11, 2008

Jeff Fleming
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

RE: Sozinho Dairy #1, 11447 8½ Ave., Hanford, CA 93230
Sections 5 and 6, Township 19S, Range 22E, MDB&M

On June 11, 2008, you requested information on any oil or gas wells within the above property. I have reviewed our maps and database and find no record of any oil or gas wells located on or within 500' of the property.

Sincerely,

Glenn W. Muggelberg
Associate Oil & Gas Engineer

STATE OF CALIFORNIA, RESOURCES AGENCY ARNOLD SCHWARZENEGGER, GOVERNOR

DEPARTMENT OF CONSERVATION

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

466 N. Fifth Street • Coalinga, CALIFORNIA 93210

PHONE 559/935-2941 • FAX 559/935-5154 • WEB SITE conservation.ca.gov

June 11, 2008

Jeff Fleming
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

RE: Sozinho Dairy #3, 11235 8½ Ave., Hanford, CA 93230
Section 5, Township 19S, Range 22E, MDB&M

On June 11, 2008, you requested information on any oil or gas wells within the above property. I have reviewed our maps and database and find no record of any oil or gas wells located on or within 500' of the property.

Sincerely,

Glenn W. Muggelberg
Associate Oil & Gas Engineer

ATTACHMENT 2a

25-year, 24-hour Rainfall Map

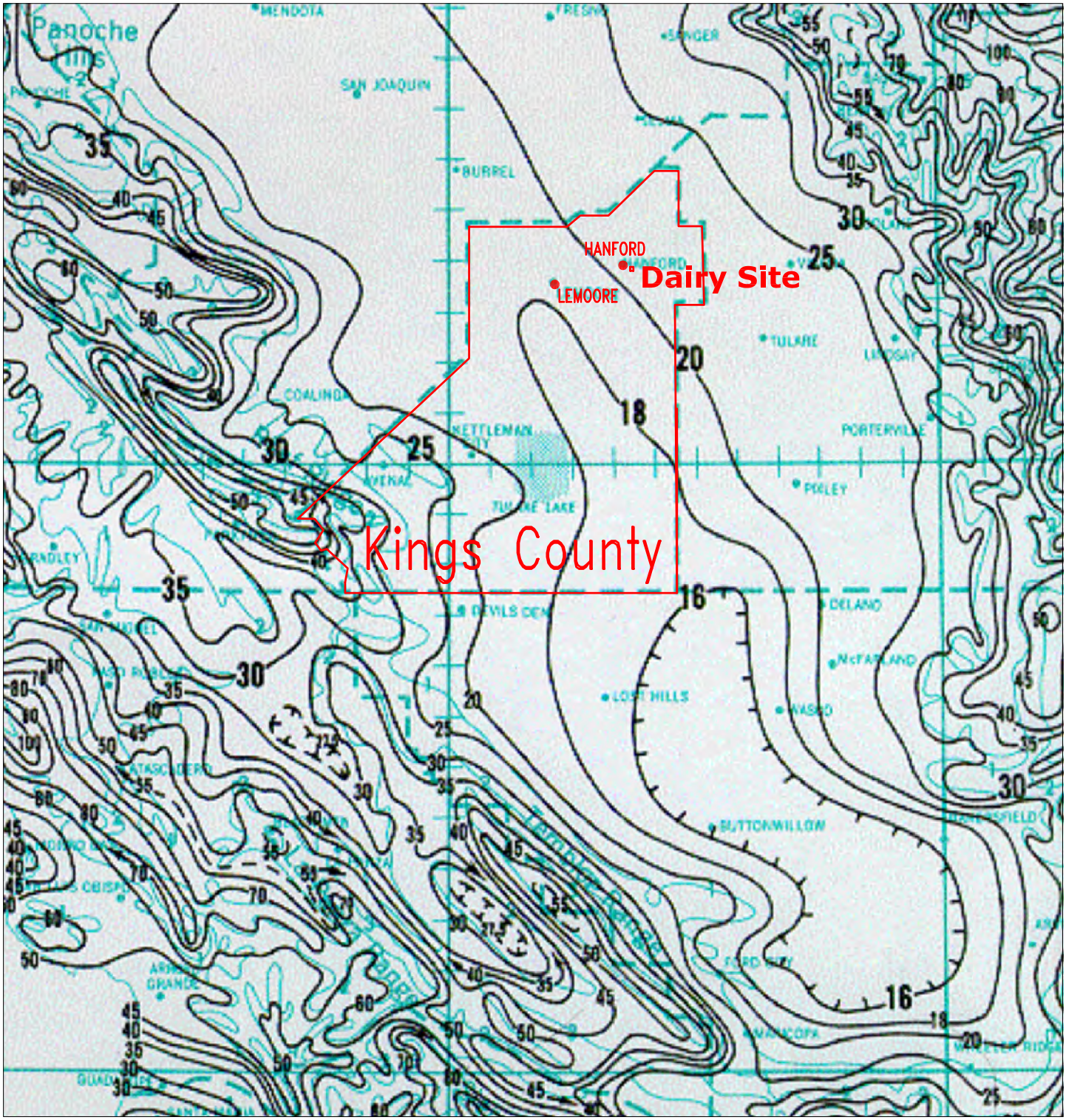
Manure/Nutrient Production Chart

Nutrient water Storage Volume Calculation

Solid Manure Removal Log

Initial Soil Sample Locator Map

Initial Soil Samples Analysis Results



This is a 25-year, 24-hour storm map for Kings County, taken from NOAA Atlas 2, volume XI. Isopluvials are in tenths of an inch.

0 10 20 30 40 50
Scale in Miles

Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, California 95361
209-848-8674
FAX: 209-848-8654

Owner:
Sozinho Dairy #1
11447 8 1/2 Ave.
Hanford, CA 93230

Site:
Sozinho Dairy #1
11447 8 1/2 Ave.
Hanford, CA 93230

25-year, 24-Hour Rainfall at Sozihno Dairy Site: 2.2 inches

Date: 7-28-2008

25-year 24 Hour Rainfall (Tenths of Inch) Attachment 2a

Corrals & Flushed Lanes

Dairy Facility Manure Nutrient Production Chart

Type oF Cow
- ○ Jersey
- ○ Guernsey
- ◉ Holstein

# of Cows		AU Factor	Weighted # AU's	Manure Effluent Production per day: lb/day	cubic ft./day	gal/day		Nutrient Content (lb/day): Nitrogen	PO	K
# Lactating Cows	150	1.40	210	17,220	277	2,079	5% @ parlor	86	35	68
# Dry Cows	105	1.12	118	9,643	155	1,164		48	20	38
# Bred Heifers	180	1.02	184	15,055	242	1,818		75	30	60
# Heifers 1yr. - bred	-	1.02	-	-	-	-		-	-	-
# Calves 3mon- 1yr	182	0.49	89	7,313	118	883		37	15	29
# Baby Calves	-	0.29	-	-	-	-		-	-	-
Totals	617		600	49,231	793	5,944		246	100	195

Settling pond effluent: 40 **% Solids**

Manure Solids & Manure Effluent Volumes	(gals/day)
Manure Effluent collected in summer (ref. 1)	3,504
Manure Effluent collected in winter (ref. 4)	3,504
Scraped manure solids in summer(ref. 1)	297
Scraped manure solids in Winter (ref. 3)	237
Milk Parlors Effluent (ref. 8)	104

Summer Waste	
Total solids: 12.7% of flushed effluent collected	445
Settling pond solids: 80% of total solids	356
Solids into lagoon: 20% of total solids	89
Total liquids: 87.3% of flushed effluent collected	3,059
Liquids retained in settling pond: solids settled @ 60% moisture	534
Effluent stored in lagoon: Total collected effluent less volume at settling pond	2,525

Winter Waste	
Total solids: 12.7% of flushed effluent collected	504
Settling pond solids: 80% of total solids	403
Solids into lagoon: 20% of total solids	101
Total liquids: 87.3% of flushed effluent collected	3,000
Liqs retained in settling pond: solids settled @ 60% moisture	605
Effluent stored in lagoon: Total collected effluent less volume at settling pond	2,394

Volume Summer:	Nutrient Lagoon Storage		Settling Pond Storage	
Solids:	89	gals/day	356	gals/day
Liquids:	2,525	gals/day	534	gals/day
Totals:	2,614	gals/day	890	gals/day

VolumeWinter:	Nutrient Lagoon Storage		Settling Pond Storage	
Solids:	101	gals/day	403	gals/day
Liquids:	2,394	gals/day	605	gals/day
Totals:	2,495	gals/day	1,009	gals/day

Manure Distribution:

Summer & Winter- 5% of lactating cow manure is deposited at parlors

ref. 1 (Total manure solids- 5%)x 40% in corrals & scraped

ref. 2 (Total manure effluent -5%)x 60% flushed from feed alleys to settling ponds

ref. 3 (Total manure Solids- 5%) x 12.7% = solids x 40% in corrals less 20% carried back to flush by rainfall

ref. 4 (Total manure effluent- 5%) x 60% flushed from feed alleys plus 20% of manure solids carried back to flush alley by rainfall

ref. 5 Settling Ponds Summer & Winter

Solids- Manure effluent (ref. 2 / ref. 4) x 12.7% solids x 80% retention of solids.

Liquids- volume solids / 40%= liquids (60%)

ref. 6 Nutrient Lagoon Summer & Winter

Solids- Manure effluent (ref. 2 / ref. 4) x 12.7% = solids x 20% from settling pond

Liquids- Total manure solids - 5% (parlor) x 87.3% liquids retained in settling pond.

Ref. 7 Irrigation Pond Storage for parlor water that is fairly clean. This water is recyled to crop irrigation.

Summer- Barn water gallons (ref. "Milk Parlor Water-Summer" work sheet) + 5% of solids from lactating cows + parlor's roof rainwater runoff

Winter- Barn water gallons (ref. "Milk Parlor Water- Winter" work sheet) Note: no sprinkler washing of lactating cow at parlors in freezing weather. Estimated to be days. 5 days each for the months Nov. Dec. Jan. and February

Ref. 8- Milk Parolr's effluent: Lactating cow and hospital cow milking parlor waters are diverted and deposited direclty to the irrigation pond. It is estimated that 5% of

the total manure production from the lactating cows only, are relieved at the parlors and deposited directly to the irrigation pond. Manure from lactating cows: 49,396 gals/day x 5% = 2,495 gals/day

Freestall flush

Dairy Facility Manure Nutrient Production Chart

Type oF Cow
- ○ Jersey
- ○ Guernsey
- ◉ Holstein

# of Cows		AU Factor		Manure Effluent Production per day: Weighted # AU's	lb/day	cubic ft./day	gal/day		Nutrient Content (lb/day): Nitrogen	PO	K
# Lactating Cows	900		1.40	1,260	103,320	1,663	12,474	5% @ parlor	517	209	410
# Dry Cows	-		1.12	-	-	-	-		-	-	-
# Bred Heifers	84		1.02	86	7,026	113	848		35	14	28
# Heifers 1yr. - bred	-		1.02	-	-	-	-		-	-	-
# Calves 3mon- 1yr	-		0.49	-	-	-	-		-	-	-
# Baby Calves	445		0.29	131	10,728	173	1,295		54	22	43
Totals	1,429			1,477	121,074	1,949	14,617		605	245	480

Manure Solids & Manure Effluent Volumes

(gals/day)

Manure Effluent collected in summer (ref. 1)	11,195
Manure Effluent collected in winter (ref. 4)	12,594
Scraped manure solids in summer(ref. 1)	355
Scraped manure solids in Winter (ref. 3)	142
Milk Parlors Effluent (ref. 8)	624

Settling pond effluent: 40 **% Solids**

Summer Waste		Winter Waste	
Total solids: 12.7% of flushed effluent collected	1,422	**Total solids: 12.7% of flushed effluent collected**	1,457
Settling pond solids: 80% of total solids	1,137	**Settling pond solids: 80% of total solids**	1,166
Solids into lagoon: 20% of total solids	284	**Solids into lagoon: 20% of total solids**	291
Total liquids: 87.3% of flushed effluent collected	9,773	**Total liquids: 87.3% of flushed effluent collected**	9,738
Liquids retained in settling pond: solids settled @ 60% moisture	1,706	**Liqs retained in settling pond: solids settled @ 60% moisture**	1,749
Effluent stored in lagoon: Total collected effluent less volume at settling pond	8,067	**Effluent stored in lagoon: Total collected effluent less volume at settling pond**	7,989

Volume Summer:	Nutrient Lagoon Storage		Settling Pond Storage	
Solids:	284	**gals/day**	1,137	**gals/day**
Liquids:	8,067	**gals/day**	1,706	**gals/day**
Totals:	8,351	**gals/day**	2,844	**gals/day**

VolumeWinter:	Nutrient Lagoon Storage		Settling Pond Storage	
Solids:	291	**gals/day**	1,166	**gals/day**
Liquids:	7,989	**gals/day**	1,749	**gals/day**
Totals:	8,280	**gals/day**	2,915	**gals/day**

Manure Distribution:

Summer & Winter- 5% of lactating cow manure is deposited at parlors

ref. 1 (Total manure solids- 5%)x 80% in freestalls flushed to settling pond.

ref. 2 (Total manure effluent -5%)x 20% in corrals and scraped

ref. 3 (Total manure Solids- 5%) x 12.7% = solids x 40% in corrals less 20% carried back to flush by rainfall

ref. 4 (Total manure effluent- 5%) x 90% flushed from freestalls plus 20% of manure solids carried back to flush alley by rainfall

ref. 5 Settling Ponds Summer & Winter

Solids- Manure effluent (ref. 2 / ref. 4) x 12.7% solids x 80% retention of solids.

Liquids- volume solids / 40%= liquids (60%)

ref. 6 Nutrient Lagoon Summer & Winter

Solids- Manure effluent (ref. 2 / ref. 4) x 12.7% = solids x 20% from settling pond

Liquids- Total manure solids - 5% (parlor) x 87.3% liquids retained in settling pond.

Ref. 7 Irrigation Pond Storage for parlor water that is fairly clean. This water is recyled to crop irrigation.

Summer- Barn water gallons (ref. "Milk Parlor Water-Summer" work sheet) + 5% of solids from lactating cows + parlor's roof rainwater runoff

Winter- Barn water gallons (ref. "Milk Parlor Water- Winter" work sheet) Note: no sprinkler washing of lactating cow at parlors in freezing weather. Estimated to be days. 5 days each for the months Nov. Dec. Jan. and February

Ref. 8- Milk Parolr's effluent: Lactating cow and hospital cow milking parlor waters are diverted and deposited direclty to the irrigation pond. It is estimated that 5% of

the total manure production from the lactating cows only, are relieved at the parlors and deposited directly to the irrigation pond. Manure from lactating cows: 49,396 gals/day x 5% = 2,495 gals/day

Scrape

Dairy Facility Manure Nutrient Production Chart

Type oF Cow
- Jersey
- Guernsey
- Holstein

# of Cows		AU Factor	Weighted # AU's	Manure Production per AU: lb/day	cubic ft./day	gal/day		Nutrient Content (lb/day) per AU: Nitrogen	Phosphorous	Potassium
# Lactating Cows	600	1.40	840	68,880	1,109	8,316	5% @ parlor	344	139	273
# Dry Cows	164	1.12	184	15,062	242	1,818		75	30	60
# Bred Heifers	608	1.02	620	50,853	819	6,140		254	103	202
# Heifers 1yr. - bred	291	1.02	297	24,339	392	2,939		122	49	96
# Calves 3mon- 1yr	1,271	0.49	623	51,069	822	6,166		255	103	202
# Baby Calves	136	0.29	40	3,279	53	396		16	7	13
Totals	3,070		2,603	213,482	3,437	25,774		1,067	432	846

Manure Solids & Liquid Volumes

Settling pond effluent: 40 **% Solid**

Effluent collected in summer (10% of total volume-5% milk cows @ parlor)	2,536
Effluent collected in winter (10% of total volume- 5% milk cows @ parlor)	2,536
Scraped solids in summer(12.7% of 90% of Total volume)	2,898
Scraped solids in Winter(80% of 12.7% of 90% of Total volume)	2,319

Summer Waste		Winter Waste	
Total solids: 12.7% of scraped effluent collected	322	**Total solids: 12.7% of scraped effluent collected**	902
Settling pond solids: 80% of total solids	258	**Settling pond solids: 80% of total solids**	721
Solids into lagoon: 20% of total solids	64	**Solids into lagoon: 20% of total solids**	180
Total liquids: 87.3% of flushed effluent collected	2,214	**Total liquids: 87.3% of flushed effluent collected**	1,634
Liquids sustained in settling pond: solids settled @ 60% moisture	386	**Liquids sustained in settling pond: solids settled @ 60% moisture**	1,082
Liquids stored in lagoon: Total collected effluent less volume at settling pond	1,827	**Liquids stored in lagoon: Total collected effluent less volume at settling pond**	552

Volume Summer:	Lagoon Storage		Solids Storage		VolumeWinter:	Lagoon Storage		Solids Storage	
Solids:	64	**gals/day**	258	**gals/day**	**Solids:**	180	**gals/day**	721	**gals/day**
Liquids:	1,827	**gals/day**	386	**gals/day**	**Liquids:**	552	**gals/day**	1,082	**gals/day**
Totals:	1,892	**gals/day**	644	**gals/day**	**Totals:**	732	**gals/day**	1,803	**gals/day**

North Milk Parlor Water- Summer

# Lactating Cows:	400		
Milk Production:	8	**gals/cow**	3200 **gals/day(milk)**
# Milkings/Day	2		
# of Strings:	5		
Sprnk. Head Flow:	4.50	**gals/min.**	
# of Sprnk. Heads:	48		
Sprnk. Cycle	0.50	**mins. on**	
	2.00	**mins. off**	
	0.75	**mins. on**	
	0.00	**mins. off**	
	0.00	**mins. on**	
	5.6	**gals/Cycle/sprk**	

Gals required for one floor flush 1,200

Floor flushes:

Floor Flushes
- (●) Once Per String per milking
- ( ) Once every other string per milking
- ( ) Once every third string per milking

4000 gals

Cow Wash Cycles per day
- ( ) 1 per string per day
- ( ) 2 per string per day
- (●) 3 per string per day

15 **total wash cycles/day**

Plate Cooler
- (●) Well Water
- ( ) Chilled Water

1.5 **gals water/gals milk**

Refrigeration Condensors
- (●) Water Cooled
- ( ) Air Cooled

1.5 **gals water/gals milk**

Water From Plate Cooler Recycled
- (●) Yes
- ( ) No

4800 **gals recyled per day**

Gals Water/day through sprk:	4,050	**gals**
Water recycled from plate:	4,800	**gals**

# Milk Tank Washes:	1	**150 gals ea.**	150	**gals.**
# Milk Pipe Line Washes	2	**275 gals ea**	550	**gals.**
# Misc. Floor Washes:	2	**300 gals ea**	600	**gals.**
Water From plate cooler/sprinklers:			4,800	**gals.**
Water From Floor Flushes:			4,000	

Total Water: 10,100 gal/day

South Milk Parlor Water- Summer

# Lactating Cows:	1036		
Milk Production:	8	**gals/cow**	8288 **gals/day(milk)**
# Milkings/Day	2		
# of Strings:	5		
Sprnk. Head Flow:	4.50	**gals/min.**	
# of Sprnk. Heads:	124		
Sprnk. Cycle	0.50	**mins. on**	
	2.00	**mins. off**	
	0.75	**mins. on**	
	0.00	**mins. off**	
	0.00	**mins. on**	
	5.6	**gals/Cycle/sprk**	

Gals required for one floor flush 1,500

Floor flushes:

Floor Flushes
- (●) Once Per String per milking
- ( ) Once every other string per milking
- ( ) Once every third string per milking

5000 gals

Cow Wash Cycles per day
- ( ) 1 per string per day
- ( ) 2 per string per day
- (●) 3 per string per day

15 **total wash cycles/day**

Plate Cooler
- (●) Well Water
- ( ) Chilled Water

1.5 **gals water/gals milk**

Refrigeration Condensors
- (●) Water Cooled
- ( ) Air Cooled

1.5 **gals water/gals milk**

Water From Plate Cooler Recycled
- (●) Yes
- ( ) No

12432 **gals recyled per day**

Gals Water/day through sprk: 10,490 **gals**
Water recycled from plate: 12,432 **gals**

# Milk Tank Washes:	1	**150 gals ea.**	150	**gals.**
# Milk Pipe Line Washes	2	**275 gals ea**	550	**gals.**
# Misc. Floor Washes:	2	**300 gals ea**	600	**gals.**
Water From plate cooler/sprinklers:			12,432	**gals.**
Water From Floor Flushes:			5,000	

Total Water: 18,732 gal/day

North Milk Parlor Water Winter- Winter

# Milk Cows:	400		
Milk Production:	8 **gals/cow**	3200	**gals/day(milk)**
# Milkings/Day	2		
# of Strings:	5		
Sprnk. Head Flow:	4.50 **gals/min.**		
# of Sprnk Heads:	48		
Sprnk. Cycle	0.75 **mins. on**		
	1.00 **mins. off**		
	0.50 **mins. on**		
	1.00 **mins. off**		
	0.75 **mins. on**		
	9.0 **gals/Cycle/sprk**		

Gals required for one floor flush 400

Floor Flushes:

Floor Flushes
- ○ Once Per String per milking
- ○ Once every other string per milking
- ◉ Once every third string per milking

1333 gals

Cow Wash Cycles per day
- ○ 1 per string per day
- ○ 2 per string per day
- ◉ 3 per string per day

15 **total wash cycles/day**

Plate Cooler
- ◉ Well Water
- ○ Chilled Water

1.5 **gals water/gals milk**

Refrigeration Condensors
- ◉ Water Cooled
- ○ Air Cooled

1.5 **gals water/gals milk**

Water From Plate Cooler Recycled
- ◉ Yes
- ○ No

4800 **gals recyled per day**

Gals Water/day through sprk: 6,480 **gals**
Water recycled from plate: 4,800 **gals**

# Milk Tank Washes:	1	**150 gals ea.**	150	**gals.**
# Milk Pipe Line Washes	2	**275 gals ea**	550	**gals.**
# Misc. Floor Washes:	2	**300 gals ea**	600	**gals.**
Water From plate cooler/sprinklers:			6,480	**gals.**
Water From Floor Flushes:			1,333	**gals**

Total Water: 9,113 gal/day

South Milk Parlor Water Winter- Winter

# Milk Cows:	1036		
Milk Production:	8 **gals/cow**	8288	**gals/day(milk)**
# Milkings/Day	2		
# of Strings:	5		
Sprnk. Head Flow:	4.50 **gals/min.**		
# of Sprnk Heads:	124		
Sprnk. Cycle	0.75 **mins. on**		
	1.00 **mins. off**		
	0.50 **mins. on**		
	1.00 **mins. off**		
	0.75 **mins. on**		
	9.0 **gals/Cycle/sprk**		

Gals required for one floor flush 400

Floor Flushes:

Floor Flushes
- ○ Once Per String per milking
- ○ Once every other string per milking
- ◉ Once every third string per milking

1333 gals

Cow Wash Cycles per day
- ○ 1 per string per day
- ○ 2 per string per day
- ◉ 3 per string per day

15 **total wash cycles/day**

Plate Cooler
- ◉ Well Water
- ○ Chilled Water

1.5 **gals water/gals milk**

Refrigeration Condensors
- ◉ Water Cooled
- ○ Air Cooled

1.5 **gals water/gals milk**

Water From Plate Cooler Recycled
- ◉ Yes
- ○ No

12432 **gals recyled per day**

Gals Water/day through sprk:	16,783	**gals**
Water recycled from plate:	12,432	**gals**

# Milk Tank Washes:	1	**150 gals ea.**	150	**gals.**
# Milk Pipe Line Washes	2	**275 gals ea**	550	**gals.**
# Misc. Floor Washes:	2	**300 gals ea**	600	**gals.**
Water From plate cooler/sprinklers:			16,783	**gals.**
Water From Floor Flushes:			1,333	**gals**

Total Water: 19,417 gal/day

Nutrient Lagoon

25 year /24 hr storm event: 2.10

Rainfall Area (sq. ft.) & Monthly Corral Evaporation

	Actual		% of Runoff	Weighted sq. ft. for rainfall	
Roof:	260,399		100%	260,399	
Concrete:	45,074		100%	45,074	
Yard:	-		90%	-	
Corrals:	1,645,871		90%	1,481,284	
AC:	-		100%	-	
Lagoon:	158,012		100%	158,012	
Landscape:	-		60%	-	
Total Sq. Ft:	2,109,356	**sq. ft**		1,944,769	**sq. ft.**

Rainfall into system for
25 yr. 24 hr. storm event: 2,545,702 **gals.**

Site Precipitation/ Evaporation Calculations Nutrient Lagoon

Monthly Rainfall For Location (Inches)

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
0.04	0.08	1.30	1.60	1.60	1.40	0.80	0.20	0.10	0.00	0.00	0.10

Monthly Pond/ Lagoon Evaporation Rates for Location (Inches)

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
4.38	2.23	1.20	1.24	2.08	3.84	5.99	8.71	10.34	10.95	9.64	6.99

Monthly Site (roof/ concrete/ yard/ corral/ AC/ landscape) Evaporation Rates for Location (inches)

0.04	0.08	1.20	1.24	1.60	1.40	0.80	0.20	0.10	0.00	0.00	0.10

Monthly Corral Evaporation (inches):

4.30	2.07	0.00	0.00	0.00	1.04	4.39	8.31	10.14	10.95	9.64	6.79

Rainfall Area (sq. ft.) & Monthly Corral Evaporation

	Actual	% of Runoff	Weighted sq. ft. for rainfall	% of Evaporation	Weighted Sq. Ft.for evap.	Corral Dust Control
Roof:	260,399	100%	260399	5%	13020	
Concrete:	45,074	100%	45074	5%	2254	**Area Sprinkled** 0
Yard:	0	90%	0	5%	0	**% of monthly evap.** 20 %
Corrals:	1,645,871	90%	1481284	5%	74064	
AC:	0	100%	0	5%	0	
Lagoon:	158,012	100%	158012	100%	158012	
Landscape:	0	60%	0	5%	0	
Total Sq. Ft:	2109356 **sq. ft**		1944769 **sq. ft.**		247350 **sq. ft.**	

Rainfall into system for Month (gals)

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
48,490	96,979	1,575,911	1,939,583	1,939,583	1,697,135	969,791	242,448	121,224	-	-	121,224

Evaporation for Lagoon (gals)

431,404	219,642	118,193	122,133	204,868	378,218	589,980	857,884	1,018,429	1,078,511	949,484	688,474

Evaporation for site (gals)

2,227	4,455	66,825	69,052	89,100	77,962	44,550	11,137	5,569	-	-	5,569

Evaporation from corral dust control

-	-	-	-	-	-	-	-	-	-	-	-

Rainfall into system for 25 yr. 24 hr. storm event: 2,545,702

Sozinho Dairy
Job# 412-16

Water Storage System Monthly Balance Chart 09-08-10.Combined Dairy Lagoon Calcs-Roof water into nutrient lagoon.XLS
Nutrient Lagoon

Capacity of Primary, Overflow Lagoons & Separation Pond 11,627,191 **gals less "Dead Storage Loss"**

Water Source	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
Precipitation (gals) ref. 1	48,490	96,979	1,575,911	1,939,583	1,939,583	1,697,135	969,791	242,448	121,224	-	-	121,224
Evaporation (gals) ref. 1	433,632	224,097	185,018	191,185	293,967	456,180	634,530	869,021	1,023,998	1,078,511	949,484	694,043
Corral Dust Control (gals) ref. 1	-	-	-	-	-	-	-	-	-	-	-	-
Waste Prod (gals) ref. 2												
Summer	339,926	-	-	-	-	339,926	328,961	339,926	328,961	339,926	339,926	328,961
Winter		323,268	334,044	334,044	301,717	-	-	-	-	-	-	-
Irrigation (gals) ref. 3	-	-	-	-	3,317,000	2,568,000	-	3,210,000	7,490,000	3,210,000	2,140,000	-
Milk Parlor Water Summer	929,239	-	-	-	-	929,239	899,264	929,239	899,264	929,239	929,239	899,264
Winter	-	890,200	919,873	919,873	830,853	-	-	-	-	-	-	-
(volume includes 5% Effluent form Parlor)												
Net Volume (gals)	884,023	1,086,350	2,644,810	3,002,315	(538,814)	(57,879)	1,563,486	(2,567,408)	(7,164,550)	(3,019,346)	(1,820,318)	655,406
Accumulated into Lagoon (no storm)	884,023	1,970,373	4,615,184	7,617,498	7,078,684	7,020,805	8,584,291	6,016,883	-	-	-	655,406
% of Water Storage Capacity (no stor	8%	17%	40%	66%	61%	60%	74%	52%	0%	0%	0%	6%
25 yr, 24 hr. storm (ft.) Ref. 4,5	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702	2,545,702
Accumulated w/one storm	3,429,726	4,516,076	7,160,886	10,163,202	9,624,387	9,566,508	11,129,994	8,562,586	2,545,702	2,545,702	2,545,702	3,201,108
% of Water Storage Capacity w storm	29%	39%	62%	87%	83%	82%	96%	74%	22%	22%	22%	28%

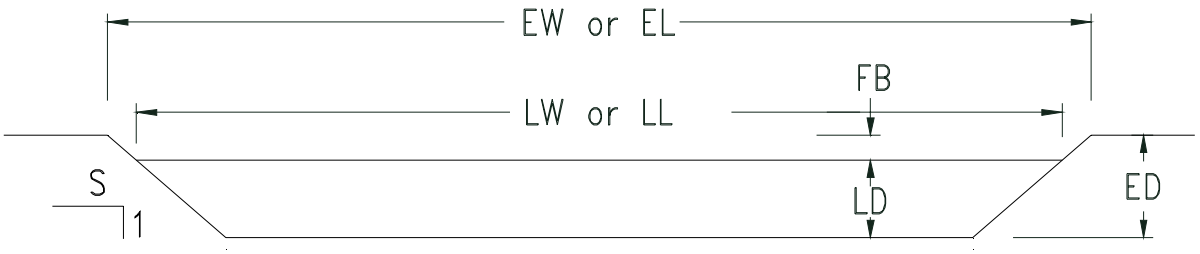
Ref. 1 Ref. "Site Precipitation/Evaporation Calculation- Nutrient Lagoon" sheet.
Ref. 2 Ref. "Dariy Facility Manure/Nutrient Production Chart"; Summer or Winter "Effluent stored in lagoon" x number of days in the month.
Ref. 3 Crop- Sudan Silage, Triticale: acres farmed; lagoon water estimated to have 4 lbs N per 1000 gallons.
Ref. 4 Ref. "Rainstorm Chart"
Ref. 5 Ref. "100 year, 24 hr. storm" sheet

Sozinho Dairy

			lb/ac harv	1.4xlb/ac harv
Summer irrigations:	(Corn Silage 30TPA)		240	336
Crop land-	321	acres		
Est nitrogen per 1000 gals effluen	6.00	lbs/1000 gallons		
May 30 application-	60	lbs./acre	3,210,000	gallons
June 19 application-	82	lbs./acre	4,387,000	gallons
June 30 application-	58	lbs./acre	3,103,000	gallons
July 15 application-	60	lbs./acre	3,210,000	gallons
Aug 7 application-	40	lbs./acre	2,140,000	gallons
Total Nitrogen applied-	300	lbs. applied		
Total estimated gallons used for irrigation- summer crop-			16,050,000	gallons

Winter irrigations:	(Triticale Silage 12TP/		180	252
Est nitrogen per 1000 gals effluen	6.00	lbs/1000 gallons		
February 15 application-	25.00	lbs./acre	1,337,500	gallons
February 26 application-	37.00	lbs./acre	1,979,500	gallons
March 8 application-	48.00	lbs./acre	2,568,000	gallons
Total Nitrogen applied-	110.00	lbs. applied		
Total extimated gallons used for irrigation- winter crop-			5,885,000	gallons
Total gallons used per year-			21,935,000	gallons

North Settling Basin Specifications

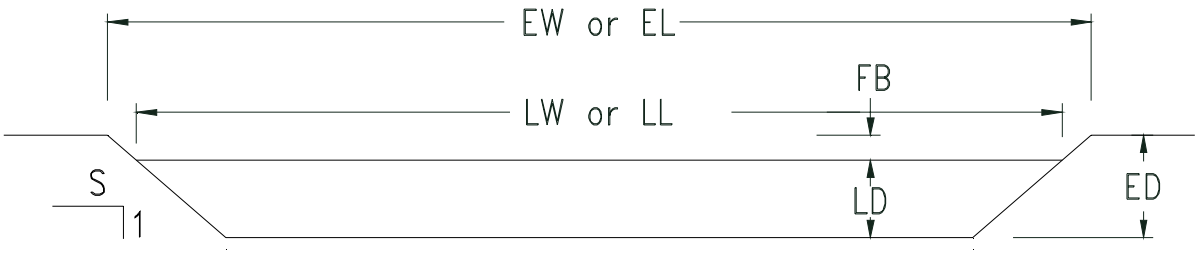


LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		216,776.00
ED=	Earth Basin Depth, Ft.		50,176.00
			196.00
			256.00
			3658.67

EW	100.00		
FB	1.00	LW=	98.00
ED	15.00	LL=	158.00
EL	160.00	LD=	14.00
S=	1.00		

Storage Volume ($ft.^3$)	170,259
Storage Volume (gal.)	1,273,535

Nutrient Lagoon #1 Specifications

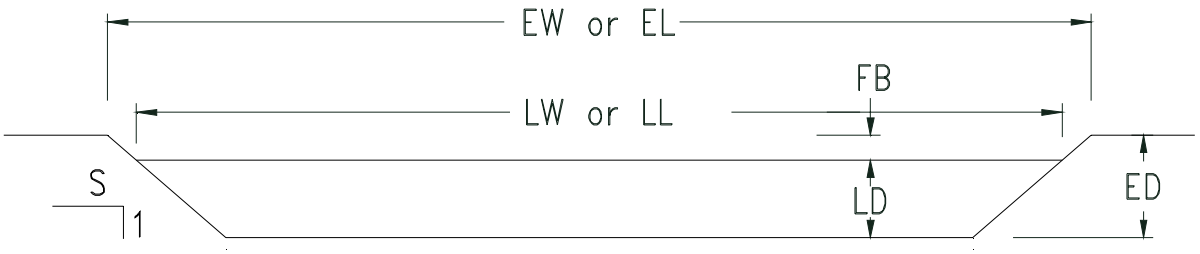


LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		203,056.00
ED=	Earth Basin Depth, Ft.		48,216.00
			196.00
			246.00
			3658.67

EW	100.00	LW=	98.00
FB	1.00	LL=	148.00
ED	15.00	LD=	14.00
EL	150.00		
S=	1.00		

Storage Volume ($ft.^3$)	158,499
Storage Volume (gal.)	1,185,570

Nutrient Lagoon #2 (Settling Pond) Specifications

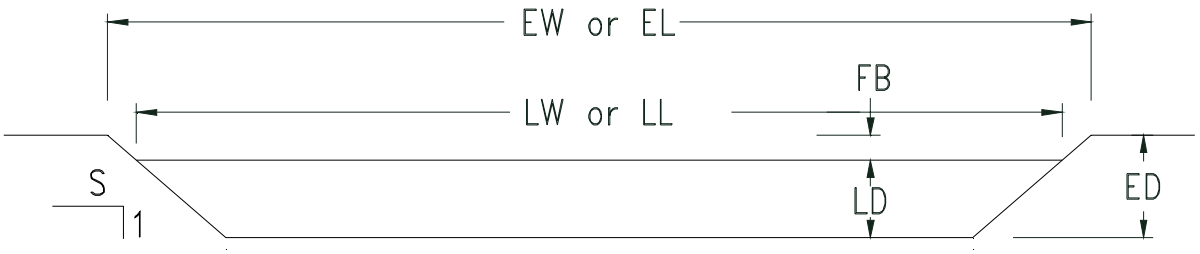


LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		104,000.00
ED=	Earth Basin Depth, Ft.		58,400.00
			160.00
			365.00
			4266.67

EW	45.00		
FB	1.00	LW=	40.00
ED	9.00	LL=	325.00
EL	330.00	LD=	8.00
S=	2.50		

Storage Volume ($ft.^3$)	49,867
Storage Volume (gal.)	373,003

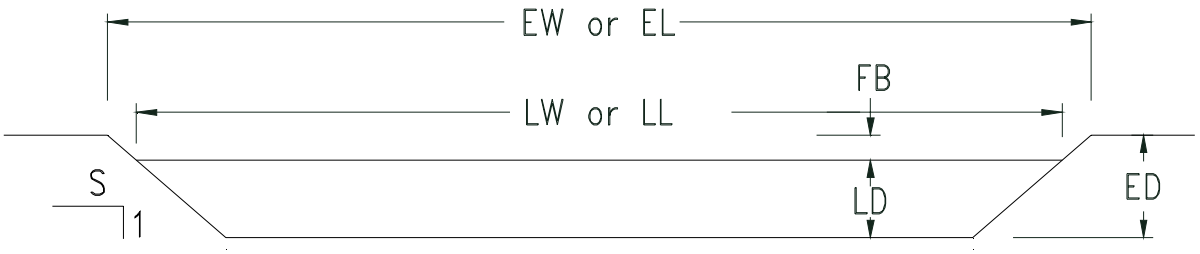
Nutrient Lagoon #2 Specifications



LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		1,326,000.00
ED=	Earth Basin Depth, Ft.		712,800.00
			1440.00
			495.00
EW	175.00		115200.00
FB	1.00	LW=	170.00
ED	25.00	LL=	325.00
EL	330.00	LD=	24.00
S=	2.50		

Storage Volume ($ft.^3$)	728,400
Storage Volume (gal.)	5,448,432

Mechanical Separator Catch pond Specifications

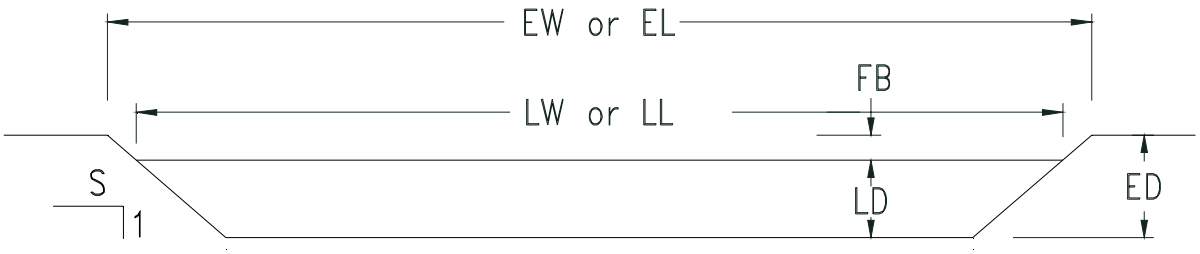


LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		120,176.00
ED=	Earth Basin Depth, Ft.		40,376.00
			196.00
			206.00
			3658.67

EW	60.00	LW=	58.00
FB	1.00	LL=	148.00
ED	15.00	LD=	14.00
EL	150.00		
S=	1.00		

Storage Volume ($ft.^3$)	83,459
Storage Volume (gal.)	624,271

Nutrient Lagoon #3 Specifications



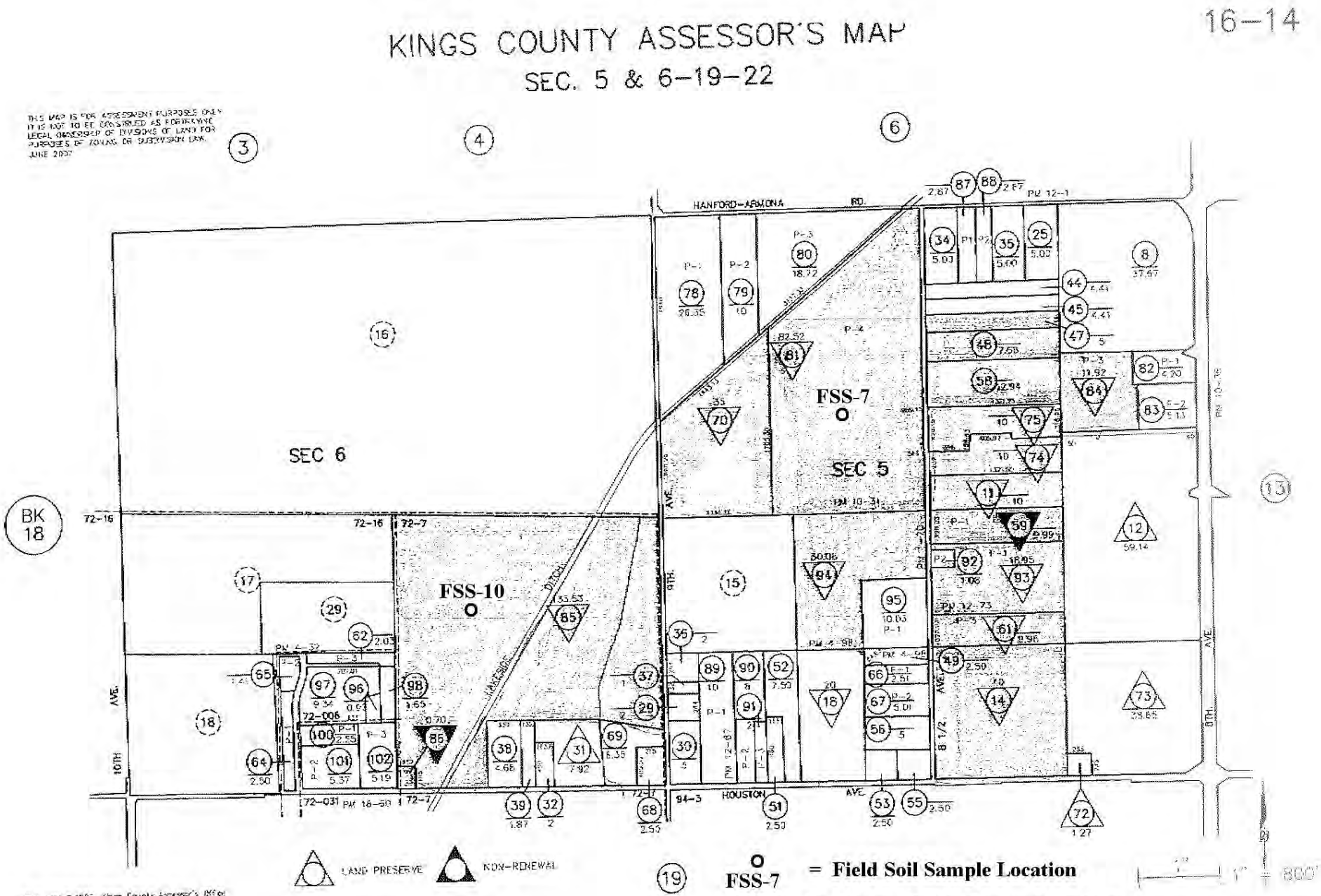
LW=	Liquid Width, Ft.	LW=EW-(2xFBxS)	
EW=	Earth Basin Width, Ft.	LL=EL-(2xFBxs)	
FB=	Freeboard Ft.	LD=ED-FB	
S=	Slope, Ft. (amount of run for 1 foot fall)		
LL=	Liquid Length, Ft.		
EL=	Earth Basin Length, Ft.	Vol. (ft^3.)=(LWxLLxLD)-[(SxLD^2)x(LW+LL)]+(4xS^{2}xLD^3/3)	
LD=	Liquid Depth		768,936.00
ED=	Earth Basin Depth, Ft.		105,056.00
			196.00
			536.00
EW	140.00		3658.67
FB	1.00	LW=	138.00
ED	15.00	LL=	398.00
EL	400.00	LD=	14.00
S=	1.00		

Storage Volume ($ft.^3$)	667,539
Storage Volume (gal.)	4,993,189

SOLID MANURE REMOVAL LOG

Date of removal	Pen numbers	Numbers of loads removed from pens	Tons per load	Destination (buyer, field number, etc.)	Initials

Initial Soil Sample Locations Map



NOTE: Previous soil sample numbers do not correspond to current field numbers.

Initial Soil Sample Locations Map

Report of Soil Analysis

JMLord, Inc.
267 N. Fulton St.
Fresno, CA 93701
(559) 268-9755
(559) 486-6504 (Fax)

NRCS-8 New Dairies
Project: Sozinho Dairy
Attn: Betsy/Louie

Group Number: **39606** Date Received: 10/1/2007 Report Date: 10/3/2007

Sample ID:	Field Name:	Depth:	Crop:
39606 - 1	Dairy #1-Field 7	0-1	Wheat

	Result	Desirable	
Salinity			
pH (Sat Paste)	6.99	6.5-7.5	
EC (dS/m)	1.29	< 2	
Ca(meq/L)	3.89		
Mg (meq/L)	2.19		
Na (meq/L)	6.89		
Cl (meq/L)	1.86		
SO4 (meq/L)	2.59		
SAR	3.95	< 5	
B (mg/L)	0.39	< 1	
Sat %	31.2		
Exchangeable Cations (ppm)			
Calcium (ppm)	1260	1402	1618
Magnesium (ppm)	229	131	196
Potassium (ppm)	540	84	210
Sodium (ppm)	157	0	40
Base Saturation (%)			
TEC (meq/100g)	10.77		
Calcium (%)	58.40	65-75%	
Magnesium (%)	17.49	10-15%	
Potassium (%)	12.83	2-5%	
Sodium (%)	6.34	0-2%	
Hydrogen (%):	0.15		
Other Bases (%):	4.41		

Nutrients	ppm	Lb/Ac-Ft	
Sulfate-S (ppm):	13.0	52	
Nitrate-N (ppm)	42.3	169	
Phosphate-P(ppm)	47.4	190	(434.4 Lb/Ac P2O5)
Zinc (ppm)	3.3	13	
Iron (ppm)	24.1	96	
Copper (ppm)	9.9	40	
Manganese (ppm)	5.4	22	
Limestone(%):			

Report of Soil Analysis

JMLord, Inc.
267 N. Fulton St.
Fresno, CA 93701
(559) 268-9755
(559) 486-6504 (Fax)

NRCS-8 New Dairies
Project: Sozinho Dairy
Attn: Louie/Betsy

Group Number: **39621** Date Received: 10/2/2007 Report Date: 10/4/2007

Sample ID:	Field Name:	Depth:	Crop:
39621 - 1	Dairy #1-Field 10	0-1	Wheat

	Result	Desirable	
Salinity			
pH (Sat Paste)	6.85	6.5-7.5	
EC (dS/m)	0.76	< 2	
Ca(meq/L)	2.18		
Mg (meq/L)	0.87		
Na (meq/L)	5.56		
Cl (meq/L)	1.55		
SO4 (meq/L)	3.10		
SAR	4.50	< 5	
B (mg/L)	0.23	< 1	
Sat %	36.0		
Exchangeable Cations (ppm)			
Calcium (ppm)	888	873	1007
Magnesium (ppm)	112	81	122
Potassium (ppm)	90	52	131
Sodium (ppm)	147	0	40
Base Saturation (%)			
TEC (meq/100g)	6.70		
Calcium (%)	66.14	65-75%	
Magnesium (%)	13.75	10-15%	
Potassium (%)	3.44	2-5%	
Sodium (%)	9.54	0-2%	
Hydrogen (%):	2.25		
Other Bases (%):	4.55		

Nutrients	ppm	Lb/Ac-Ft	
Sulfate-S (ppm):	17.9	72	
Nitrate-N (ppm)	13.8	55	
Phosphate-P(ppm)	12.7	51	(115.9 Lb/Ac P2O5)
Zinc (ppm)	1.2	5	
Iron (ppm)	38.1	152	
Copper (ppm)	1.0	4	
Manganese (ppm)	5.3	21	
Limestone(%):			

ATTACHMENT 2b

Grant Deeds and Legal Descriptions

Assessor's Parcel Map

Nutrient and Irrigation Water Management Plan (UCCE / ASAE D384.2)

14702

BOOK 1189 PAGE 639

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL TO

NAME Mr. and Mrs. Joe S. Sozinho
ADDRESS 9250 19 1/2 Avenue
CITY & STATE Lemoore, Calif. 93245

Title Order No. _____ Escrow No. 60284

RECORDED IN OFFICIAL RECORDS OF
KINGS COUNTY, CALIFORNIA
AT 22 MIN PAST 4 P M
KINGS COUNTY TITLE COMPANY
DEC 19 1980
JOAN L. BULLOCK
County Clerk and Recorder
FEE 3

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO

NAME Mr. and Mrs. Joe S. Sozinho
ADDRESS SAME AS ABOVE
CITY & STATE 11481 8 1/2 Avenue
Hanford, Calif. 93230

Apn # 16-140-11

Documentary transfer tax $ 165.00
☒ Computed on full value of property conveyed, or
☐ Computed on full value less liens and encumbrances remaining thereon at time of sale.

KCTC BY _____
Signature of declarant or agent determining tax—firm name

Individual ~~Joint Tenancy~~ Deed

WESTERN TITLE FORM NO. 105

FOR VALUE RECEIVED, CLARA ANDRE, a widow
and TONY P. ANDRE and ARLENE C. ANDRE, husband and wife

GRANT to JOE S. SOZINHO AND MARY MARGARET SOZINHO, husband and wife
as Community Property

~~AS JOINT TENANTS~~ all that real property situate in the

County of Kings, State of California, described as follows:

The South half of the South half of the Southwest Quarter of the Northeast Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian. according to Government Township Plat approved April 15, 1855;
EXCEPTING therefrom such interest in the West 20 feet of said land as was granted to the County of Kings, by deed recorded April 16, 1894 in book 1 page 13 of Rights of Way.

Dated December 18, 19 80

Tony P. Andre
TONY P. ANDRE

Clara Andre
CLARA ANDRE

Arlene C. Andre
ARLENE C. ANDRE

RECORDING REQUESTED BY:
CHICAGO TITLE CO.

RECORDING REQUESTED BY:
Fidelity National Title Company of California
Escrow No.: 07-**785651**-BC
Locate No.: CACTI7754-0954-0001-0042305082
Title No.: 07-**42305082**-CW

When Recorded Mail Document and Tax Statement To:
Joe S. Sozinho and Mary M. Sozinho, Trustees of The Sozinho Family Trust dated 12/5/95
11447 8 1/2 Avenue
Hanford, CA. 93230

Doc Nbr: 0721733
Doc Type: 07

Titles: 01 Pages: 002
Fees: 20.00
Taxes: 550.00
Paid: $570.00

Kings County Clerk Recorder
Ken Baird
08/21/2007
08:00:00
Chicago Title Company
r032

APN: 016-140-048

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $550.00
[X] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[X] Unincorporated Area

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Manuel R. Santos and Maria J. Santos, as Trustees of The Manuel R. and Maria J. Santos Family Trust, a Trust

hereby GRANT(S) to Joe S. Sozinho and Mary M. Sozinho, Trustees of The Sozinho Family Trust dated 12/5/95, a Trust

the following described real property in the County of **Kings**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: July 13, 2007

STATE OF CALIFORNIA)
COUNTY OF Tulare)
ON 7-20-07 before me, Beverly Coffman, Notary Public
(here insert name and title of the officer), personally appeared MANUEL R. SANTOS, MARIA J. SANTOS,
personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.
Signature Beverly Coffman (Seal)

Manuel R. Santos and Maria J. Santos, as Trustees of The Manuel R. and Maria J. Santos Family Trust
BY: Manuel R Santos Manuel R Santos Tr.
BY: Maria J Santos Maria J Santos Tr.

BEVERLY COFFMAN
COMM. #1451400
NOTARY PUBLIC - CALIFORNIA
TULARE COUNTY
My Comm. Expires Nov. 26, 2007

MAIL TAX STATEMENTS AS DIRECTED ABOVE

FD-213 (Rev 7/96)
(grant)(06-06)
GRANT DEED

LEGAL DESCRIPTION

EXHIBIT "A"

The Northwest quarter of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, according to the official plat thereof.

EXCEPTING THEREFROM the North 1177 feet thereof.

APN: 016-140-048

END OF DOCUMENT

RECORDED REQUESTED BY:
CHICAGO TITLE CO.

RECORDING REQUESTED BY:
Fidelity National Title Company of California
Escrow No.: 07-**785661**-BC
Locate No.: CACTI7754-0954-0001-0042305083
Title No.: 07-**42305083**-CW

When Recorded Mail Document and Tax Statement To:
Joe S. Sozinho and Mary M. Sozinho, Trustees of the Sozinho Family Trust dated 12/5/95
11447 8 1/2 Avenue
Hanford, CA. 93230

Doc Nbr: 0721734
Doc Type: 07

Titles: 01 Pages: 002
Fees: 20.00
Taxes: 550.00
Paid: $570.00

Kings County Clerk Recorder
Ken Baird
Chicago Title Company

08/21/2007
08:00:00

r032

APN: 016-140-058

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $550.00
[X] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[X] Unincorporated Area

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Manuel R. Santos and Maria J. Santos, Trustees of The Manuel R. and Maria J. Santos Family Trust

hereby GRANT(S) to Joe S. Sozinho and Mary M. Sozinho, Trustees of the Sozinho Family Trust dated 12/5/95

the following described real property in the County of **Kings**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: July 13, 2007

The Manuel R. and Maria J. Santos Family Trust

BY: Manuel R Santos
Manuel R. Santos, Trustee

BY: Maria J Santos
Maria J. Santos, Trustee

STATE OF CALIFORNIA)
COUNTY OF Tulare)
ON 7-20-07 before me,
Beverly Coffman, Notary Public
(here insert name and title of the officer), personally appeared Manuel R. Santos
Maria J. Santos,
personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

BEVERLY COFFMAN
COMM. #1451400
NOTARY PUBLIC - CALIFORNIA
TULARE COUNTY
My Comm. Expires Nov. 26, 2007

Witness my hand and official seal.

Signature Beverly Coffman (Seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

LEGAL DESCRIPTION

The Southwest quarter of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM the South 10 acres thereof.

ALSO EXCEPTING THEREFROM the North 659.4 feet of the South 989.15 feet of the Southwest quarter of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California.

ALSO EXCEPTING THEREFROM any portion thereof contained in roads, ditches or canals;

ALSO EXCEPTING THEREFROM such interest in a strip of land 20 feet wide across the West side of said property, as conveyed to the County of Kings, by Deed dated December 7, 1893 and recorded April 16, 1894 in Book 1, Page 13 of Rights of Way, Tulare County Records.

APN: 016-140-058

END OF DOCUMENT

Doc Nbr: 0226883
Doc Type: 07

Titles: 01 Pages: 002
Fees: 20.00
Taxes: 192.50
PAID: $212.50

Kings County Clerk Recorder 11/27/20
George J. Misner 12:44:
First American Title Company

RECORDING REQUESTED BY
First American Title Company

AND WHEN RECORDED MAIL TO:
Joe Sozinho and Mary Sozinho
11447 8 1/2 Avenue
Hanford, CA 93230

Space Above This Line for Recorder's Use Only

A.P.N.: **016-140-059-000**

File No.: **1601-698492 (CH)**

GRANT DEED

The Undersigned Grantor(s) Declare(s): DOCUMENTARY TRANSFER TAX **$192.50**; CITY TRANSFER TAX **$0.00**;
SURVEY MONUMENT FEE $
[ ] computed on the consideration or full value of property conveyed, OR
[ ] computed on the consideration or full value less value of liens and/or encumbrances remaining at time of sale,
[X] unincorporated area; [ ] City of HANFORD, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **TRAMPUS BETTENCOURT and JESSICA BETTENCOURT, husband and wife as joint tenants**

hereby GRANTS to Joe S. Sozinho and Mary M. Sozinho, Trustees of the Sozinho Family Trust Dated December 5, 1995
the following described property in the **Unincorporated area**, County of **Kings**, State of **California**;

PARCEL NO. 1 OF PARCEL MAP RECORDED JANUARY 17, 1973 IN BOOK 1 AT PAGE 70 OF PARCEL MAPS IN THE UNINCORPORATED AREA OF THE COUNTY OF KINGS, STATE OF CALIFORNIA;

EXCEPTING THEREFROM SUCH INTEREST IN THE WEST 20 FEET OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 5, AS CONVEYED TO THE COUNTY OF KINGS BY DEED RECORDED APRIL 16, 1894 IN BOOK 1, PAGE 16 OF RIGHTS OF WAY, TULARE COUNTY RECORDS.
SUBJECT TO LIFE ESTATE AS SET OUT IN DEED RECORDED CONCURRENTLY HEREWITH

Dated: November 12, 2002

TRAMPUS BETTENCOURT

JESSICA BETTENCOURT

Mail Tax Statements To: **SAME AS ABOVE**

STATE OF **California** }
} ss.
COUNTY OF **Kings** }

On 11-27-02 before me, Cynthia D Houk personally appeared Trampus Bettencourt & Jessica Bettencourt personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

This area for official notarial seal

Signature Cynthia D Houk

My Commission Expires: 11-1-2005

CYNTHIA D. HOUK
COMM. #1323591
NOTARY PUBLIC - CALIFORNIA
KINGS COUNTY
My Comm. Expires Nov. 1, 2005

END OF DOCUMENT

NAME Mr. & Mrs. J. Silveira Sozinho
ADDRESS 11447 8 1/2 Avenue
CITY & STATE Hanford, CA 93230

Title Order No. _____ Escrow No. 63953-NG

OCT 13 1983
JOAN L. BULLOCK
County Clerk and Recorder
FEE 5—

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO

NAME
ADDRESS Same as above.
CITY & STATE

Documentary transfer tax $110.00
☒ Computed on full value of property conveyed, or
☐ Computed on full value less liens and encumbrances remaining thereon at time of sale.

KCTC BY: Rachel Bridges
Signature of declarant or agent determining tax—firm name

Individual Grant Deed

WESTERN TITLE FORM NO. 104

APN 16-140-74
16-140-75

FOR VALUE RECEIVED, CLAY ALAN BARNETT AND SUSAN KAY BARNETT

GRANT to J. SILVEIRA SOZINHO AND M. MARGARET SOZINHO
husband and wife as community property

all that real property situate in the

County of Kings, State of California, described as follows:

LEGAL DESCRIPTION ATTACHED AS EXHIBIT "A"

Dated August 11, 1983

Clay Alan Barnett
CLAY ALAN BARNETT

Susan Kay Barnett
SUSAN KAY BARNETT

14402

BOOK 1278 PAGE 766

RECORDING REQUESTED BY

Kings County Title Company

AND WHEN RECORDED MAIL TO

RECORDED IN OFFICIAL RECORDS OF
KINGS COUNTY, CALIFORNIA
AT 52 MIN. PAST 3 P M

KINGS COUNTY TITLE COMPANY

The South 989.15 feet of the Southwest Quarter of the Northeast Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California.
EXCEPTING THEREFROM such interest in the West 20 feet thereof as conveyed to the County of Kings.
ALSO EXCEPTING THEREFROM certain mineral interest as previously reserved of record.
AND ALSO EXCEPTING THEREFROM that portion thereof lying Southerly of the following described line:
COMMENCING AT THE Southwest corner of said Northeast Quarter, and running thence North 0° 17' 56" West along the West line of said Quarter Section, 569.00 feet to a point, being the Point of Beginning of said hereindescribed line; running thence North 89o 23' 13" East 398.00 feet; thence North 6° 48' 44" East 166.63 feet; thence North 89° 43' 40" East 405.92 feet; thence South 0° 17' 56" East East 59.63 feet; thence North 89° 23' 13" East 497.00 feet to a point on the East line of said Quarter-Quarter Section which bears North 0° 21' 13" West 672.19 feet from the Southeast corner of said Quarter-Quarter Section, being the point of termination of said herein described line.

STATE OF CALIFORNIA
_____ County of Kings } ss.

On August 15, 1983, before me, the undersigned, a Notary Public in and for said State, personally appeared CLAY AIAN BARNETT

_____, personally known to me [redacted] to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed it.

OFFICIAL SEAL
SANDY VALLIN
NOTARY PUBLIC - CALIFORNIA
KINGS COUNTY
My Commission Expires June 7, 1986

SANDY VALLIN
NOTARY PUBLIC
ACKNOWLEDGMENT - INDIVIDUAL
WTI FORM NO. 60 — 1/83

END OF DOCUMENT

11735 8 1/2 AVENUE
HANFORD, CA 93230

Kings County Clerk Recorder
George J. Misner
Chicago Title Company

03/07/2003
09:27:19

R002

Escrow No. 1032811 - CF
Order No. 1032811 - GC

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

Assessor's Parcel No:
016-140-061 & 016-140-014

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX IS $544.50
☐ unincorporated area ☒ City of HANFORD
☒ computed on the full value of the interest or property conveyed, or is
☐ computed on the full value less the value of liens or encumbrances remaining at time of sale, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
CHARLES E. SILVAS AND TINA L. SILVAS, HUSBAND AND WIFE, AS COMMUNITY PROPERTY

hereby **GRANT(S)** to
JOE S. SOZINHO AND MARY M. SOZINHO, TRUSTEES OF THE SOZINHO FAMILY TRUST DATED DECEMBER 5, 1995

the following described real property in the City of HANFORD
County of KINGS , State of California:
LEGAL DESCRIPTION ATTACHED HERETO AND MADE A PART HEREOF BY REFERENCE

Dated February 14, 2003

CHARLES E. SILVAS

TINA L. SILVAS

STATE OF CALIFORNIA
COUNTY OF KINGS } SS.
On Feb 25, 2003 before me,
THE UNDERSIGNED
a Notary Public in and for said County and State, personally appeared
CHARLES E. SILVAS
TINA L. SILVAS
personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

OFFICIAL SEAL
CHARLOTTE FRESE
NOTARY PUBLIC - CALIFORNIA
COMMISSION # 1348485
KINGS COUNTY
My Commission Exp. March 27, 2006

WITNESS my hand and official seal.

Charlotte Frese
Signature of Notary

3/27/06
Date My Commission Expires

FOR NOTARY SEAL OR STAMP

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE: IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name | Street Address | City, State & Zip

GD1 –05/30/97bk

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
AND WHEN RECORDED MAIL TO

JOE S. SOZINHO

Doc Nbr: 0305734
Doc Type: 07

Titles: 01 Pages: 002
Fees: 10.00
Taxes: 544.50
PAID: $554.50

LEGAL DESCRIPTION EXHIBIT

PARCEL 1: 016-140-061

THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 19 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL MAP THEREOF, MORE PARTICULARLY DESCRIBED AS PARCEL NO. 3 OF PARCEL MAP RECORDED IN BOOK 1 AT PAGE 70 OF PARCEL MAPS, KINGS COUNTY RECORDS.

PARCEL 2: 016-140-014

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 19 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND MINERAL RIGHTS AS RESERVED BY ARMINDA FRAGA IN HER DEED TO MYRON BETTENCOURT, ET UX., RECORDED OCTOBER 16, 1975 IN BOOK 1958 AT PAGE 771 OF OFFICIAL RECORDS, AS DOCUMENT NO. 11513.

9913996

RECORDED IN OFFICIAL RECORDS OF
KINGS COUNTY, CALIFORNIA
AT 30 MIN PAST 10A M
FIRST AMERICAN TITLE CO.
JUN 30 1999
GEORGE J. MISNER
County Clerk and Recorder
FEE 20

RECORDING REQUESTED BY
First American Title Company

AND WHEN RECORDED MAIL TO

NAME Joe Sozinho
ADDRESS Mary M. Sozinho
CITY AND 11447 8 1/2 Avenue
STATE Hanford, CA 93230

Title Order No. Escrow No. 105011NG

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

Same As Above

DOCUMENTARY TRANSFER TAX $ 1,210.00

XX Computed on the consideration or value of property conveyed; OR

____ Computed on the consideration or value less liens or encumbrances remaining at time of sale.

FATCO - [signature]

Signature of Declarant or Agent determining tax -- Firm Name

apn: 016-140-017 & 016-140-081

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Alcala Farms, a General Partnership also known as Alcala Farms, a Partnership

hereby GRANT(S) to
Joe S. Sozinho and Mary M. Sozinho, Co Trustees of the Sozinho Family Trust dated Dec. 5, 1995

the real property in the City of
County of Kings, State of California, described as

See Exhibit "A" Attached Hereto and Made A Part Hereof

Dated: June 10, 1999

Alcala Farms, a Partnership aka
Alcala Farms, a General Partnership

[signature]
By: Ralph Alcala Jr.

[signature]
By: Adolf Alcala

[signature]
By: Joe Alcala

[signature]
By: Carlos Alcala

[signature]
Ralph Alcala

9913996

STATE OF CALIFORNIA } ss.
COUNTY OF Kings }

On June 17, 1999 before me, Nonie E. Gillum,

personally appeared Ralph Alcala Jr. & Adolf Alcala & Joe Alcala & Carlos Alcala & Ralph Alcala

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.
Signature [signature]

MAIL TAX STATEMENTS AS DIRECTED ABOVE

NONIE E. GILLUM
COMM. #1098571
NOTARY PUBLIC - CALIFORNIA
KINGS COUNTY
My Comm. Expires May 26, 2000

EXHIBIT "A"

DESCRIPTION:

PARCEL 1:

That portion of the Northeast Quarter of the Southwest Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

EXCEPTING THEREFROM that portion of the Northeast Quarter of the Southwest Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, shown as Parcel 1 of Parcel Map filed for record September 11, 1998 in Book 15 at Page 19 of Parcel Maps.

PARCEL 2:

That portion of the Northwest Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to Government Township Plat approved April 15, 1855; shown as Parcel 4 of Parcel Map filed for record March 19, 1987 in Book 10 at Page 31 of Parcel Maps, Kings County Records.

EXCEPTING THEREFROM an undivided one-half interest in all oil, gas, and other hydrocarbon substances, as reserved in the Deed executed by Richard H. Shainwald, Executor of the Last Will and Testament of Ruth Heller Shainwald, Deceased, to Walter D. Heller, recorded April 20, 1949 in Book 428, Page 187 of Official Records; ALSO EXCEPTING one-fourth of all gas, oil, and other hydrocarbon substances in and under said land, as excepted and reserved by Walter K. Heller, et ux., in their deed to Carl B. Freeman, et al., recorded March 21, 1960 in Book 755, Page 978 of Official Records;

END OF DOCUMENT

RECORDING REQUESTED BY:
CHICAGO TITLE CO.

RECORDING REQUESTED BY:
Fidelity National Title Company of California
Escrow No.: 07-**785650**-BC
Locate No.: CACTI7754-0954-0001-0042305079
Title No.: 07-**42305079**-CW

When Recorded Mail Document and Tax Statement To:
Joe S. Sozinho and Mary M. Sozinho, Trustees of The Sozinho Family Trust dated 12/5/95
11447 8 1/2 Avenue
Hanford, CA. 93230

Doc Nbr: 0721732
Doc Type: 07

Titles: 01 Pages: 001
Fees: 17.00
Taxes: 550.00
Paid: $567.00

Kings County Clerk Recorder
Ken Baird
Chicago Title Company

08/21/2007
08:00:00

r032

APN: 016-140-047

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $550.00
[X] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[X] Unincorporated Area City of **Kings County**,

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Carlos Santos and Nancy D. Santos, husband and wife

hereby GRANT(S) to Joe S. Sozinho and Mary M. Sozinho, Trustees of The Sozinho Family Trust dated 12/5/95

the following described real property in the, County of **Kings**, State of **California**:
The South 165 feet of the North 1177 feet of the Northwest quarter of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, according to the official plat thereof.

Excepting therefrom such interest in the West 20 feet thereof, as was conveyed to the County of Kings, by Deed dated January 31, 1894, executed by J. B. Yule and recorded in Book 1, page 11 of Rights of Way.

DATED: July 13, 2007

Carlos Santos

Nancy D. Santos

Nancy D. Santos

STATE OF CALIFORNIA)
COUNTY OF Tulare)
ON 7-20-07 before me, Beverly Coffman, Notary Public
(here insert name and title of the officer), personally appeared Carlos Santos & Nancy D. Santos,
personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

BEVERLY COFFMAN
COMM. #1451400
NOTARY PUBLIC - CALIFORNIA
TULARE COUNTY
My Comm. Expires Nov. 26, 2007

Witness my hand and official seal.

Signature Beverly Coffman (Seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

FD-213 (Rev 7/96)
(grant)(06-06)

GRANT DEED

END OF DOCUMENT

009552

RECORDING REQUESTED BY

Safeco Title Insurance Company

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO:

NAME Joe S. Sozinho
ADDRESS 11447 Avenue 8 1/2
CITY & STATE ZIP Hanford, Ca. 93230

Title Order No. GC Escrow No. 239182-BC

BOOK 1415 PAGE 088

RECORDED IN OFFICIAL RECORDS OF KINGS COUNTY, CALIFORNIA
AT ~~MIN PAST~~ 11 A M
SAFECO TITLE INSURANCE COMPANY
JUN 18 1987
JOAN L. BULLOCK
County Clerk and Recorder
FEE 7.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned declares that the documentary transfer tax is $ 39.60 and is
[X] computed on the full value of the interest or property conveyed, or is
[ ] computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale. The land, tenements or realty is located in
[ ] unincorporated area [ ] city of ..... and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

John J. Keverline, an unmarried man
Bonnie E. Keverline, an unmarried woman
hereby GRANT(S) to

Joe S. Sozinho and Mary Sozinho,
husband and wife as Community Property
the following described real property in the
county of Kings , state of California:

See Exhibit "I" attached hereto and made a part hereof.

009552

Dated June 10, 1987

X John J. Keverline
John J. Keverline
X Bonnie E. Keverline
Bonnie E. Keverline

Order No. 66455 T
Legal Description

Exhibit "I"

Parcel 3 of Parcel Map filed in Book 10 of Parcel Maps, at Page 36, Kings County Records, being a portion of the Northeast Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California;

EXCEPTING THEREFROM from that portion of the North half of the Southeast Quarter of the Northeast Quarter of Section 5 an undivided 1/2 of all oil, gas and other hydrocarbons and minerals in and under said land, as saved and excepted, in deed dated August 12, 1948 executed by Geovanna Macagno, a widow, to H. E. Richmond and Fay Richmond, husband and wife and recorded on August 30, 1948 in Book 408 at Page 384 of Official Records, of Kings County.

ALSO EXCEPTING THEREFROM from that portionof the Northhalf of the Southeast Quarter of the Northeast Quarterof Section 5 an undivided 1/4 of all oil, gas and minerals within or underlying said land, as excepted and reserved in Deed dated April 29, 1955 executed by H. E. Richmond and Fay Richmond, husband and wife, to E. S. Curtis and Mary Curtis, husband and wife as joint tenants and recorded May 12, 1955 in Book 617 at Page 255, Official Records, as Document No. 5103.

ALSO EXCEPTING THEREFROM from the South 100 feet of the Northeast Quarter of the Northeast Quarter of Section 5 an undivided one-half interest in and to all oil, gas and minerals and mineral rights below a depth of 200 feet from the surface of said land as reserved by Mamie F. Harp, Loretta Roland and Ethel Hooper, dealing with their separate property, as their respective interest appear as of this date, recorded February 17, 1971 in Book 965 at Page 859 in Official Records, as Document No. 2254.

ALSO EXCEPTING THEREFROM from the South 100 feet of the Northeast Quarter of the Northeast Quarter of Section 5 an undivided 1/4 interest in and to all oil, gas, minerals and other hydrocarbon substances as reserved by Irene Wanvig, in deed to Loretta Roland, et al., recorded in Book 682 at Page 82 of Official Records. Together with an easement for road purposes along the Southeasterly 30 feet, Easterly 30 feet and Northeasterly 30 feet of Parcel 1 of Parcel Map filed in Book 10 of Parcel Maps, page 36, Kings County Records. Being a portion of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo base and Meridian.

END OF DOCUMENT

92224217

Order No.
Escrow No. 81764NG
Loan No. RECORDING REQUESTED BY:
KINGS COUNTY TITLE COMPANY

WHEN RECORDED MAIL TO:

Mr. and Mrs. Joe Sozinho
11447 8 1/2 Ave.
Hanford, CA 93230

RECORDED IN OFFICIAL RECORDS OF
KINGS COUNTY, CALIFORNIA
AT 15 MIN PAST 12 M
KINGS COUNTY TITLE COMPANY
DEC 22 1992
JOAN L. BULLOCK
County Clerk and Recorder
FEE 21

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

SAME AS ABOVE

DOCUMENTARY TRANSFER TAX $ 134.75
..... Computed on the consideration or value of property conveyed; OR
..... Computed on the consideration or value less liens or encumbrances remaining at time of sale.
KCTC
Signature of Declarant or Agent determining tax — Firm Name

APN: 16-140-070

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

William S. Walker, as to an undivided one-half (1/2) interest, and Sharon J. Walker, as to an undivided one-half (1/2) interest
hereby GRANT(S) to

Joe Sozinho and Mary Sozinho, husband and wife, as community property

the real property in the City of
County of Kings State of California, described as

See Exhibit "A" attached

Dated September 16, 1992

William S. Walker

EXHIBIT "A"

DESCRIPTION:

All that portion of the Northwest Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, described as follows:

Beginning at the West Quarter corner of said section; thence North along the West line of said Section 898.25 feet to a point in the centerline of a canal; thence North 51° 31' 48" East along said centerline 1445.13 feet; thence South 0° 09' 17" East 1790.81 feet to a point on the South line of said Northwest Quarter; thence South 89° 40' 25" West 1136.30 feet to the point of beginning.

EXCEPTING THEREFROM an undivided one-half interest in and to all oil, gas and other hydrocarbon substances, as reserved in the Deed executed by Richard H. Shainwald, Executor of the Last Will and Testament of Ruth Heller Shainwald, Deceased, to Walter D. Heller, recorded April 20, 1949 in Book 428 Page 187 of Official Records; ALSO EXCEPTING one-fourth of all gas, oil, and other hydrocarbon substances in and under said land, as excepted and reserved by Walter K. Heller, et ux, in their deed to Carl B. Freeman, et al., recorded March 21, 1960 in Book 755, Page 978 of Official Records.

ALSO EXCEPTING THEREFROM an undivided one-eighth interest in and to all oil, gas, hydrocarbons and other mineral substances in or under said property, together with the right of ingress and egress for the purpose of exploration, drilling and other incidental easements for the production of said substances, as excepted and reserved in Deed dated June 9, 1977, executed by M. D. Murray and B. V. Murray, husband and wife to William S. Walker and Sharon J. Walker, husband and wife and recorded June 15, 1977, in Book 1095, Official Records, Page 32, as Document No. 7939.

009552

BOOK 1415 PAGE 088

RECORDING REQUESTED BY

Safeco Title Insurance Company

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO:

NAME Joe S. Sozinho
ADDRESS 11447 Avenue 8 1/2
CITY & STATE ZIP Hanford, Ca. 93230

Title Order No. GC Escrow No. 239182-BC

RECORDED IN OFFICIAL RECORDS OF KINGS COUNTY, CALIFORNIA
AT ~~MIN PAST~~ 11A M
SAFECO TITLE INSURANCE COMPANY
JUN 18 1987
JOAN L. BULLOCK County Clerk and Recorder
FEE 6.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned declares that the documentary transfer tax is $ 39.60 and is
☒ computed on the full value of the interest or property conveyed, or is
☐ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale. The land, tenements or realty is located in
☐ unincorporated area ☐ city of ..... and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

John J. Keverline, an unmarried man
Bonnie E. Keverline, an unmarried woman
hereby GRANT(S) to

Joe S. Sozinho and Mary Sozinho,
husband and wife as Community Property
the following described real property in the
county of Kings , state of California:

See Exhibit "I" attached hereto and made a part hereof.

009552

Dated June 10, 1987

X John J. Keverline
John J. Keverline

X Bonnie E. Keverline
Bonnie E. Keverline

STATE OF CALIFORNIA)

Dated June 10, 1987

X John J. Keverline
John J. Keverline
X Bonnie E. Keverline
Bonnie E. Keverline

STATE OF CALIFORNIA
COUNTY OF Tulare } SS.

On this the 16th day of June 19 87, before me the undersigned, a Notary Public in and for said County and State, personally appeared

John J. Keverline
Bonnie E. Keverline

, personally known to me or proved to me on the basis of satisfactory evidence to be the person s whose name s are subscribed to the within instrument and acknowledged that they executed the same.

Beverly Coffman
Signature of Notary

Beverly Coffman

FOR NOTARY SEAL OR STAMP

BEVERLY COFFMAN
NOTARY PUBLIC
TULARE COUNTY, CALIFORNIA
My Commission Expires Sep. 30, 1987

Assessor's Parcel No. .....

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE; IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name | Street Address | City & State

CAL-1 (Rev. 8-82)

Order No. 66455 T
Legal Description

Exhibit "I"

Parcel 3 of Parcel Map filed in Book 10 of Parcel Maps, at Page 36, Kings County Records, being a portion of the Northeast Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California;

EXCEPTING THEREFROM from that portion of the North half of the Southeast Quarter of the Northeast Quarter of Section 5 an undivided 1/2 of all oil, gas and other hydrocarbons and minerals in and under said land, as saved and excepted, in deed dated August 12, 1948 executed by Geovanna Macagno, a widow, to H. E. Richmond and Fay Richmond, husband and wife and recorded on August 30, 1948 in Book 408 at Page 384 of Official Records, of Kings County.

ALSO EXCEPTING THEREFROM from that portionof the Northhalf of the Southeast Quarter of the Northeast Quarterof Section 5 an undivided 1/4 of all oil, gas and minerals within or underlying said land, as excepted and reserved in Deed dated April 29, 1955 executed by H. E. Richmond and Fay Richmond, husband and wife, to E. S. Curtis and Mary Curtis, husband and wife as joint tenants and recorded May 12, 1955 in Book 617 at Page 255, Official Records, as Document No. 5103.

ALSO EXCEPTING THEREFROM from the South 100 feet of the Northeast Quarter of the Northeast Quarter of Section 5 an undivided one-half interest in and to all oil, gas and minerals and mineral rights below a depth of 200 feet from the surface of said land as reserved by Mamie F. Harp, Loretta Roland and Ethel Hooper, dealing with their separate property, as their respective interest appear as of this date, recorded February 17, 1971 in Book 965 at Page 859 in Official Records, as Document No. 2254.

ALSO EXCEPTING THEREFROM from the South 100 feet of the Northeast Quarter of the Northeast Quarter of Section 5 an undivided 1/4 interest in and to all oil, gas, minerals and other hydrocarbon substances as reserved by Irene Wanvig, in deed to Loretta Roland, et al., recorded in Book 682 at Page 82 of Official Records. Together with an easement for road purposes along the Southeasterly 30 feet, Easterly 30 feet and Northeasterly 30 feet of Parcel 1 of Parcel Map filed in Book 10 of Parcel Maps, page 36, Kings County Records. Being a portion of the Northeast quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo base and Meridian.

END OF DOCUMENT

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
AND WHEN RECORDED MAIL TO

JOE S. SOZINHO AND
MARY M. SOZINHO
11447 8 1/2 AVENUE
HANFORD, CA 93230

Doc Nbr: 0104385
Doc Type: 07

Titles: 01 Pages: 002
Fees: 20.00
Taxes: 664.95
PAID: $684.95

Kings County Clerk Recorder
George J. Misner
Chicago Title Company

03/08/2001
08:00:00

r002

Escrow No. 1017949 - MMS
Order No. 1017949 - GMC

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

Assessor's Parcel No:
016-140-085/086

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX IS $664.95

[X] unincorporated area [ ] City of

[X] computed on the full value of the interest or property conveyed, or is

[ ] computed on the full value less the value of liens or encumbrances remaining at time of sale, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
DANIEL JOSEPH LEAL, AN UNMARRIED MAN, AS TO PARCELS 1 AND 2;
PAUL LEAL, AN UNMARRIED MAN, AS TO A LIFE ESTATE, AND DANIEL JOSEPH LEAL, AS TO THE REMAINDER, AS TO PARCEL 3

hereby **GRANT(S)** to
JOE S. SOZINHO AND MARY M. SOZINHO, TRUSTEES OF THE SOZINHO FAMILY TRUST DATED DECEMBER 5, 1995

the following described real property in the
County of KINGS , State of California:

LEGAL DESCRIPTION ATTACHED HERETO AND MADE A PART HEREOF BY REFERENCE

Dated January 2, 2001

Daniel Joseph Leal
DANIEL JOSEPH LEAL

STATE OF CALIFORNIA
COUNTY OF KINGS) SS.
On January 4, 2001 before me,
THE UNDERSIGNED
a Notary Public in and for said County and State, personally appeared
DANIEL JOSEPH LEAL

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

METTA MORRIS
COMM. 1190621
NOTARY PUBLIC - CALIFORNIA
SAN LUIS OBISPO COUNTY
My Comm. Expires July 20, 2002

WITNESS my hand and official seal.

Metta Morris
Signature of Notary

July 20, 2002
Date My Commission Expires

FOR NOTARY SEAL OR STAMP

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE: IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name | Street Address | City, State & Zip

GD1 --05/30/97bk

LEGAL DESCRIPTION EXHIBIT

PARCEL 1: PORTION 016-140-085

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES AND MINERALS IN PLACE UNDER, IN MIGRATION OR TRANSITION IN OR UNDER SAID LAND, AS PREVIOUSLY RESERVED AND EXCEPTED OF RECORD.

PARCEL 2: PORTION 016-140-085

THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER AND THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER O F THE SOUTHEAST QUARTER AND THE EAST 462 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 6.

ALSO EXCEPTING THEREFROM THAT PORTION OF THE SOUTHEAST QUARTER OF SAID SECTION 6 DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION;; THENCE NORTH 88° 4' WEST ALONG THE SOUTH LINE OF SAID SECTION, 617 FEET; THENCE NORTH 0° 06'30" WEST 422 FEET; THENCE NORTH 1° 36'30" WEST 247 FEET; THENCE SOUTH 80° 51' EAST 441 FEET; THENCE SOUTH 571 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM THE SOUTH 195 FEET OF THE WEST 157 FEET OF THE SOUTHEAST QUARTER OF SAID SECTION 6.

ALSO EXCEPTING THEREFROM ALL OIL, GAS, MINERALS, MINERAL RIGHTS AND OTHER HYDROCARBON SUBSTANCES WITHIN OR UNDERLYING THE SUBJECT PROPERTY, AS RESERVED IN THE GRANT DEED EXECUTED BY PAUL LEAL AND LENA LEAL, HUSBAND AND WIFE, TO MELVIN FRANCIS BETTENCOURT AND CAROL ANN BETTENCOURT, HUSBAND AND WIFE, AS JOINT TENANTS, DATED DECEMBER 22, 1980, RECORDED IN BOOK 1190 PAGE 803 AS DOCUMENT NO. 142 OF OFFICIAL RECORDS.

PARCEL 3: 016-140-086

THE SOUTH 195 FEET OF THE WEST 157 FEET OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

END OF DOCUMENT

9803248

RECORDING REQUESTED BY

KINGS COUNTY TITLE COMPANY

AND WHEN RECORDED MAIL TO

NAME Joe & Mary Sozinho
ADDRESS 11447 8 1/2 Avenue
CITY AND STATE Hanford, CA 93230

RECORDED IN OFFICIAL RECORDS OF KINGS COUNTY, CALIFORNIA
AT 1 MIN PAST 8 A M
KINGS COUNTY TITLE COMPANY
FEB 2 0 1998
JOAN L. BULLOCK
County Clerk and Recorder
FEE 10

Title Order No. Escrow No 98241ng

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

same as above

DOCUMENTARY TRANSFER TAX $ 198.00

xx Computed on the consideration or value of property conveyed; OR
_____ Computed on the consideration or value less liens or encumbrances remaining at time of sale.

KCTC by Vickie Hinton
Signature of Declarant or Agent determining tax -- Firm Name

GRANT DEED

apn: 016 140 093

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

CAROL A. BETTENCOURT, a married woman, as her sole and separate property

hereby GRANT(S) to

THE SOZINHO FAMILY TRUST DATED DECEMBER 5, 1998, JOE S. SOZINHO AND MARY M. SOZINHO, AS Trustee

the real property in the City of
County of Kings , State of California, described as

LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A"

Dated:
Feb. 17, 1998

Carol A. Bettencourt
CAROL A. BETTENCOURT

STATE OF CALIFORNIA } ss.
COUNTY OF Kings }

On February 17, 1998 before me, Nonie E. Gillum,

personally appeared Carol A. Bettencourt

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature Nonie E. Gillum

MAIL TAX STATEMENTS AS DIRECTED ABOVE

NONIE E. GILLUM
COMM. #1098571
NOTARY PUBLIC - CALIFORNIA
KINGS COUNTY
My Comm. Expires May 26, 2000

9803248

9803249

EXHIBIT "A"

DESCRIPTION:

That portion of the Northwest Quarter of the Southeast Quarter of Section 5, Township 19 South, Range 22 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, shown as Parcel 1 of Parcel Map recorded January 24, 1992 in Book 12 at Page 73 of Parcel Maps.

END OF DOCUMENT

Dairy Site

Crop Fields

16–14

KINGS COUNTY ASSESSOR'S MAP

SEC. 5 & 6–19–22

THIS MAP IS FOR ASSESSMENT PURPOSES ONLY IT IS NOT TO BE CONSIDERED AS PORTRAYING LEGAL OWNERSHIP OF DIVISIONS OF LAND FOR PURPOSES OF ZONING OR SUBDIVISION LAW. JUNE 2007

HANFORD–ARMONA RD.

SEC 6

SEC 5

BK 18

72–16 | 72–7 | 72–031 PM 16–50 | 94–3

HOUSTON AVE

10TH AVE.

9TH AVE.

8 1/2 AVE.

LAKESIDE DITCH

LAND PRESERVE

NON–RENEWAL

1" = 800'

not theirs

8/17/2009

Sozinho Dairy
14447 8 1/2 Ave.
KINGS COUNTY

NUTRIENT AND IRRIGATION WATER MANAGEMENT PLANS
(Nitrogen per ASAE D384.2,
Salt from RWQCB Fact Sheet No. 4)

Holstein Herd

ASAE Milk Based N Excretion Calculations	Milk/day/cow	lb/gallon	lb milk/day/ cow	lb/kg	kg milk/day/ cow	ASAE Formula	gram N/day/milk cow	lb/gram	lb N/day/milk cow
	8 gallons	8.65	69.2	2.205	31.38	(milkx4.204)+283.3	415.24	0.002205	**0.916**

Table 1. Herd Description & A.U.

		Freestalls		Flushed Corrals		Scraped Corrals		N Excr. Factor	N Excreted / Day	
Animal	Factor	Head	A.U.	Head	A.U.	Head	A.U.			
Milk Cows	1.40	900	1,260	150	210	600	840	(milkx4.204)+283.3	1,511	1,650
Dry Cows	1.12	0	0	105	118	164	184	.5 lb/day/head	135	269
Bred Heifers	1.02	84	86	180	184	608	621	.26 lb/day/head	227	872
Heifers (1 yr to breeding)	1.02	0	0	0	0	291	297	.26 lb/day/head	76	291
Calves (3mo - 1yr)	0.49	0	0	182	89	1,271	623	.17 lb/day/head	247	1,453
Baby Calves	0.29	445	131	0	0	136	40	.14 lb/day/head	81	581
Breeder Bulls	1.40	0	0	0	0	0	0	.45 lb/day/AU	0	0
Subtotal =		**1,429**	**1,477**	**617**	**601**	**3,070**	**2,605**		**2,277**	

NOTE: Nitrogen excretion for Milk Cows is based on ASAE D384.2, page 8, equation 16.
Nitrogen excretion for support stock is based on ASAE D384.2, page 2, Table 1b, except:
Nitrogen excretion for breeder bulls is based on RWQCB Factsheet 4.
Nitrogen retention (losses) are based on UCCE report table 4-2, page 31.
Milk Cow liquid/solid manure ratio based on UCCE report, 3.3.1, page 23.

Total Head= 5,116
Total AUs= 4,683

Table 2. Calculation of Nitrogen Loading (minimum retention period of 30 days).

Description	Value from Table 1	Liquid Waste Factor	Liquid Waste Nitrogen	Solid Waste Factor	Solid Waste Nitrogen
Freestall Milk Cows	900	0.7*0.916*0.7*365	147,378	0.3*0.916*0.7*365	63,162
Flushed Baby Calf Hutches	445	0.99*0.14*0.7*365	15,758	0.01*0.14*0.7*365	159
Flushed Bred Heifer	84	0.99*0.26*0.7*365	5,524	0.01*0.26*0.7*365	56
Flushed Corral Milk Cows	150	0.35*0.916*0.7*365	12,282	0.65*0.916*0.7*365	22,809
Non-MC Flushed Corral Animals	467	0.35*(E12*0.5+E13*0.	11,647	0.65*(E12*0.5+E13*(	21,630
Scraped Corral Milk Cows	600	0.11*0.916*0.7*365	15,440	0.89*0.916*0.7*365	124,921
Scraped Corral AU - Milk Cows	2,470			1.0*(G12*0.5+G13*0	140,742
TOTALS (lbs of N)			**208,029**		**373,478**

Total N wet + dry= 581,508

Tables 1 and 2 can be used to estimate the amount of nitrogen available to crops from manure produced at a dairy. Table 1 is used to calculate the daily nitrogen excreted at the dairy. Table 2 is used to estimate the nitrogen in liquid / solid forms if the manure is applied to cropland. An alternate and superior way to evaluate the nitrogen loading is to have the holding pond contents and manure stockpiles analyzed periodically and then use the reported nutrient values along with the wastewater and manure application rates to determine the nutrient loading rate.

Notes:

1 Animal units (AU) are calculated by multiplying the number of head by the appropriate factor.

2 The following assumptions used calculating nitrogen values are consistent with ASAE D384.2, UCCE report, and RWQCB Factsheet 4: The animals are housed for 365 days/year; the nitrogen excretion rate is based on milk production for milk cows and per head for other cows: 80% and 60 % of the manure in freestalls and flushed corrals, respectively, is handled as a liquid. For milk cows in dry corrals or where alleys are scraped, 11% of the manure is in washwater at the milk barn. When wastewater held more than 60 days is applied to cropland, there is a 30% loss of nitrogen. There is a 30% loss of nitrogen from storage and application of dry manure. These values are based on the UCCE reports; Managing Dairy Manure in the Central Valley of California, however, the values may be modified in the future as new information becomes available.

3 For Guernseys and Holsteins, use adjusted Animal Unit values.

Table 3. Cropland Nitrogen Requirement

Crop	Yield (tons)	lbs/acre	Field Acres First Crop	Field Acres Second Crop	Field Acres Third Crop	Nitrogen Requirement	Application Rate Per UCCE Report section 5.9, page 48 (1.4 x crop uptake):
Alfalfa	8	480	0	0	0	0	
Almonds	1.5	200	0	0	0	0	
Barley	2.5	160	0	0	0	0	
Bermudagrass	4	225	0	0	0	0	
Bromegrass	5	220	0	0	0	0	
Clovergrass	6	300	0	0	0	0	
Corn (grain)	5	240	0	0	0	0	
Corn (silage)	35	250	**321**	0	0	80,250	112,350
Cotton (lint)	0.75	180	0	0	0	0	
Grain sorghum	4	250	0	0	0	0	
Oats	1.6	115	0	0	0	0	
Orchardgrass	6	300	0	0	0	0	
Prunes	15	90	0	0	0	0	
Safflower	2	200	0	0	0	0	
Sorghum-sudan	8	325	0	0	0	0	
Sudan Silage	8	88	0	**321**	0	28,248	39,547
Sugar Beets	30	255	0	0	0	0	
Tomatoes	30	180	0	0	0	0	
Timothy	4	150	0	0	0	0	
Triticale Boot	12	180	0	0	**321**	57,780	80,892
Walnuts	7	200	0	0	0	0	
Wheat	3	175	0	0	0	0	0
			321	**321**	Total N (lbs/year)	**166,278**	**241,103**

Evaluation of Nutrient Requirements: The UCCE report, section 5.9, page 48, recommends an application rate of 140-150% of crop uptake. Using the total pounds of nitrogen available value from Table 2 and 145% of the total nitrogen requirements value from Table 3, an initial determination can be made as to the relationship between nitrogen availability and nitrogen need and whether or not it is necessary to export manure or to import fertilizer. As with any farming operation, periodic measurements of nitrogen in cropland and/or crops should be made in order to better determine nutrient requirements for optimum yield.

Table 4. Preliminary Nitrogen Balance

Description	Wet	Dry
Crop Requirement	241,103	33,074
Nitrogen Produced	208,029	373,478
Balance	33,074	(340,404)

Needed Acreage (Wet) **0**
Needed Acreage (Dry) ~~801~~

Amount of solid manure which must be sold offsite (Nitrogen): 91%

Table 5. Salt Production Calculation

Description	Value from Table 1	Liquid Waste Factor	Liquid Waste Salts	Solid Waste Factor	Solid Waste Salts
Total Freestall AU	1,477	0.7*1.29*365	486,706	0.3*1.29*365	208,588
Flushed Corral AU	601	0.35*1.29*365	99,000	0.65*1.29*365	183,858
Scraped Corral Milk Cows	840	0.11*1.29*365	43,507	0.89*1.29*365	352,007
Scraped Corral AU - Milk Cows	1,765			1.0*1.29*365	831,159
TOTALS (lbs salt/year)			629,213		1,575,613

Total salts/year (wet + dry) = 2,204,826

Table 6. Cropland Salt Loading Capacity

Description	Acres	Salt Loading Criteria (lbs/acre/year)	Maximum Salt Loading Capacity (lbs/year)
Single Cropped Acreage (Available for wet & dry applications)	0	2,000	0
Double Cropped Acreage (Available for wet & dry applications)	321	3,000	963,000
Single Cropped Acreage (Available for dry applications only)	0	2,000	0
Double Cropped Acreage (Available for dry applications only)	0	3,000	0

Total Salt Loading Capacity (lbs/year) = 963,000

Table 7. Preliminary Salt Balance

Description	Wet	Dry
Crop Requirement	963,000	333,787
Salts Produced	629,213	1,575,613
Balance	333,787	(1,241,826)

Amount of solid manure which must be sold offsite (Salt): 1,241,826 79%

Additional Double Cropped Acreage Needed for Wet Waste ~~0~~ **0** **NOT NEEDED**
Additional Double Cropped AcreageNeeded for Dry Waste ~~414~~ **0** **NOT NEEDED (SEE NOTES)**

Reduce herd by: ~~0~~ **0** **Animal Units**

HERD REDUCTION, ADDED ACRES NOT REQUIRED. SEE NOTE #1

Note: Salt loading based on RWQCB Factsheet 4.

Quantity of Manure To Be Exported Off-Site:

Manure to haul off as per NRCS AWMFH, p. 4-8 (modified).
Waste/AU = 85lb @ 87.5% moisture; Dry Manure % moisture = 30%
AUs(85)(0.125)(365)/2000+moist= **7,363** tons @ moist = 30%

NOTE #1 - As stated in the Dairy Design Study, 94% of solid manure will be sold offsite.

ATTACHMENT 2c

Odor Management Plan Monitoring Form

Odor Complaint Register

Rule 4570 VOC, PM10, and NH Mitigation BACT Charts

ODOR MANAGEMENT PLAN MONITORING

Frequency		When potential for odor release is high (e.g. high temperature)				
		Monthly basis during the remainder of the year				
Conducted by:		Facility Operator				
Inspection areas:		Unpaved corrals and hutches				
		Manure stockpiles and lagoons				
		Land application fields				
		Site boundaries				
Month	Date	Are dry, aerobic conditions being promoted in the open lots effectively?	Is manure being removed frequently to prevent odor?	Are manure storage areas being managed appropriately tp prevent nuisance conditions?	Are manure applications to land causing nuisance conditions because of timing or application methods?	Initials

ODOR COMPLAINT REGISTER

Date	Person who received the complaint	Action taken to determine cause of the odor	Action taken to resolve odor problem	Result of the action	Additional action req'd to prevent the problem from re-occurring

Dairy Potential BACT Requirements and Mitigation Measures

Emission Unit:	Cow Housing	
Pollutant	**Control Technology/Mitigation Technique**	**✓**
VOC	Concrete freestall and drylot feed lanes and walkways (required)	X
	Feed lanes and walkways to be flushed four times a day, scraped four times daily, or vacuumed four times daily (required)	X
	Weekly scraping and/or manure removal using a pull type manure harvesting equipment, except during periods of rainy weather (required)	X
	Drylots sloped to facilitate runoff and drying in accordance to Title 3. Food and Agriculture, Division 2. Animal Industry of the California Code of Regulations. Section 646.1 (required)	X
	Pave feedlane at least 8 feet on the corral side of the fence (required)	X
	Freestall enclosure with biogas vented to biofilter with 80% control (technologically feasible)	
PM_{10}	Shade Structures on open corrals (required)	X
	Weekly scraping and/or manure removal using a pull type manure harvesting equipment in morning hours when moisture in air except during periods of rainy weather (required)	X
	Use of water and/or soil stabilizers on the dirt corral surfaces, as necessary to maintain optimum moisture content, such that PM and VOC emissions are minimized. A detailed proposal of this system needs to be provided to the District (technologically feasible)	
	Feeding Young Stock (heifers and calves) Near Dusk (required)	X
	Individual Calve Hutches (Calves under three months) (required)	X
	Concrete freestall and drylot feed lanes and walkways (required)	X
	Drylots controlled by windbreaks – Downwind and upwind shelterbelts must meet the USDA National Research Conservation Services (NRCS) Conservation Practice Standard: Windbreaks/Shelterbelt Establishment - Code 380 (technologically feasible)	
NH_3	Feed lanes and walkways to be flushed four times a day, scraped four times daily, or vacuumed four times a day (required)	X
	Weekly scraping and/or manure removal using a pull type manure harvesting equipment, except during periods of rainy weather (required)	X
	Drylots sloped to facilitate runoff and drying in accordance to Title 3. Food and Agriculture, Division 2. Animal Industry of the California Code of Regulations. Section 646.1 (required)	X
	Pave feedlane at least 8 feet on the corral side of the fence (required)	X

Emission Unit:	Feed	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	Animals fed in accordance with NRC or other District approved guidelines utilizing routine nutritional analysis for rations (required)	X
	Cover or ensile all silage Piles except the face of pile (required)	X
	Collect leachate from the silage piles and send it to a waste treatment system such as a lagoon at least once every twenty-four (24) hours (required)	X
	Uneaten feed should be re-fed or removed daily to minimize emissions from decomposing feed (required)	X
	Silage Face Management (only disturb the required area of face – leave remaining area undisturbed) (required)	X
PM_{10}	Cover all silage piles (required)	X
	All dry grain to be stored in commodity barns (required)	X
NH_3	Animals fed in accordance with NRC or other District approved guidelines utilizing routine nutritional analysis for rations (required)	X
	Cover or ensile all silage Piles except the face of the pile (required)	X
	Collect leachate from the silage piles and send it to a waste treatment system such as a lagoon at least once every twenty-four (24) hours (required)	X
	Uneaten feed should be re-fed or removed daily to minimize emissions from decomposing feed (required)	X
	Silage Face Management (only disturb the required area of face – leave remaining area undisturbed) (required)	X

Emission Unit:	Milking Barn	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	Flush/Spray after each batch of milking (required)	X
	Enclosure of milk parlor with biogas vented to biofilter with 80% control (technologically feasible)	
NH_3	Flush/Spray after each batch of milking (required)	X

Emission Unit:	Land Application of Liquid and Solid Manure	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	**Liquid Manure Handling:** Irrigation of crops using liquid and slurry manure from a holding / storage pond (required)	X
	Slurry Manure Handling: Liquid injection of manure until the crops become tall enough that damage would occur (optional)	
	Solid Manure Handling: Rapid incorporation of the manure into the soil after land application (required)	X
NH_3	**Liquid Manure Handling:** Irrigation of crops using liquid and slurry manure from a holding / storage pond (required)	X
	Slurry Manure Handling: Liquid injection of manure until the crops become tall enough that damage would occur (only applies to slurry)	
PM_{10}	**On-field Crop(s) Activities (required):** 1. Minimize passes 2. Practice conservation tillage 3. Restrict field activity during high wind events (>20 mph) 4. Surface roughening of fallow fields 5. Track-out prevention	X

Emission Unit:	Liquid Manure Management	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	Aerobic lagoon (aeration) (technologically feasible)	X
	Anaerobic digester system with 95% VOC control of captured biogas (IC engine w/catalyst or equivalent) (optional)	
	If not proposing an anaerobic digester, you **MUST** commit to install one if it is required by the final BACT guideline. If you agree, please check the box	
	Anaerobic Treatment Lagoon designed according to NRCS Guideline (two cell system: Mechanical separator – anaerobic treatment lagoon – Storage Pond – Flush from storage Pond) (required)	
NH_3	Aerobic lagoon (aeration) (technologically feasible)	X

Emission Unit:	Mechanical Separators	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	Dewatering press to reduce moisture content of separated solids (dehydrator or screw press or similar) (required)	
	Weekly removal of separated solids (required)	X
NH_3	Dewatering press to reduce moisture content of separated solids (dehydrator or screw press or similar) (required)	
	Weekly removal of separated solids (required)	X

Emission Unit:	Settling basins/Weeping Walls	
Pollutant	**Control Technology/Mitigation Technique**	✓
VOC	Dry contents in basins within a 2-week period (required)	X
	Contents must either be directly incorporated into land or spread in thin layers, harrowed and dried (required)	X
NH_3	Dry contents in basins within a 2-week period (required)	X
	Contents must either be directly incorporated into land or spread in thin layers, harrowed and dried (required)	X

ATTACHMENT 2d

Irrigation Plan

Irrigation Management Plan Monitoring Form

Irrigation Management Plan Sampling Form

Proposed Field Soil Sample Locations Map

Initial Field Soil Sample Locations Map

Initial Field Soil Sample Analysis Reports

Crop Field Sampling Procedures

Materials Needed for Lagoon Water Nitrogen Quick-Test

Quick-Test Ordering Information

Quick-Test Procedure Short List

Nitrogen Application dispersion tables (GPM Needed To Achieve a Target Application Rate)

DOMESTIC WELLS @ DAIRIES

DOMESTIC WELL #2 - APN# 016-140-48
DOMESTIC WELL #3 - APN# 016-140-58
DOMESTIC WELL #4 - APN# 016-140-75
DOMESTIC WELL #5 - APN# 016-140-75
DOMESTIC WELL #6 - APN# 016-140-74
DOMESTIC WELL #7 - APN# 016-140-59

DOMESTIC WELLS @ HOUSES IN FIELDS

DOMESTIC WELL #1 - APN# 016-140-47
DOMESTIC WELL #8 - APN# 016-140-93
DOMESTIC WELL #9 - APN# 016-140-61
DOMESTIC WELL #10- APN# 016-140-85

LEGEND

PROPERTY LINE
STREET LINE
WATER LINE
PERMANENT OPEN DITCH
PERMANENT CANAL
PULL DITCH

AG WELLS & PUMP LIST

FLUSH CATCH BASIN
- PUMP 20 HP- AGITATOR/PUMP

LAGOON #1:
- FLOATING PUMP 20 HP- AGITATOR/PUMP
- FLOATING PUMP 5 HP
- FLUSH PUMP 30 HP

LAGOON #2:
- FLOATING PUMP

APN# 016-140-58:
- AG WELL #1 W/ PUMP

FIELD #2 - APN# 016-140-93:
- AG WELL #3 W/ PUMP

FIELD #3A - APN# 016-140-14:
- AG WELL #4 W/ PUMP

FIELD #4 - APN# 016-140-81:
- AG WELL #4 W/ PUMP

FIELD #5 - APN# 016-140-94:
- AG WELL #5 W/ PUMP

FIELD #7 - APN# 016-140-70:
- CANAL PUMP 926E1
- AG WELL #6 - TANK WELL W/ PUMP

FIELD #8 - APN# 016-140-85:
- AG WELL # 7 W/ PUMP

FIELD #9 APN# - 016-140-85:
- AG WELL #8 W/ PUMP
- AG WELL #9 W/ PUMP
- CANAL PUMP 926Q1
- TAIL WATER W/ LIFT PUMP, 3 HP
- (NOT USED - TO BE ABANDONED) AG WELL - 40 HP ELECT. PUMP 500 GPM

NOTE:
ALL CROPABLE FIELDS ARE TRIPLED CROPPED WITH CORN SILAGE, SUDAN SILAGE & TRITICALE BOOT

Sozinho Dairy
Sozinho Dairy Property List:

APN #:	APN Acres:	Field #(s):	Cropable Acrage:	Non-Cropable Acrage	Use:	Status:	Receives Liquids:	Formerly:
016-014-11	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
016-014-48	7.68	N/A	0.00	7.68	Dairy Site	Owned	No	**Dairy #3 Site**
016-014-58	12.94	01	0.00	12.94	Dairy Site	Owned	No	**Dairy #3 Site**
016-014-59	9.99	N/A	0.00	9.99	Dairy Site	Owned	No	Dairy #1 Site
016-014-75	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
016-014-74	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
Dairy Site Acres:				60.61				
016-014-14	40.00	3A	36.31	3.69	Cropping	Owned	Yes	
016-014-47	5.00	001	3.49	1.51	Cropping	Owned	Yes	
016-014-61	9.98	3B	8.96	1.02	Cropping	Owned	Yes	
016-014-70	35.00	7	31.73	3.27	Cropping	Owned	Yes	
016-014-81	82.52	4	75.12	7.40	Cropping	Owned	Yes	
016-014-84	11.92	1	10.30	1.62	Cropping	Owned	Yes	
016-014-85	133.53	8A,8B,9	113.45	20.08	Cropping	Owned	Yes	
016-014-93	18.95	2	13.90	5.05	Cropping	Owned	Yes	
016-014-94	30.08	5	27.73	2.35	Cropping	Owned	Yes	
					check figure:			
Total acres-	427.59		320.99	106.60	427.59			

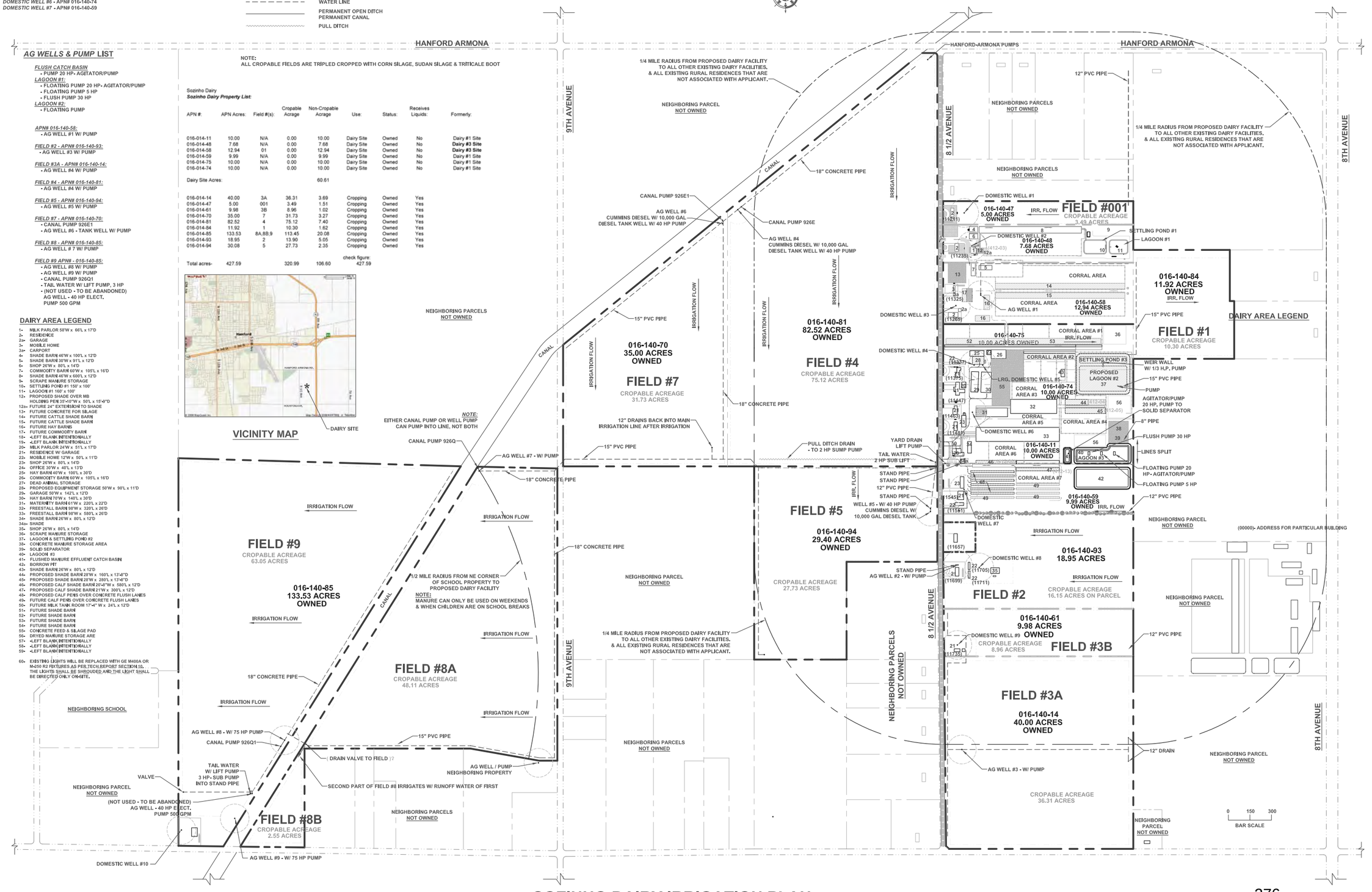
DAIRY SITE

VICINITY MAP

DAIRY AREA LEGEND

1- MILK PARLOR 58'W x 66'L x 17'D
2- RESIDENCE
2a- GARAGE
3- MOBILE HOME
3a- CARPORT
4- SHADE BARN 46'W x 100'L x 12'D
5- SHADE BARN 30'W x 91'L x 12'D
6- SHOP 26'W x 80'L x 14'D
7- COMMODITY BARN 60'W x 105'L x 16'D
8- SHADE BARN 46'W x 600'L x 12'D
9- SCRAPE MANURE STORAGE
10- SETTLING POND #1 150' x 100'
11- LAGOON #1 160' x 100'
12- PROPOSED SHADE OVER MB HOLDING PEN 35'-0"W x 50'L x 15'-9"D
12a- FUTURE 24' EXTENSION TO SHADE
13- FUTURE CONCRETE FOR SILAGE
14- FUTURE CATTLE SHADE BARN
15- FUTURE CATTLE SHADE BARN
16- FUTURE HAY BARNS
17- FUTURE COMMODITY BARN
18- -LEFT BLANK INTENTIONALLY
19- -LEFT BLANK INTENTIONALLY
20- MILK PARLOR 24'W x 51'L x 17'D
21- RESIDENCE W/ GARAGE
22- MOBILE HOME 12'W x 50'L x 11'D
23- SHOP 26'W x 80'L x 14'D
24- OFFICE 30'W x 40'L x 13'D
25- HAY BARN 40'W x 100'L x 30'D
26- COMMODITY BARN 60'W x 105'L x 16'D
27- DEAD ANIMAL STORAGE
28- PROPOSED EQUIPMENT STORAGE 50'W x 90'L x 11'D
29- GARAGE 50'W x 142'L x 12'D
30- HAY BARN 70'W x 140'L x 30'D
31- MATERNITY BARN 61'W x 220'L x 22'D
32- FREESTALL BARN 98'W x 320'L x 26'D
33- FREESTALL BARN 98'W x 580'L x 26'D
34- SHADE BARN 26'W x 86'L x 12'D
34a- SHADE
35- SHOP 26'W x 80'L x 14'D
36- SCRAPE MANURE STORAGE
37- LAGOON & SETTLING POND #2
38- CONCRETE MANURE STORAGE AREA
39- SOLID SEPARATOR
40- LAGOON #3
41- FLUSHED MANURE EFFLUENT CATCH BASIN
42- BORROW PIT
43- SHADE BARN 26'W x 80'L x 12'D
44- PROPOSED SHADE BARN 28'W x 160'L x 13'-8"D
45- PROPOSED SHADE BARN 28'W x 280'L x 13'-8"D
46- PROPOSED CALF SHADE BARN 20'-4"W x 580'L x 12'D
47- PROPOSED CALF SHADE BARN 21'W x 300'L x 12'D
48- PROPOSED CALF PENS OVER CONCRETE FLUSH LANES
49- FUTURE CALF PENS OVER CONCRETE FLUSH LANES
50- FUTURE MILK TANK ROOM 17'-4" W x 24'L x 12'D
51- FUTURE SHADE BARN
52- FUTURE SHADE BARN
53- FUTURE SHADE BARN
54- FUTURE SHADE BARN
55- CONCRETE FEED & SILAGE PAD
56- DRYED MANURE STORAGE ARE
57- -LEFT BLANK INTENTIONALLY
58- -LEFT BLANK INTENTIONALLY
59- -LEFT BLANK INTENTIONALLY

60- EXISTING LIGHTS WILL BE REPLACED WITH GE M400A OR M-250 R2 FIXTURES AS PER TECH.REPORT SECTION 10. THE LIGHTS SHALL BE SHROUDED AND THE LIGHT SHALL BE DIRECTED ONLY ON-SITE.



SOZINHO DAIRY IRRIGATION PLAN

SCALE: 1" = 300'-0"

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TITLE PG REV:	DESCRIPTION	SHEET REV:	DATE
A	INITIAL RELEASE	ALL SHEETS @ REVISION "A"	8-21-2009
B	SHTS 6 AND 7 CHANGED PER COUNTY CORRECTIONS DATED OCT. 16, 2009 - MINOR SHEGNIAL SITE PLAN	SHTS 1, 6 and 7 @ REVISION "B"	11-10-2009
C	DAIRY WAS CITED FOR "NOTICE OF VIOLATION" 2V2009-0103 REVIEW 08-45 AND "NOTICE OF VIOLATION" 2V2009-0103	SHEET @ REVISION "C"	11-17-2009
D			
E			

IRRIGATION PLAN

SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

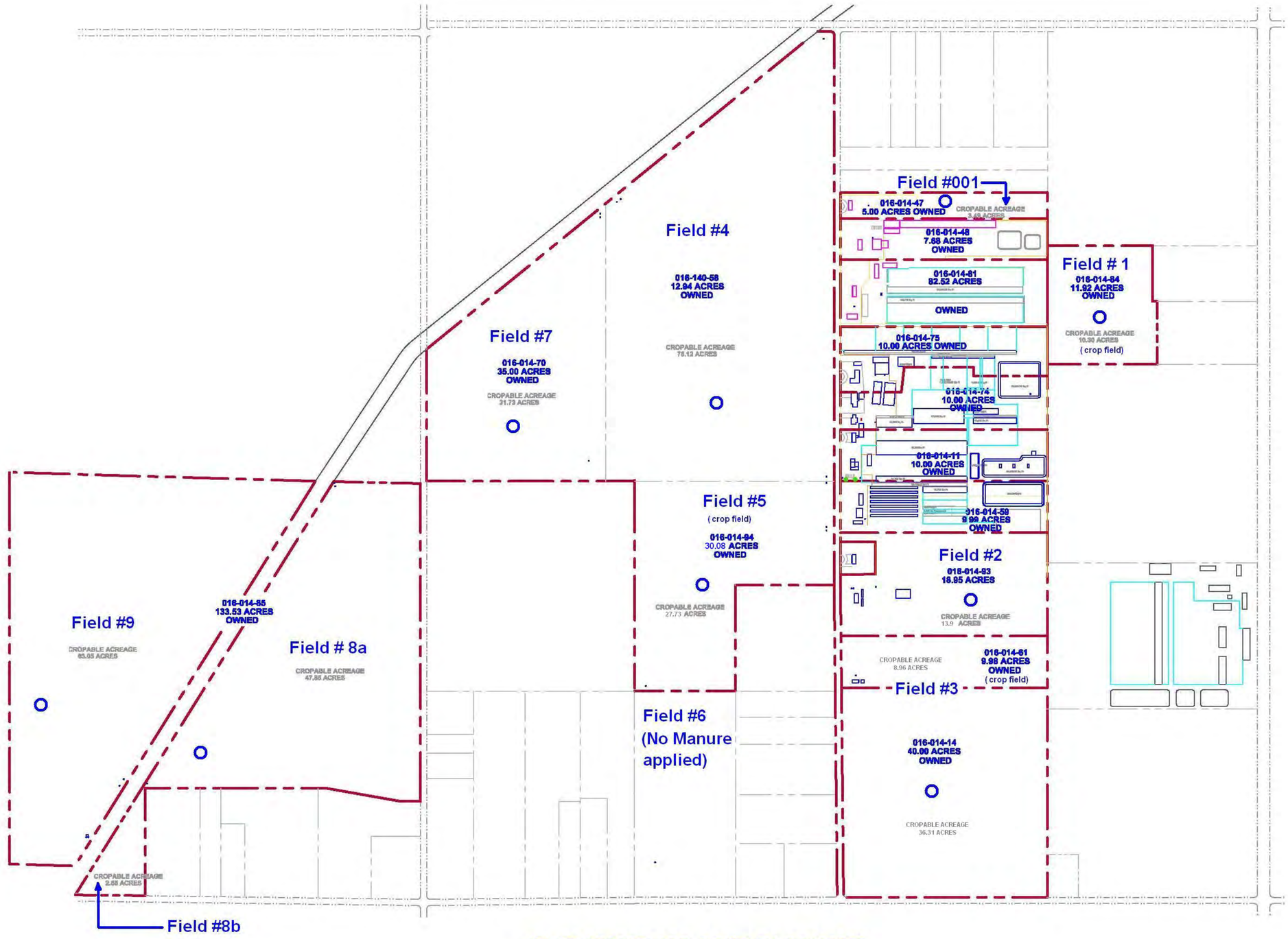
Western Dairy Design Associates, Inc.
316 West F Street, Ste 100
Oakdale, CA 95361
(209) 848-8674
www.dairydesigners.com

Dwg. Date:	08-21-2009
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-17
Sheet #	1
of	8 Sheets
Rev Level	C

Irrigation Management Plan Monitoring Form

FIELD NAME OR NUMBER			CROP	YEAR
	Start and End Dates for Irrig. Event	Average total set times and average time to get water across the field	Total volume of fresh water applied, ac*ft	Total volume of lagoon water applied, ac*ft.
1	Start	Total set time		
	End	Time to get across		
2	Start	Total set time		
	End	Time to get across		
3	Start	Total set time		
	End	Time to get across		
4	Start	Total set time		
	End	Time to get across		
5	Start	Total set time		
	End	Time to get across		
6	Start	Total set time		
	End	Time to get across		
7	Start	Total set time		
	End	Time to get across		
8	Start	Total set time		
	End	Time to get across		
9	Start	Total set time		
	End	Time to get across		
10	Start	Total set time		
	End	Time to get across		
11	Start	Total set time		
	End	Time to get across		
12	Start	Total set time		
	End	Time to get across		

Sampling Date	Sampling time	Sampling location	ml used in test	diluted manure absorb.	reagent blank absorb.	total absorb.	NH4-N abs (total - manure - reagent)	NH4-N ppm (NH4 abs x 300)	Organic N ppm (manure abs x 2200)	notes



O PROPOSED SOIL SAMPLE LOCATIONS

SITE PLAN A

PRINT DATE	BY
DATE	BY

PROPOSED SOIL SAMPLE LOCATIONS

SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-014-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

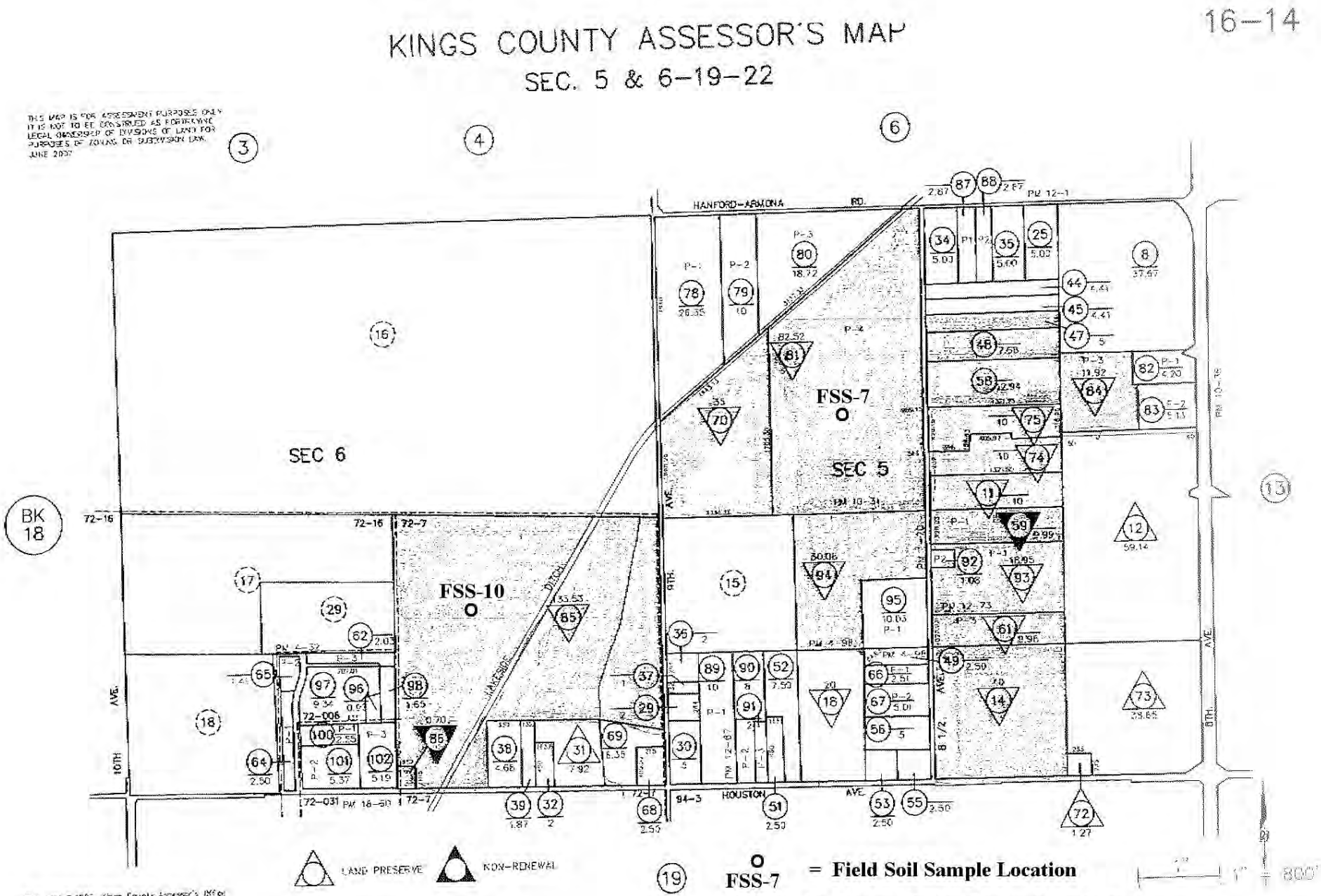
CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
309 West F Street, Ste 109
Oakdale, CA 95361
(209) 848-5074
www.dairydesigners.com

Dwg. Date:	08-05-21
Scale:	AS SHOWN
Drawn:	R.ORTIZ
Job:	412-01
Sheet #	2

Initial Soil Sample Locations Map



FSS-7 = Field Soil Sample Location

NOTE: Previous soil sample numbers do not correspond to current field numbers.

Initial Soil Sample Locations Map

Report of Soil Analysis

JMLord, Inc.
267 N. Fulton St.
Fresno, CA 93701
(559) 268-9755
(559) 486-6504 (Fax)

NRCS-8 New Dairies
Project: Sozinho Dairy
Attn: Betsy/Louie

Group Number: **39606** Date Received: 10/1/2007 Report Date: 10/3/2007

Sample ID:	Field Name:	Depth:	Crop:
39606 - 1	Dairy #1-Field 7	0-1	Wheat

	Result	Desirable	
Salinity			
pH (Sat Paste)	6.99	6.5-7.5	
EC (dS/m)	1.29	< 2	
Ca(meq/L)	3.89		
Mg (meq/L)	2.19		
Na (meq/L)	6.89		
Cl (meq/L)	1.86		
SO4 (meq/L)	2.59		
SAR	3.95	< 5	
B (mg/L)	0.39	< 1	
Sat %	31.2		
Exchangeable Cations (ppm)			
Calcium (ppm)	1260	1402	1618
Magnesium (ppm)	229	131	196
Potassium (ppm)	540	84	210
Sodium (ppm)	157	0	40
Base Saturation (%)			
TEC (meq/100g)	10.77		
Calcium (%)	58.40	65-75%	
Magnesium (%)	17.49	10-15%	
Potassium (%)	12.83	2-5%	
Sodium (%)	6.34	0-2%	
Hydrogen (%):	0.15		
Other Bases (%):	4.41		

Nutrients	ppm	Lb/Ac-Ft	
Sulfate-S (ppm):	13.0	52	
Nitrate-N (ppm)	42.3	169	
Phosphate-P(ppm)	47.4	190	(434.4 Lb/Ac P2O5)
Zinc (ppm)	3.3	13	
Iron (ppm)	24.1	96	
Copper (ppm)	9.9	40	
Manganese (ppm)	5.4	22	
Limestone(%):			

Report of Soil Analysis

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NRCS-8 New Dairies
Project: Sozinho Dairy
Attn: Louie/Betsy

Group Number: **39621** Date Received: 10/2/2007 Report Date: 10/4/2007

Sample ID:	Field Name:	Depth:	Crop:
39621 - 1	Dairy #1-Field 10	0-1	Wheat

	Result	Desirable	
Salinity			
pH (Sat Paste)	6.85	6.5-7.5	
EC (dS/m)	0.76	< 2	
Ca(meq/L)	2.18		
Mg (meq/L)	0.87		
Na (meq/L)	5.56		
Cl (meq/L)	1.55		
SO4 (meq/L)	3.10		
SAR	4.50	< 5	
B (mg/L)	0.23	< 1	
Sat %	36.0		
Exchangeable Cations (ppm)			
Calcium (ppm)	888	873	1007
Magnesium (ppm)	112	81	122
Potassium (ppm)	90	52	131
Sodium (ppm)	147	0	40
Base Saturation (%)			
TEC (meq/100g)	6.70		
Calcium (%)	66.14	65-75%	
Magnesium (%)	13.75	10-15%	
Potassium (%)	3.44	2-5%	
Sodium (%)	9.54	0-2%	
Hydrogen (%):	2.25		
Other Bases (%):	4.55		

Nutrients	ppm	Lb/Ac-Ft	
Sulfate-S (ppm):	17.9	72	
Nitrate-N (ppm)	13.8	55	
Phosphate-P(ppm)	12.7	51	(115.9 Lb/Ac P2O5)
Zinc (ppm)	1.2	5	
Iron (ppm)	38.1	152	
Copper (ppm)	1.0	4	
Manganese (ppm)	5.3	21	
Limestone(%):			

Field Soil Sampling Procedures

Soil Samples:

Materials Needed: Hand or power Auger kit, Rubber Hammer, Screwdriver, wrenches, Bucket, Zip Lock Bags or A&L Laboratories standard 1-lb. Sample bags, Soils Map of the Area, Felt Tip Marker, Chain of Custody Forms, Ice Chest with Ice or "blue ice".

Sampling Procedure:

1. In the office, use soils map to plan where samples are to be taken. Bring this map with you.
2. Prepare a cooler or ice chest chilled to 4° Celsius and containing ice or "blue ice" coolant.
3. Using soils map, indentify locations from which samples will be taken. Take at least one sample from each different type of soil as shown on the soils map.
4. Assemble hand or power auger and prepare other materials. Use rubber hammer and screwdriver to take dirt out of the hand auger.
5. **Semiannual and Annual Sample: 0 ft. to 1 ft. deep**. Dig with hand or power auger until hole is 0 to 1 ft. deep. Use a tape measure to measure the depth of the hole. When it's 6 inches deep, dig another hand auger full or use the sampler in the power auger kit. If using hand auger, put about a pound of this dirt in a zip lock bag or A&L Laboratories standard 1-lb. sample bag. Close the bag. A minimum of **50 grams** is required for the tests. If using power auger, cap the sample tube. Label the bag or sample tube according to labeling procedures (Below). Put sample container into cooler.
6. **Triennial Sample: 0 ft. to 1 ft., 2 ft. to 3 ft., & 4 ft. to 5 ft. deep**. Dig with hand or power auger hole is ½, 2, or 4 ft. deep. Use a tape measure to measue the depth of the hole. When the hole is at the appropriate depth, dig another auger full or use the sampler in the power auger kit. If using hand auger, put about a pound of this dirt in a different zip lock bag or A&L Laboratories standard 1-lb. sample bag from sample one. Close the bag. A minimum of **50 grams** is required for the S2N test. If using power auger, cap the sample tube. Label the bag or sample tube according to labeling procedures (Below). Put sample container into cooler.
7. If samples are to be composited, composit and label them as required.

Labeling:

1. Use a felt tip marker to label the containers.
2. Label each container immediately after sample is taken.
3. Label the containers according to the location number that it is taken from on that ranch.
4. Put the depth that the sample was taken from on the container.

- The first depth at the first location will be identified as S 1-1
- The second depth at the first location will be identified as S 1-2
- The third depth at the second location will be identified as S 2-3
- And so on.

Testing:

1. Usual testing lab is A & L Western Laboratory in Modesto. Fill out "real" Chain-of-custody forms, not the A&L Soil Sample Information sheet. Chain-of-custody forms are located in the front pocket of the WESTERN DESIGN "Soil Sampling Procedures & Standards" book, or available at A & L Labs. Take samples directly to the testing Laboratory.
2. For the semiannual soil sample, the tests are for **Nitrate – N and Ammonium – N.**
3. For the annual soil test, same as above, and add **Sodium adsorption ratio (SAR), and Exchangeable Sodium Percentage (ESP).**
4. Triennial soil tests are **S2N, plus Nitrate – N and Ammonium - N.** No fertilizer recommendations on our tests.
5. Arrange to pick up sample tubes, if used, when analyses are complete.
6. Leave lab's copy of chain of custody at the lab.
7. Keep all Chain-of-custody forms, receipts and records in the customer's file.
8. Results will be mailed to our office. Make copies of the results and put them in the customer's file until they are used in whatever report we are doing.

Materials needed for lagoon water nitrogen quick test (3/01)

*420 nm hand-held generic pocket colorimeter (Hach 46777-42) *$340.00*
note: The DR890 model colorimeter reads to three decimal places (generic reads to two), is somewhat more accurate in estimating organic-N, is less affected by hot temperatures, has a built in timer and can be useful for many different testing procedures. It costs about $899

50 cc syringe, 300 gram analytical balance (to 1/10 gram), or really good eyesight for filling dilution bottles (below) with exactly 200 ml deionized or distilled water

250 ml (8 oz) cylindrical plastic bottle with dispensing flip-top dropper lid
(Fisher Scientific phone 800-766-7000 part num. 02-926-1 $61.67 case of 24 or
Consolidated Plastics phone 800-362-1000 order bottles & dropper lids separately: bottles 41688LL $8.40 per dozen, 24 ml flip top cap 41241LL $2.64 per dozen

Distilled or deionized water. If dilution bottles are filled ahead of time, additional water will be needed for the test that was drawn at the same time, from the same source, and has been stored and handled the same as the water in the dilution bottle. This is because even distilled/deionized water can contain ammonium, which dissipates during storage. The reagent blank will account for this only if the reagent blank and sample water are identical.

*1000 ml wash bottle (Hach 620-16) *$6.25*

*2 clean and dry 10mL size sample cells, 1 inch pathlength. (Hach 24276-06) *$15.50 set of 6*

1 ml plastic syringe (without a needle) *Long's pharmacy in Ceres, $0.50 or ask your vet*

*Mineral stabilizing agent (Hach 23766-26) *$7.05*

*Dispersing agent (Hach 23765-26) *$6.10*

*Nessler reagent (Hach 21194-32) *$12.75/bottle*

lagoon water in a capped container

(optional) rack for sample cells, holds 24 25mm vials (Hach 24979-03) *$14.00 each*

(optional) calculator

timer (2 minutes)

(optional) hand held portable scale
Ohaus SC-4010 400g capacity, 0.1 gm readability, 50-104°F operating temp
$139.95 *or* Ohaus HP-320 320 g capacity, 0.2 gm accuracy, 64-77 °F operating temp
$124.95 www.itinscales.com phone (718) 336-5900

*order from HACH 1-800-227-4224

Materials Needed for Lagoon Water Nitrogen Quick Test
Attachment 2 D

UCCE Stanislaus County

Quick Test Ordering Information
As of 11-12-04

HACH (order online www.hach.com or call 800-227-4224)

- Pocket colorimeter $305.00 (# 5877-42)
- 1000 ml wash bottle $6.65 (#620-16)
- Sample cells $17.85 for 6 (#24476-06)
- Rack for sample cells $28.00 (#25518-00) **Optional**
- Mineral stabilizing agent $8.80 (#23765-26)
- Dispersing agent $7.65 (#2376526)
- Nessler reagent $15.10 (#21194-32)

Consolidated Plastics (call to place order 800-362-1000 or order online www.consolidatedplastics.com)

- 8 oz plastic bottles $9.12/dozen (#41688LW)
- 24 ml flip top caps #3.28/dozen (#41241LW)

Itin Scales (call to place order 718-336-5900 or order online www.itinscales.com)

- Ohaus $114.95 (#SP-401) **Optional**

You will also need a calculator, timer, 1 ml syringe, and a tool box to store your kit.

Quick Test Ordering Information
Attachment 2 D

Quick Test- procedure short list:

In preparation for tests, prepare the testing equipment as:
Label one plastic bottle as "Blank" to use for a control sample for the deionized waster. Use a permanent marker.
Label one glass 25 ml bottle as "Blank". Use a permanent marker.
If you like, label other bottles as "Sample One, Sample Two", etc. to help prevent confusion with multiple samples as you are mixing and filling.
Label the "Mineral Stabilizer" solution bottle as #1.
Label the "Polyvinyl Alcohol" solution bottle as #2.
Label the "Nessler Reagent" solution bottle as #3.

Caution- the Nessler Reagent has a pH of 10 which is vary "basic" and will burn your skin and damage your eyes. Wear eye and hand protection!

1 Fill one large plastic bottle to slightly less the 200 ml of deionized water to be used for the "blank" or "control" solution. This solution will determine what "color" is derived from water with "no" manure to set the colorimeter to "Zero".
2 Fill one large plastic bottle for each separate manure sample you will be testing. Normally only one unless you are pumping from several sources or sampling the irrigation water.
3 Using a scale, fill all these bottles to 200 ml.
4 Add one ml of manure water into one 200ml bottle. None in the "blank"
5 Mix the 200 ml bottles and squirt 10 ml from each, including the "blank" into the glass 25 (10) ml bottles.
6 Add one drop of solution #1 (mineral stabilizer) to each of the 10 ml bottles including the "blank".
7 Mix by gently turning the bottle upside down and right side up.
8 Add one drop of solution #2 (polyvinyl alcohol) to each 10 ml bottle including the "blank".
9 Mix by gently turning the bottle upside down and right side up.
10 Clean any finger or other smudges off the bottle. These may deflect the light and give a false reading
11 Turn the colorimeter on and "Zero" it with the "blank" 10 ml solution bottle by inserting it into the round receptacle, covering it with the cover to block out all outside light and pressing the blue "zero" button at the left side of the meter.
12 Place the 10 ml manure sample into the colorimeter and test it by pressing the green "check" button at the right of the tester. Using the field sample record chart, list this readout into the "(A) Dilute Manure Reading" column.
13 Add 0.5 ml of #3 (Nessler Reagent) into each of the 10 ml glass bottles including the "blank".
14 Mix by gently turning the bottle upside down and right side up.
15 Allow 2 minutes for the #3 solution to react in the samples and "blank".
16 Clean any finger or other smudges off the bottle. These may deflect the light and give a false reading.

Quick Test Procedure
Attachment 2 D

17 Place the "blank" again into the colorimeter and test it with the green "check" button at the left of the tester. List this readout into the "(B) Nessler Reagent Blank" column.
18 Place the manure sample 10 ml glass bottle the same way but list the readouts into the "(C) Nessler Total Manure" column.

The testing is now complete. Simply "do the math" as listed at the balance to the columns.
Note- if the manure is very dilute, add another 1 ml into the 200 ml bottle which will give double the results. Simply divide the results by 2 to determine the actual parts per million (ppm).

Quick Test Procedure
Attachment 2 D

Gallons per minute needed to achieve a target application rate

Target application: **30** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	120	133	150	171	200	240	300	399	599	799	1198	1498	1797	2097	2397	2696	2996
	75	80	89	100	114	133	160	200	266	399	533	799	999	1198	1398	1598	1797	1997
	100	60	67	75	86	100	120	150	200	300	399	599	749	899	1049	1198	1348	1498
	125	48	53	60	68	80	96	120	160	240	320	479	599	719	839	959	1078	1198
	150	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	200	30	33	37	43	50	60	75	100	150	200	300	374	449	524	599	674	749
	225	27	30	33	38	44	53	67	89	133	178	266	333	399	466	533	599	666
	250	24	27	30	34	40	48	60	80	120	160	240	300	359	419	479	539	599
	275	22	24	27	31	36	44	54	73	109	145	218	272	327	381	436	490	545
	300	20	22	25	29	33	40	50	67	100	133	200	250	300	350	399	449	499
	325	18	20	23	26	31	37	46	61	92	123	184	230	277	323	369	415	461
	350	17	19	21	24	29	34	43	57	86	114	171	214	257	300	342	385	428
	375	16	18	20	23	27	32	40	53	80	107	160	200	240	280	320	359	399
	400	15	17	19	21	25	30	37	50	75	100	150	187	225	262	300	337	374
	425	14	16	18	20	23	28	35	47	70	94	141	176	211	247	282	317	352
	450	13	15	17	19	22	27	33	44	67	89	133	166	200	233	266	300	333
	475	13	14	16	18	21	25	32	42	63	84	126	158	189	221	252	284	315
	500	12	13	15	17	20	24	30	40	60	80	120	150	180	210	240	270	300

Target application: **40** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	160	178	200	228	266	320	399	533	799	1065	1598	1997	2397	2796	3196	3595	3994
	75	107	118	133	152	178	213	266	355	533	710	1065	1331	1598	1864	2130	2397	2663
	100	80	89	100	114	133	160	200	266	399	533	799	999	1198	1398	1598	1797	1997
	125	64	71	80	91	107	128	160	213	320	426	639	799	959	1118	1278	1438	1598
	150	53	59	67	76	89	107	133	178	266	355	533	666	799	932	1065	1198	1331
	200	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	225	36	39	44	51	59	71	89	118	178	237	355	444	533	621	710	799	888
	250	32	36	40	46	53	64	80	107	160	213	320	399	479	559	639	719	799
	275	29	32	36	42	48	58	73	97	145	194	291	363	436	508	581	654	726
	300	27	30	33	38	44	53	67	89	133	178	266	333	399	466	533	599	666
	325	25	27	31	35	41	49	61	82	123	164	246	307	369	430	492	553	615
	350	23	25	29	33	38	46	57	76	114	152	228	285	342	399	457	514	571
	375	21	24	27	30	36	43	53	71	107	142	213	266	320	373	426	479	533
	400	20	22	25	29	33	40	50	67	100	133	200	250	300	350	399	449	499
	425	19	21	23	27	31	38	47	63	94	125	188	235	282	329	376	423	470
	450	18	20	22	25	30	36	44	59	89	118	178	222	266	311	355	399	444
	475	17	19	21	24	28	34	42	56	84	112	168	210	252	294	336	378	420
	500	16	18	20	23	27	32	40	53	80	107	160	200	240	280	320	359	399

Target application: **50** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	200	222	250	285	333	399	499	666	999	1331	1997	2497	2996	3495	3994	4494	4993
	75	133	148	166	190	222	266	333	444	666	888	1331	1664	1997	2330	2663	2996	3329
	100	100	111	125	143	166	200	250	333	499	666	999	1248	1498	1748	1997	2247	2497
	125	80	89	100	114	133	160	200	266	399	533	799	999	1198	1398	1598	1797	1997
	150	67	74	83	95	111	133	166	222	333	444	666	832	999	1165	1331	1498	1664
	200	50	55	62	71	83	100	125	166	250	333	499	624	749	874	999	1123	1248
	225	44	49	55	63	74	89	111	148	222	296	444	555	666	777	888	999	1110
	250	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	275	36	40	45	52	61	73	91	121	182	242	363	454	545	635	726	817	908
	300	33	37	42	48	55	67	83	111	166	222	333	416	499	583	666	749	832
	325	31	34	38	44	51	61	77	102	154	205	307	384	461	538	615	691	768
	350	29	32	36	41	48	57	71	95	143	190	285	357	428	499	571	642	713
	375	27	30	33	38	44	53	67	89	133	178	266	333	399	466	533	599	666
	400	25	28	31	36	42	50	62	83	125	166	250	312	374	437	499	562	624
	425	23	26	29	34	39	47	59	78	117	157	235	294	352	411	470	529	587
	450	22	25	28	32	37	44	55	74	111	148	222	277	333	388	444	499	555
	475	21	23	26	30	35	42	53	70	105	140	210	263	315	368	420	473	526
	500	20	22	25	29	33	40	50	67	100	133	200	250	300	350	399	449	499

University of California Cooperative Extension **Stanislaus County** 3/00

GPM Needed to Achieve a Target Application Rate

Gallons per minute needed to achieve a target application rate

Target application: **50** lbs N/A

	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
ppm in straight pond water	50	200	222	250	286	334	400	500	667	1001	1334	2001	2501	3002	3502	4002	4502	5003
	75	133	148	167	191	222	267	334	445	667	889	1334	1668	2001	2335	2668	3002	3335
	100	100	111	125	143	167	200	250	334	500	667	1001	1251	1501	1751	2001	2251	2501
	125	80	89	100	114	133	160	200	267	400	534	800	1001	1201	1401	1601	1801	2001
	150	67	74	83	95	111	133	167	222	334	445	667	834	1001	1167	1334	1501	1668
	200	50	56	63	71	83	100	125	167	250	334	500	625	750	875	1001	1126	1251
	225	44	49	56	64	74	89	111	148	222	296	445	556	667	778	889	1001	1112
	250	40	44	50	57	67	80	100	133	200	267	400	500	600	700	800	900	1001
	275	36	40	45	52	61	73	91	121	182	243	364	455	546	637	728	819	910
	300	33	37	42	48	56	67	83	111	167	222	334	417	500	584	667	750	834

Target application: **60** lbs N/A

	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
ppm in straight pond water	50	240	267	300	343	400	480	600	800	1201	1601	2401	3002	3602	4202	4803	5403	6003
	75	160	178	200	229	267	320	400	534	800	1067	1601	2001	2401	2802	3202	3602	4002
	100	120	133	150	172	200	240	300	400	600	800	1201	1501	1801	2101	2401	2701	3002
	125	96	107	120	137	160	192	240	320	480	640	961	1201	1441	1681	1921	2161	2401
	150	80	89	100	114	133	160	200	267	400	534	800	1001	1201	1401	1601	1801	2001
	200	60	67	75	86	100	120	150	200	300	400	600	750	900	1051	1201	1351	1501
	225	53	59	67	76	89	107	133	178	267	356	534	667	800	934	1067	1201	1334
	250	48	53	60	69	80	96	120	160	240	320	480	600	720	840	961	1081	1201
	275	44	49	55	62	73	87	109	146	218	291	437	546	655	764	873	982	1091
	300	40	44	50	57	67	80	100	133	200	267	400	500	600	700	800	900	1001

Target application: **70** lbs N/A

	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
ppm in straight pond water	50	280	311	350	400	467	560	700	934	1401	1868	2802	3502	4202	4903	5603	6303	7004
	75	187	208	233	267	311	374	467	623	934	1245	1868	2335	2802	3268	3735	4202	4669
	100	140	156	175	200	233	280	350	467	700	934	1401	1751	2101	2451	2802	3152	3502
	125	112	125	140	160	187	224	280	374	560	747	1121	1401	1681	1961	2241	2521	2802
	150	93	104	117	133	156	187	233	311	467	623	934	1167	1401	1634	1868	2101	2335
	200	70	78	88	100	117	140	175	233	350	467	700	875	1051	1226	1401	1576	1751
	225	62	69	78	89	104	125	156	208	311	415	623	778	934	1089	1245	1401	1556
	250	56	62	70	80	93	112	140	187	280	374	560	700	840	981	1121	1261	1401
	275	51	57	64	73	85	102	127	170	255	340	509	637	764	891	1019	1146	1273
	300	47	52	58	67	78	93	117	156	233	311	467	584	700	817	934	1051	1167

GPM Needed to Achieve a Target Application Rate

Gallons per minute needed to achieve a target application rate

Target application: **60** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	240	266	300	342	399	479	599	799	1198	1598	2397	2996	3595	4194	4793	5392	5992
	75	160	178	200	228	266	320	399	533	799	1065	1598	1997	2397	2796	3196	3595	3994
	100	120	133	150	171	200	240	300	399	599	799	1198	1498	1797	2097	2397	2696	2996
	125	96	107	120	137	160	192	240	320	479	639	959	1198	1438	1678	1917	2157	2397
	150	80	89	100	114	133	160	200	266	399	533	799	999	1198	1398	1598	1797	1997
	200	60	67	75	86	100	120	150	200	300	399	599	749	899	1049	1198	1348	1498
	225	53	59	67	76	89	107	133	178	266	355	533	666	799	932	1065	1198	1331
	250	48	53	60	68	80	96	120	160	240	320	479	599	719	839	959	1078	1198
	275	44	48	54	62	73	87	109	145	218	291	436	545	654	763	872	980	1089
	300	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	325	37	41	46	53	61	74	92	123	184	246	369	461	553	645	737	830	922
	350	34	38	43	49	57	68	86	114	171	228	342	428	514	599	685	770	856
	375	32	36	40	46	53	64	80	107	160	213	320	399	479	559	639	719	799
	400	30	33	37	43	50	60	75	100	150	200	300	374	449	524	599	674	749
	425	28	31	35	40	47	56	70	94	141	188	282	352	423	493	564	634	705
	450	27	30	33	38	44	53	67	89	133	178	266	333	399	466	533	599	666
	475	25	28	32	36	42	50	63	84	126	168	252	315	378	441	505	568	631
	500	24	27	30	34	40	48	60	80	120	160	240	300	359	419	479	539	599

Target application: **70** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	280	311	350	399	466	559	699	932	1398	1864	2796	3495	4194	4893	5592	6291	6990
	75	186	207	233	266	311	373	466	621	932	1243	1864	2330	2796	3262	3728	4194	4660
	100	140	155	175	200	233	280	350	466	699	932	1398	1748	2097	2447	2796	3146	3495
	125	112	124	140	160	186	224	280	373	559	746	1118	1398	1678	1957	2237	2516	2796
	150	93	104	117	133	155	186	233	311	466	621	932	1165	1398	1631	1864	2097	2330
	200	70	78	87	100	117	140	175	233	350	466	699	874	1049	1223	1398	1573	1748
	225	62	69	78	89	104	124	155	207	311	414	621	777	932	1087	1243	1398	1553
	250	56	62	70	80	93	112	140	186	280	373	559	699	839	979	1118	1258	1398
	275	51	56	64	73	85	102	127	169	254	339	508	635	763	890	1017	1144	1271
	300	47	52	58	67	78	93	117	155	233	311	466	583	699	816	932	1049	1165
	325	43	48	54	61	72	86	108	143	215	287	430	538	645	753	860	968	1075
	350	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	375	37	41	47	53	62	75	93	124	186	249	373	466	559	652	746	839	932
	400	35	39	44	50	58	70	87	117	175	233	350	437	524	612	699	786	874
	425	33	37	41	47	55	66	82	110	164	219	329	411	493	576	658	740	822
	450	31	35	39	44	52	62	78	104	155	207	311	388	466	544	621	699	777
	475	29	33	37	42	49	59	74	98	147	196	294	368	441	515	589	662	736
	500	28	31	35	40	47	56	70	93	140	186	280	350	419	489	559	629	699

Target application: **80** lbs N/A

ppm in straight pond water	hrs/ac	10	9	8	7	6	5	4	3	2	1.5	1	0.8	0.7	0.6	0.5	0.4	0.4
	acres/hr	0.1	0.11	0.13	0.14	0.17	0.2	0.25	0.3	0.5	0.7	1	1.25	1.5	1.75	2.0	2.25	2.5
	50	320	355	399	457	533	639	799	1065	1598	2130	3196	3994	4793	5592	6391	7190	7989
	75	213	237	266	304	355	426	533	710	1065	1420	2130	2663	3196	3728	4261	4793	5326
	100	160	178	200	228	266	320	399	533	799	1065	1598	1997	2397	2796	3196	3595	3994
	125	128	142	160	183	213	256	320	426	639	852	1278	1598	1917	2237	2556	2876	3196
	150	107	118	133	152	178	213	266	355	533	710	1065	1331	1598	1864	2130	2397	2663
	200	80	89	100	114	133	160	200	266	399	533	799	999	1198	1398	1598	1797	1997
	225	71	79	89	101	118	142	178	237	355	473	710	888	1065	1243	1420	1598	1775
	250	64	71	80	91	107	128	160	213	320	426	639	799	959	1118	1278	1438	1598
	275	58	65	73	83	97	116	145	194	291	387	581	726	872	1017	1162	1307	1453
	300	53	59	67	76	89	107	133	178	266	355	533	666	799	932	1065	1198	1331
	325	49	55	61	70	82	98	123	164	246	328	492	615	737	860	983	1106	1229
	350	46	51	57	65	76	91	114	152	228	304	457	571	685	799	913	1027	1141
	375	43	47	53	61	71	85	107	142	213	284	426	533	639	746	852	959	1065
	400	40	44	50	57	67	80	100	133	200	266	399	499	599	699	799	899	999
	425	38	42	47	54	63	75	94	125	188	251	376	470	564	658	752	846	940
	450	36	39	44	51	59	71	89	118	178	237	355	444	533	621	710	799	888
	475	34	37	42	48	56	67	84	112	168	224	336	420	505	589	673	757	841
	500	32	36	40	46	53	64	80	107	160	213	320	399	479	559	639	719	799

University of California Cooperative Extension **Stanislaus County** 3/00

GPM Needed to Achieve a Target Application Rate

Gallons per minute needed to achieve a target application rate

Target application: **30** lbs N/A

ppm in straight pond water	min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
	acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
	50	2397	2696	2996	3295	3595	3895	4194	4494	4793	5093	5392	5692	5992	6536	7190
	75	1598	1797	1997	2197	2397	2596	2796	2996	3196	3395	3595	3795	3994	4358	4793
	100	1198	1348	1498	1648	1797	1947	2097	2247	2397	2546	2696	2846	2996	3268	3595
	125	959	1078	1198	1318	1438	1558	1678	1797	1917	2037	2157	2277	2397	2615	2876
	150	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
	200	599	674	749	824	899	974	1049	1123	1198	1273	1348	1423	1498	1634	1797
	225	533	599	666	732	799	865	932	999	1065	1132	1198	1265	1331	1453	1598
	250	479	539	599	659	719	779	839	899	959	1019	1078	1138	1198	1307	1438
	275	436	490	545	599	654	708	763	817	872	926	980	1035	1089	1188	1307
	300	399	449	499	549	599	649	699	749	799	849	899	949	999	1089	1198
	325	369	415	461	507	553	599	645	691	737	784	830	876	922	1006	1106
	350	342	385	428	471	514	556	599	642	685	728	770	813	856	934	1027
	375	320	359	399	439	479	519	559	599	639	679	719	759	799	872	959
	400	300	337	374	412	449	487	524	562	599	637	674	712	749	817	899
	425	282	317	352	388	423	458	493	529	564	599	634	670	705	769	846
	450	266	300	333	366	399	433	466	499	533	566	599	632	666	726	799
	475	252	284	315	347	378	410	441	473	505	536	568	599	631	688	757
	500	240	270	300	330	359	389	419	449	479	509	539	569	599	654	719

Target application: **40** lbs N/A

ppm in straight pond water	min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
	acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
	50	3196	3595	3994	4394	4793	5193	5592	5992	6391	6790	7190	7589	7989	8715	9587
	75	2130	2397	2663	2929	3196	3462	3728	3994	4261	4527	4793	5060	5326	5810	6391
	100	1598	1797	1997	2197	2397	2596	2796	2996	3196	3395	3595	3795	3994	4358	4793
	125	1278	1438	1598	1758	1917	2077	2237	2397	2556	2716	2876	3036	3196	3486	3835
	150	1065	1198	1331	1465	1598	1731	1864	1997	2130	2263	2397	2530	2663	2905	3196
	200	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
	225	710	799	888	976	1065	1154	1243	1331	1420	1509	1598	1687	1775	1937	2130
	250	639	719	799	879	959	1039	1118	1198	1278	1358	1438	1518	1598	1743	1917
	275	581	654	726	799	872	944	1017	1089	1162	1235	1307	1380	1453	1585	1743
	300	533	599	666	732	799	865	932	999	1065	1132	1198	1265	1331	1453	1598
	325	492	553	615	676	737	799	860	922	983	1045	1106	1168	1229	1341	1475
	350	457	514	571	628	685	742	799	856	913	970	1027	1084	1141	1245	1370
	375	426	479	533	586	639	692	746	799	852	905	959	1012	1065	1162	1278
	400	399	449	499	549	599	649	699	749	799	849	899	949	999	1089	1198
	425	376	423	470	517	564	611	658	705	752	799	846	893	940	1025	1128
	450	355	399	444	488	533	577	621	666	710	754	799	843	888	968	1065
	475	336	378	420	463	505	547	589	631	673	715	757	799	841	917	1009
	500	320	359	399	439	479	519	559	599	639	679	719	759	799	872	959

Target application: **50** lbs N/A

ppm in straight pond water	min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
	acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
	50	3994	4494	4993	5492	5992	6491	6990	7490	7989	8488	8987	9487	9986	10894	11983
	75	2663	2996	3329	3662	3994	4327	4660	4993	5326	5659	5992	6324	6657	7263	7989
	100	1997	2247	2497	2746	2996	3245	3495	3745	3994	4244	4494	4743	4993	5447	5992
	125	1598	1797	1997	2197	2397	2596	2796	2996	3196	3395	3595	3795	3994	4358	4793
	150	1331	1498	1664	1831	1997	2164	2330	2497	2663	2829	2996	3162	3329	3631	3994
	200	999	1123	1248	1373	1498	1623	1748	1872	1997	2122	2247	2372	2497	2723	2996
	225	888	999	1110	1221	1331	1442	1553	1664	1775	1886	1997	2108	2219	2421	2663
	250	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
	275	726	817	908	999	1089	1180	1271	1362	1453	1543	1634	1725	1816	1981	2179
	300	666	749	832	915	999	1082	1165	1248	1331	1415	1498	1581	1664	1816	1997
	325	615	691	768	845	922	999	1075	1152	1229	1306	1383	1459	1536	1676	1844
	350	571	642	713	785	856	927	999	1070	1141	1213	1284	1355	1427	1556	1712
	375	533	599	666	732	799	865	932	999	1065	1132	1198	1265	1331	1453	1598
	400	499	562	624	687	749	811	874	936	999	1061	1123	1186	1248	1362	1498
	425	470	529	587	646	705	764	822	881	940	999	1057	1116	1175	1282	1410
	450	444	499	555	610	666	721	777	832	888	943	999	1054	1110	1210	1331
	475	420	473	526	578	631	683	736	788	841	893	946	999	1051	1147	1261
	500	399	449	499	549	599	649	699	749	799	849	899	949	999	1089	1198

University of California Cooperative Extension **Stanislaus County** 12/99

GPM Needed to Achieve a Target Application Rate

Gallons per minute needed to achieve a target application rate

Target application: **60** lbs N/A

min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
ppm in straight pond water															
50	4793	5392	5992	6591	7190	7789	8388	8987	9587	10186	10785	11384	11983	13073	14380
75	3196	3595	3994	4394	4793	5193	5592	5992	6391	6790	7190	7589	7989	8715	9587
100	2397	2696	2996	3295	3595	3895	4194	4494	4793	5093	5392	5692	5992	6536	7190
125	1917	2157	2397	2636	2876	3116	3355	3595	3835	4074	4314	4554	4793	5229	5752
150	1598	1797	1997	2197	2397	2596	2796	2996	3196	3395	3595	3795	3994	4358	4793
200	1198	1348	1498	1648	1797	1947	2097	2247	2397	2546	2696	2846	2996	3268	3595
225	1065	1198	1331	1465	1598	1731	1864	1997	2130	2263	2397	2530	2663	2905	3196
250	959	1078	1198	1318	1438	1558	1678	1797	1917	2037	2157	2277	2397	2615	2876
275	872	980	1089	1198	1307	1416	1525	1634	1743	1852	1961	2070	2179	2377	2615
300	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
325	737	830	922	1014	1106	1198	1291	1383	1475	1567	1659	1751	1844	2011	2212
350	685	770	856	942	1027	1113	1198	1284	1370	1455	1541	1626	1712	1868	2054
375	639	719	799	879	959	1039	1118	1198	1278	1358	1438	1518	1598	1743	1917
400	599	674	749	824	899	974	1049	1123	1198	1273	1348	1423	1498	1634	1797
425	564	634	705	775	846	916	987	1057	1128	1198	1269	1339	1410	1538	1692
450	533	599	666	732	799	865	932	999	1065	1132	1198	1265	1331	1453	1598
475	505	568	631	694	757	820	883	946	1009	1072	1135	1198	1261	1376	1514
500	479	539	599	659	719	779	839	899	959	1019	1078	1138	1198	1307	1438

Target application: **70** lbs N/A

min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
ppm in straight pond water															
50	5592	6291	6990	7689	8388	9087	9786	10485	11184	11883	12582	13281	13980	15251	16777
75	3728	4194	4660	5126	5592	6058	6524	6990	7456	7922	8388	8854	9320	10168	11184
100	2796	3146	3495	3845	4194	4544	4893	5243	5592	5942	6291	6641	6990	7626	8388
125	2237	2516	2796	3076	3355	3635	3915	4194	4474	4753	5033	5313	5592	6101	6711
150	1864	2097	2330	2563	2796	3029	3262	3495	3728	3961	4194	4427	4660	5084	5592
200	1398	1573	1748	1922	2097	2272	2447	2621	2796	2971	3146	3320	3495	3813	4194
225	1243	1398	1553	1709	1864	2019	2175	2330	2485	2641	2796	2951	3107	3389	3728
250	1118	1258	1398	1538	1678	1817	1957	2097	2237	2377	2516	2656	2796	3050	3355
275	1017	1144	1271	1398	1525	1652	1779	1906	2034	2161	2288	2415	2542	2773	3050
300	932	1049	1165	1282	1398	1515	1631	1748	1864	1981	2097	2214	2330	2542	2796
325	860	968	1075	1183	1291	1398	1506	1613	1721	1828	1936	2043	2151	2346	2581
350	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
375	746	839	932	1025	1118	1212	1305	1398	1491	1584	1678	1771	1864	2034	2237
400	699	786	874	961	1049	1136	1223	1311	1398	1485	1573	1660	1748	1906	2097
425	658	740	822	905	987	1069	1151	1234	1316	1398	1480	1563	1645	1794	1974
450	621	699	777	854	932	1010	1087	1165	1243	1320	1398	1476	1553	1695	1864
475	589	662	736	809	883	957	1030	1104	1177	1251	1324	1398	1472	1605	1766
500	559	629	699	769	839	909	979	1049	1118	1188	1258	1328	1398	1525	1678

Target application: **80** lbs N/A

min/acre	30	27	24	22	20	18	17	16	15	14	13	13	12	11	10
acres/hr	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.5	6
ppm in straight pond water															
50	6391	7190	7989	8788	9587	10385	11184	11983	12782	13581	14380	15179	15978	17430	19173
75	4261	4793	5326	5858	6391	6924	7456	7989	8521	9054	9587	10119	10652	11620	12782
100	3196	3595	3994	4394	4793	5193	5592	5992	6391	6790	7190	7589	7989	8715	9587
125	2556	2876	3196	3515	3835	4154	4474	4793	5113	5432	5752	6071	6391	6972	7669
150	2130	2397	2663	2929	3196	3462	3728	3994	4261	4527	4793	5060	5326	5810	6391
200	1598	1797	1997	2197	2397	2596	2796	2996	3196	3395	3595	3795	3994	4358	4793
225	1420	1598	1775	1953	2130	2308	2485	2663	2840	3018	3196	3373	3551	3873	4261
250	1278	1438	1598	1758	1917	2077	2237	2397	2556	2716	2876	3036	3196	3486	3835
275	1162	1307	1453	1598	1743	1888	2034	2179	2324	2469	2615	2760	2905	3169	3486
300	1065	1198	1331	1465	1598	1731	1864	1997	2130	2263	2397	2530	2663	2905	3196
325	983	1106	1229	1352	1475	1598	1721	1844	1966	2089	2212	2335	2458	2682	2950
350	913	1027	1141	1255	1370	1484	1598	1712	1826	1940	2054	2168	2283	2490	2739
375	852	959	1065	1172	1278	1385	1491	1598	1704	1811	1917	2024	2130	2324	2556
400	799	899	999	1098	1198	1298	1398	1498	1598	1698	1797	1897	1997	2179	2397
425	752	846	940	1034	1128	1222	1316	1410	1504	1598	1692	1786	1880	2051	2256
450	710	799	888	976	1065	1154	1243	1331	1420	1509	1598	1687	1775	1937	2130
475	673	757	841	925	1009	1093	1177	1261	1345	1430	1514	1598	1682	1835	2018
500	639	719	799	879	959	1039	1118	1198	1278	1358	1438	1518	1598	1743	1917

University of California Cooperative Extension **Stanislaus County** 12/99

GPM Needed to Achieve a Target Application Rate

Pounds per hour from gpm and ppm

Lbs./Hr. from PPM and GPM

ppm N in lagoon water \ gpm	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
20	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
40	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
60	5	6	8	9	11	12	14	15	17	18	20	21	23	24	26	27
80	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
100	8	10	13	15	18	20	23	25	28	30	33	35	38	40	43	45
120	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
140	11	14	18	21	25	28	32	35	39	42	46	49	53	56	60	63
160	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72
180	14	18	23	27	32	36	41	45	50	54	59	63	68	72	77	81
200	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
220	17	22	28	33	39	44	50	55	61	66	72	77	83	88	94	99
240	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108
260	20	26	33	39	46	52	59	65	72	78	85	91	98	104	111	117
280	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126
300	23	30	38	45	53	60	68	75	83	90	98	105	113	120	128	135
320	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144
340	26	34	43	51	60	68	77	85	94	102	111	119	128	136	145	153
360	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162
380	29	38	48	57	67	76	86	95	105	114	124	133	143	152	162	171
400	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
420	32	42	53	63	74	84	95	105	116	126	137	147	158	168	179	189
440	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198
460	35	46	58	69	81	92	104	115	127	138	150	161	173	184	196	207
480	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216
500	38	50	63	75	88	100	113	125	138	150	163	175	188	200	213	225
520	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234
540	41	54	68	81	95	108	122	135	149	162	176	189	203	216	230	243
560	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252
580	44	58	73	87	102	116	131	145	160	174	189	203	218	232	247	261

(ppm x .008345) = lbs/1000 gals

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ATTACHMENT 3

Receipt from Environmental Health Services Division

Material Safety Data Sheets

HAZARDOUS MATERIALS BUSINESS PLAN

Sozinho Dairy
11447 8 ½ Ave.
Kings County

Submitted to:
Kings County Dept. of Public Health
Environmental Health Services Division
330 Campus Dr.
Hanford, CA 93230

August 31, 2009

Prepared by:

Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361
(209) 848-8674 Fax: (209) 848-8654

David Avila , President

MSDS
Definition of terms

Material Safety Data Sheet for #2 Diesel

1. Chemical Product

MSDS Number: U7770

MSDS Date: 01-31-99

Product Name: #2 Diesel Fuel

24 Hour Emergency Phone: (210) 979-8346
Transportation Emergencies: Call Chemtrec at 1-800-424-9300
MSDS Assistance: (210) 592-4593

Distributors Name and Address:
T.W. Brown Oil Co., Inc.
1857 Knoll Drive
Ventura, California 93003

Chemical Name:#2 Diesel Fuel **Cas Number:** 68476-34-6

Synonyms/Common Names: This Material Safety Data Sheet applies to the following product descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product, and are not reflected in this document. Consult specification sheets for technical information.

California Air Resources Board (Carb) Diesel Fuel- On-road, Off-Road, Tax Exempt blends
Premium Diesel Fuel- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Distillate- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Diesel Fuel- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends
#2 Fuel Oil- Low-Sulfur, High-sulfur, On-Road, Off-Road, Tax Exempt blends

2. Composition, Information On Ingredients

Product Use: This product is intended for use as a fuel in engines and heaters designed for diesel fuels, and for use in engineered processes. Use in other applicatiions may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

Description: #2 Diesel is a complex mixture of hydrocarbons from a variety of chemical processes blended to meet standardized product specifications. Composition varies greatly and includes C9 to C20 hydrocarbons with a boiling range of about 325-675 degrees F. The following is a non-exhaustive list of common components, typical percentage ranges in product, and occupational exposure limits for each.

Component or Material Name	%	CAS Number	ACGIH Limits TLV -- STEL -- Units	OSHA Exposure Limits PEL -- STEL -- C/P -- Units
Cat cracked distillate, light	0-100	64741-59-9	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Hydrotreated distillate, middle	0-100	64742-46-7	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Hydrotreated distillate, light	0-100	64742-47-8	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Gas oil, light	0-100	64741-44-2	100 -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A

3. Hazards Identification

Health Hazard Data:

1. The major effect of exposure to this product is giddiness, headache, central nervous system depression; possible irritation of eyes, nose, and lungs; and dermal irritation. Signs of kidney and liver damage may be

delayed. Pulmonary irritation secondary to exhalation fo solvent.

2. NIOSH recommends that whole diesel engine exhaust be regarded as a potential occupational carcinogen. Follow OSHA and NSHA rules where diesel engine exhaust fumes may be generated.

3. A life time skin painting study by the American Petroleum Institute has shown that similar naphtha products with a boiling range of 350-700 degrees F usually produce skin tumors and/ or skin cancers in laboratory mice. Only a weak to moderate response occurred. The effect to humans has not been determined.

4. Positive results at 2.0 ml/kg and 6.0 ml/kg noted in mutagenesis studies via in-vivo bone marrow cytogenetics assay in rats.

5. Kerosene is classified as a severe skin irritant. Mutation data has been reported for kerosene products. Hydrotreated kerosene is listed as being probably carcinogenic to humans with limited evidence in humans and sufficient evidence in experimental animals.

Hazards of Combustion Products: Carbon monoxide and carbon dioxide can be found in the combustion products of this product and other forms of hydrocarbon combustion. Carbon monoxide in moderate concentrations can cause symptoms of headache, nausea, vomiting, increased cardiac output, and confusion. Exposure to higher concentrations of carbon monoxide can cause loss of consciousness, heart damage, brain damage, and/or death. Exposure to high concentrations of carbon dioxide can cause simple asphyxiation by displacing available oxygen. Combustion of this and other similar materials should only be carried out in well ventilated areas.

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MSDS
Definition of terms

Material Safety Data Sheet #2 Diesel

Medical Condition Generally Aggravated By Exposure: Medical conditions which have the same symptoms and effects as those outlined under the health hazard information section can be aggraved by exposure to this product.

Medical Limitation: N/A

Routes Of Exposure

Inhalation: Irritation of the upper respiratory tract and eyes, with possible euphoria, dizziness, headache, discoordination, ringing in the ears, convulsions, coma, and respiratory arrest.

Skin Contact: Defatting of the skin may occur with continued and prolonged contact. Irritation and burning sensation may occur on exposure to the liquid or mists.

Skin Absorption: Not significant.

Eye Contact: Severe burning sensation with temporary irritation and swelling of lids.

Ingestion: Irritation of the mucous membranes of throat, esophagus and stomach which may result in nausea and vomiting; central nervous system depression may occur, if absorbed (see inhalation symptoms above). If aspirated, chemical pneumonitis may occur with potentially fatal results. Possible kidney and liver damage may be delayed. (See Notes to Physician in Section 5)

Carcinogenicity Statement: #2 Diesel is not listed as carcinogenic by NTP, OSHA, and ACGIH. IARC has listed kerosene and light catalytic cracked distillates as a probable human carcinogen. Light paraffinic hydrotreated petroleum distillates are listed as confirmed human carcinogens by IARC.

4. First Aid Measures

Eyes: Immediately flush eyes with large amount of water for at least 15 minutes holding lids apart to ensure flushing of the entire eye surface. **SEEK IMMEDIATE MEDICAL ATTENTION.**

Skin: Wash contaminated areas with plenty of soap and water. A soothing ointment may be applied to irritated skin after thoroughly cleansing. Remove contaminated clothing and footwear. **SEEK IMMEDIATE MEDICAL ATTENTION.**

Inhalation: Get person out of contaminated area to fresh air. If breathing has stopped resuscitate and administer oxygen if readily available. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

INGESTION: Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Note to Physician: Do not induce vomiting, use gastric lavage only. Aspiration of liquid into the lungs could result in Chemical pneumonitis. Use of adrenaline is not advised. Treat symptomatically.

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MSDS
Definition of terms

Material Safety Data Sheet for #2 Diesel

5. Fire and Explosion Data

Flash Point: 100 degrees F PM (minimum)
Autoignition Temperature: 494 degrees F
Flammable Limits In Air: UEL: 5% - LEL: 0.7%

Extinguishing Media: Use dry chemical, carbon dioxide, foam or water spray. Water may be ineffective in fighting fires of liquids with low flash points, but water should be used to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect persons attempting to stop a leak.

Special Fire Fighting Procedures: Pressure-demand, self contained, breathing apparatus should be provided for fire fighters in buildings or confined areas where product is stored.

Unusual Fire And Explosion Hazard: Vapor accumulation is possible, and flashback can occur with explosive force if vapors are ignited.

6. Accidental Release Measures

If material is spilled, steps should be taken to contain liquid and prevent discharges to streams or sewer systems and control or stop the loss of volatile materials to the atmosphere. Spills or releases should be reported, if required to the appropriate local, state and federal regulatory agencies.

Small Spills: Remove ignition sources. Absorb spilled material with non-combustible materials such as cat litter, dirt, sand, or petroleum sorbent pads/pillows. Do not use combustible materials like rags, wood chips, or saw dust. Remove contaminated materials to an appropriate disposal container.

Large Spills: Remove ignition sources. Dike spill area with sand or dirt to contain material and cover sewers/drains. Remain upwind and keep unnecessary people away. Contact trained emergency response team for cleanup. Remove liquid using grounded suction pumps, isolate hazard area and deny entry.

7. Handling and Storage Information

Store only in approved containers. Protect containers against physical damage. Outside or detached storage is preferred. Separate from oxidizing materials. Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition. Keep away from incompatible materials and follow OSHA 29 CFR 1910.106 and NFPA 30 for storage requirements.

Product Use: This product is intended for use as a fuel in engines and heaters designed for kerosene or diesel fuels, and for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

8. Exposure Controls/Personal Protection

Ventilation Requirements: Work in well ventilated areas using good engineering practices to process, transfer and store. Special ventilation in not required unless product is sprayed or heated. High volume use may require engineering controls.

Specific Personal Protective Equipment

Respiratory: Respiratory protection is not required unless product is sprayed or heated. Use NIOSH approved respiratory protection following manufacture's recommendations where spray, mists, or vapors may be generated. Supplied air respiratory protection is required for IDLH areas. See 29 CFR 1910.134 for OSHA Respirator Protection regulations.

Eye: Face shield and goggles or chemical goggles should be worn where mist or spray may be generated, and

where splashing occurs. Shower and eyewash facilities should be accessible.

Gloves: Impermeable protective gloves such as nitrile gloves should be worn during routine handling of this product. Barrier creams may also be appropriate where tactile sensitivity is required.

Other Clothing and Equipment: Clothing contaminated with this product should be removed and laundered before reuse. Items which can not be laundered should be discarded. Allow contaminated items to air dry or hang in a well ventilated area. Spontaneous combustion or fire may result from contaminated materials being placed together before drying.

Exposure Monitoring

Biological: No applicable procedure, breath analysis for hydrocarbons has been suggested.

Personal/Area: Based on similarity to kerosene, both active and passive monitors employing charcoal adsorption follow by gas chromatography. An average molecular weight of 170 has been suggested as the average value to convert the determined weight of hydrocarbons to ppm. Direct reading colorimetric tubes are available to evaluate short term exposure.

9. Physical and Chemical Properties

Appearance and Odor: Colorless to straw, or red oily liquid with characteristic kerosene-like odor.
Viscosity: Specification dependent, 1.7 - 3.4 cSt @ 140 degrees F
Boiling Range @ 760 mm Hg: 302-644 degrees F
Vapor Density (Air=1): 4.5 (kerosene)
Evaporation Rate (BuAc=1): N/A
Specific Gravity (H2O=1): 0.865
Bulk Density At 60 degrees F: 6.8-7.2 lbs./gal.
Solubility in H2O % by WT.: Insoluble
Freezing Point: -51 degrees F
Vapor Pressure: 0.5 mmHg @ 20 degrees C
% Volatiles By Vol.: N/A
API Gravity: Specification dependent
pH: NA

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MSDS
Definition of terms

Material Safety Data Sheet for #2 Diesel

10. Stability and Reactivity Information

Conditions Contributing to Instability: Under normal conditions, the material is stable. Avoid sources of ignition such as flames, hot surfaces, sparks, and electrical equipment.

Incompatibility: Avoid contact with strong oxidizers such as chlorine, concentrated oxygen, and sodium hypochlorite or other hypochlorites.

Hazardous Decomposition Products: Thermal decomposition products may include carbon monoxide, carbon dioxide, oxides of sulfur and nitrogen, and other toxic gases

Hazardous Polymerization: Material is not known to polymerize.

11. Toxicological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

12. Ecological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

13. Disposal Considerations

Shipment, storage, disposal, and cleanup actions of waste materials are regulated under local, state and federal rules. Contact the appropriate agencies if uncertain of applicability. Waste product and contaminated material having a flash point below 140 degrees F is considered a hazardous waste. DOT Hazardous Waste Number D001 applies. Consult 40 CFR 262 for EPA disposal requirements.

14. Transport Information

DOT Proper Shipping Name	Combustible Liquid, n.o.s	Diesel Fuel
DOT Hazard Class*	Combustible Liquid	3*
DOT Packing Group (PG)	III	III
I.D. Number	UN 1993	NA 1993
Required Labeling	None	Flammable Liquid

* Since this product has a flash point >100 degrees F and no other hazard class applies, it may be reclassed as Combustible Liquid and NA 1993 substituted for the product specific I.D.

Number above. Consult 49 CFR 173.120 for specific details.

15. Regulatory Information

TSCA (Toxic Substance Control Act) Inventory

Gasoline is listed in the TSCA inventory.

SARA (Superfund Amendments and Reauthorization Act) TITLE III

This product is reportable under SARA Title III, Sections 311 & 312 as a hazardous substance.

Hazard Categories Applicable under 40 DFR 370.2 (SARA Section 311):

Acute Health	Chronic Health	Pressure	Fire	Reactive
Yes	Yes	No	Yes	No

Components Listed under 40 CFR 372.65 (SARA Section 313):

This product does not contain chemicals identified as toxic by EPA under CFR part 372 and is not subject to the reporting requirements of this section.

State Regulations:

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

16. Other Information

NFPA (National Fire Protection Association) Hazard Ratings Codes*

Fire	Health	Reactivity	Other
2	1	0	Blank

*Based on Standard System for the Identification of the Fire Hazards of Materials, NFPA No. 704 M

This material safety data sheet was prepared by T. W. Brown Oil Co., Inc. in accordance with 29 CFR 1910.1200. All information, recommendations and suggestions appearing herein concerning this product are based upon tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by T. W. Brown Oil Co., Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of the product nor does T. W. Brown Oil Co., Inc. assume any liability arising out of use by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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1. Chemical Product

MSDS Number: U4080

MSDS Date: 01-1-99

Product Name: Gasoline

24 Hour Emergency Phone: (210) 979-8346
Transportation Emergencies: Call Chemtrec at 1-800-424-9300
MSDS Assistance: (210) 592-4593

Distributors Name and Address:

T.W. Brown Oil Co., Inc.
1857 Knoll Drive
Ventura, California 93003

Chemical Name: Gasoline **Cas Number:** 8006-61-9

Synonyms/Common Names: This Material Safety Data Sheet applies to the following product descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product, and are not reflected in this document. Consult specification sheets for technical information.

Unleaded Ggasoline Blendstocks/Subgrades- all types, grades, octanes, and vapor pressures.
California Air Resources Board (Carb) Gasoline- all grades, octanes, vapor pressures, and oxygenate blends.
Reformulated Gasoline (RFG)-all grades, octanes, vapor pressures, and oxygenate blends.
California Reformulated Gasoline (CARFG)-all grades, octanes, vapor pressures, and oxygenate blends.
Conventional Gasoline-all grades, octanes, vapor pressures, and oxygenate blends.

2. Composition, Information On Ingredients

Product Use: This product is intended for use as a fuel in engines or for use in engineered processes. Use in other applicatiions may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

Description: Reformulated gasoline is a complex mixture of hydrocarbons from a variety of chemical processes blended to meet standardized product specifications. Composition varies greatly and includes C? to C? hydrocarbons with a boiling range of about 80-473 degrees F. The following is a non-exhaustive list of common components, typical percentage ranges in product, and occupational exposure limits for each. Functional and performance additives may also be present at concentrations below reporting thresholds.

Component or Material Name	%	CAS Number	ACGIH Limits TLV -- STEL -- Units	OSHA Exposure Limits PEL -- STEL -- C/P -- Units
Gasoline	90-100	Mixture	300--500--ppm	NA--NA--NA -- ----

Butane	<9	106-97-8	800--NA--ppm	NA--NA--NA -- ----
Pentane	<6	109-66-0	600--750--ppm	1000--NA--NA--ppm
n-Hexane	<4	110-54-3	50--NA--ppm	500--NA--NA--ppm
Hexan(other isomers)	<8	NA	500--1,000--ppm	NA--NA--NA-- ----
Benzene	1.2 - 4.9	7-4-2	0.5--2.5--ppm	1--5--NA--ppm
N-heptane	<2	14-82-5	400--500--ppm	500--NA--NA--ppm
Ethylbenzene	<2	100-41-4	100--125--ppm	100--NA--NA--ppm
Xylene (o,m,p, - isomers)	<11	1330-20-7	100--150--ppm	100--NA--NA--ppm
Cyclohexane	<2	110-82-7	300--NA--ppm	300--NA--NA--ppm
Trimethylbenzene	<4	25551-13-7	25--NA--ppm	NA-NA-NA- ----
Methyl-t-butyl ether (MTBE)	0-15	1634-04-4	40--NA--ppm	NA-NA-NA- ----
Toluene	<12	108-88-3	50-NA-ppm	200-300/500-NA-ppm
Ethyl-t-butyl ether (ETBE)	0-7	637-92-3	N/A-NA-ppm	NA-NA-NA- ----
t-amyl-methyl-ether	0-5	994-05-8	N/A-NA-ppm	NA-NA-NA- ----
Ethanol	0-11	64-17-5	1,000-NA-ppm	1,000-NA-NA-ppm

C=Ceiling concentration not to be exceeded at any tume. P= Peak concentration for a single 10 minute exposure per day.

3. Hazards Identification

Health Hazard Data:

1. The major effect of exposure to this product is central nervous system depression and polyneuropathy.

2. Studies have shown that repeated exposure of laboratory animals to high concentrations of whole gasoline vapors at 67,262 and 2056 ppm has caused kidney damage and cancer of the kidney in rats and liver cancer in mice.

3. LARC has listed gasoline as possibly carcinogenic (2B) to humans with limited evidence in humans in the absence of sufficient evidence in experimental animals. NIOSH lists gasoline as a carcinogen with no further classification.

4. N-heptane and cyclohexane cause narcosis and irritation of eyes and mucous membranes. Cyclohexane has been reported to cause liver and kidney changes in rabbits. N-heptane has been reported to cause polyneuritis following prolonged exposure.

5. ACGIH lists benzene a human carcinogen with and assigned TLV of 0.5 ppm 8 hour TWA and a STEL of 2.5 ppm; IARC, NTP $ OSHA show sufficient evidence for classifying Benzene as a human carcinogen, see 29 CGR 1910.1028 for current PEL of 1 ppm and specific actions to take. Studies have shown that benzene can induce leukemia at concentrations as low as 1 ppm. Significant elevations of chromosomal aberrations have been corroborated among workers exposed to levels at mean concentrations less than 10 ppm. Based on risk assessment studies by Rinsky, an individual inhaling 1 ppm of benzene for 40 years, the odds of benzene-induced leukemic death were 1.7 times higher than those of unexposed workers.

6. MTBE is a mild irritant to the eye with an LC50 of 85 mg/m3 on 4 hr. exposure and an LD50 ~4 ml/Kg (RATS). An increase in anesthesia with increasing concentration (250,500 & 1000 ppm) was observed during a 90 day Test exposure. ACGIH has listed MTBE as an animal carcinogen (A3) based on tests in experimental animals at relatively high dose levels, by routes of

administration, at sites, of histologic types, or by mechanisms not considered relevant to worker exposure. Available evidence suggests that MTBE is not likely to cause cancer in humans except under uncommon or unlikely routes of levels of exposure.

7. Trimethylbenzene (pseudocumene (1,2,4,) & mesitylene (1,2,5,)) has a PEL and TLV of 25 ppm 8 hr. TWA; the isomers may cause nervousness, tension, and anxiety and asthmatic bronchitis.

8. n-Hexane has been shown to cause polyneuropathy (peripheral nerve damage) after repeated and prolonged exposure, other hexanes show narcotic effects at 1000 ppm and are not metabolized like n-hexane.

9. Toluene can cause impairment of coordination and momentary loss of memory (200-500 ppm); Palpations, extreme weakness and pronounced loss of coordination (500-1500). The 100 ppm 8 hr. TWA and the 150 ppm STEL provides adequate protection.

10. The toxicological effects of ETBE and TAME have not been thoroughly investigated. ETBE and TAME are expected to be an inhalation hazard and a severe eye and moderate skin irritant.

Hazards of Combustion Products: Carbon monoxide and carbon dioxide can be found in the combustion products of this product and other forms of hydrocarbon combustion. Carbon monoxide in moderate concentrations can cause symptoms of headache, nausea, vomiting, increased cardiac output, and confusion. Exposure to higher concentrations of carbon monoxide can cause loss of consciousness, heart damage, brain damage, and/or death. Exposure to high concentrations of carbon dioxide can cause simple asphyxiation by displacing available oxygen. Combustion of this and other similar materials should only be carried out in well ventilated areas.

Medical Condition Generally Aggravated By Exposure: Medical conditions which have the same symptoms and effects as those outlined under the health hazard information section can be aggraved by exposure to this product.

Medical Limitation: N/A

Routes Of Exposure

Inhalation: Irritation of the upper respiratory tract with central nervous system stimulation possible followed by depression, dizziness, headache, incoordination, anaesthesia, coma, and respiratory arrest.The threshold for immediate mild toxic effects is reported to be 900-1000 ppm.

Skin Contact: Defatting of the skin may occur with continued and prolonged contact. Irritation and burning sensation may occur on exposure to the liquid or high vapor phase exposure..

Skin Absorption: Bezene is absorbed directly through intact skin.

Eye Contact: Contact with liquid will cause severe burning sensation with temporary irritation and swelling of lids.Vapor in concentrations of 160-270 ppm in air will irritate the eye.

Ingestion: Irritation of the mucous membranes of throat, esophagus and stomach which may result in nausea and vomiting; depression may occur, if absorbed (see inhalation symptoms above). If aspirated, chemical pneumonitis may occur with potentially fatal results.

Carcinogenicity Statement: Gasoline mixtures are not listed as carcinogenic by NTP, OSHA, and ACGIH. Gasoline mixtures are listed as a possible carcinogen by IARC (2B) and NIOSH. Benzene is listed as a confirmed human carcinogen by IARC, NTP, OSHA, NIOSH, and ACGIH.

4. First Aid Measures

Eyes: Immediately flush eyes with large amount of water for at least 15 minutes holding lids apart to ensure flushing of the entire eye surface. **SEEK IMMEDIATE MEDICAL ATTENTION.**

Skin: Wash contaminated areas with plenty of soap and water. A soothing ointment may be applied to irritated skin after thoroughly cleansing. Remove contaminated clothing and footwear. **SEEK IMMEDIATE MEDICAL ATTENTION.**

Inhalation: Get person out of contaminated area to fresh air. If breathing has stopped resuscitate and administer oxygen if readily available. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Ingestion: Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Note to Physician: Gastric lavage only if large quantity has been ingested. Guard aagainst aspiration into lungs which may result in chemical pneumonitis. Irregular heart beat may occur, use of adrenaline is not advised. Treat symptomatically.

5. Fire and Explosion Data

Flash Point: <-40 degrees (Estimated)
Autoignition Temperature: 480 degrees F
Flammable Limits In Air: UEL: 7.1% - LEL: 1.3%

Extinguishing Media: Use dry chemical, carbon dioxide, foam or water spray. Water may be ineffective in fighting fires of liquids with low flash points, but water should be used to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect persons attempting to stop a leak.

Special Fire Fighting Procedures: Pressure-demand, self contained, breathing apparatus should be provided for fire fighters engaged in activities in the hot zone.

Unusual Fire And Explosion Hazard: Vapors may travel extended distances and flashback with explosive force if ignition sources are present. Clothing, rags, or similar organic material contaminated with the product and stored in a closed space may undergo spontaneous combustion.

6. Accidental Release Measures

Eliminate all sources of ignition (flames, sparks, heat, electrical equipment, and engines) and remove non-response personnel from the spill area. Contain liquids with earthen dikes or petroleum absorbent materials. Prevent discharges to streams or sewer systems. Control vapors from large spills with fire-fighting foam. Remove liquid with explosion-proof equipment and grounded and bonded suction hoses. Report spills or releases as required to the appropriate local, state and federal regulatory agencies.

7. Handling and Storage Information

This product is intended for use as engine fuel only. Protect containers against physical damage. Outside or detached storage or underground storage is preferred. Separate from oxidizing materials. Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition (flames, sparks, heat, electrical equipment, and engines). Transfer with explosion-proof equipment and grounded and bonded transfer lines. Consult NFPA 30 and OSHA 1910.106 for specific requirements.

8. Exposure Controls/Personal Protection

Ventilation Requirements: Work in well ventilated areas using good engineering practices to process, transfer and store. Explosion-proof equipment is required. Vapor recovery systems may be required in some areas. Mechanical ventilation is required for confined spaces such as tanks and vessels.

Specific Personal Protective Equipment

Respiratory: Respiratory protection is not normally not required when transferring material in well ventilated areas. When transferring in enclosed areas or at high temperatures, vapors concentrations may warrant use of respiratory equipment. Use NIOSH approved respiratory protection following manufacture's recommendations. Positive pressure supplied air respiratory protection is required for IDLH areas; follow ANSI Z88.2

Eye: Face shield and goggles or chemical goggles should be worn where splashing is likely.

Gloves: Impermeable protective gloves such as nitrile gloves should be worn during routine handling of this product.

Other Clothing and Equipment: Standard work clothing is sufficient with good practices. Clothing contaminated with this product should be removed and laundered before reuse. Items which can not be laundered should be discarded. Allow contaminated items to air dry or hang in a well ventilated area. Spontaneous combustion or fire may result from contaminated materials being placed together before drying. Shower and eyewash facilities should be accessible.

Special Work Practices:

(1) Wear impervious gloves such as nitrile gloves when "dip-sticking storage tanks"
(2) Work up-wind of small spills during clean-up
(3) DO NOT USE THIS PRODUCT as a solvent for cleaning equipment or skin
(4) Store small quantities ONLY in "SAFETY CANS" approved for gasoline storage and labeled

"GASOLINE"
(5) Allow contaminated rags to completely dry in a well ventilated area before storage

Exposure Monitoring

Biological: No applicable procedure, breath analysis for hydrocarbons has been suggested. Below are biological monitoring procedures for certain ingredients:

ANALYTE	DETERMINANT	SAMPLING TIME	BIOLOGICAL EXPOSURE INDEX (BEI)
Benzene	S-phenylmercapturic acid in urine	End of shift	25 ug/g creatinine
Toluene	Hippuric acid in urine	End of shift	1.6 g/g creatinine
	Toluene in venous blood	Prior to last shift of week	0.05 mg/L
n-Hexane	2,5-Hexanedione in urine	End of shift	5 mg/g creatinine
	n-Heane in exhaled air		Semiquantitative
Ehylbenzene	Mandelic acid in urine	End of last shift of week	1.5 g/g creatinine
	Ehtylbenzene in exhaled air		Semiquantitative
Xylene	Methylhippuric acid in urine	End of shift	1.5 g/g creatinine

Personal/Area: Both active and passive air monitoring utilizing activated charcoal absorption followed by gas chromatography are recommended. A moleculas weight of 72.5 has been suggested as the average value to convert total hydrocarbon results from milligrams per cubic meter to ppm. Direct reading indicating tubes are available to evaluate short term exposure.

9. Physical and Chemical Properties

Appearance and Odor: Clear, pink, or blue tinted liquid with characteristic, pungent odor: odor threshold is 0.25 ppm and is not an index of exposure.
Boiling Range @ 760 mm Hg: 80-437 degrees F
Melting Point: NA
Vapor Density (Air=1): 3.0-4.0
Evaporation Rate (BuAc=1): N/A
Specific Gravity (H2O=1): 0.68-0.76 @60 degrees F
Bulk Density At 60 degrees F: 5.7-6.3 lbs./gal.
Solubility in H2O % by WT.: Trace
Reid Vapor Pressure: 6.8-15 PSI
% Volatiles By Vol.: ~100
API Gravity: 50-75
pH: NA
Ron: 89-98

10. Stability and Reactivity Information

Conditions Contributing to Instability: Under normal conditions, the material is stable.

Incompatibility: Avoid contact with oxidizers and sources of ignition.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide.

Hazardous Polymerization: None

11. Toxicological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

12. Ecological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

13. Disposal Considerations

Shipment, storage, disposal, and cleanup actions of waste materials are regulated under local, state and federal rules. Contact the appropriate agencies if uncertain of applicability. Waste product and contaminated material having a flash point below 140 degrees F is considered a hazardous waste. DOT Hazardous Waste Number D001 applies. Consult 40 CFR 262 for EPA disposal requirements.

14. Transport Information

DOT Proper Shipping Name	**Gasoline**
DOT Hazard Class*	3
DOT Packing Group (PG)	II
I.D. Number	UN 1203
Required Labeling	Flammable Liquid

15. Regulatory Information

TSCA (Toxic Substance Control Act) Inventory
Gasoline is listed in the TSCA inventory.

SARA (Superfund Amendments and Reauthorization Act) TITLE III
This product is reportable under SARA Title III, Sections 311 & 312 as a hazardous substance.

Hazard Categories Applicable under 40 DFR 370.2 (SARA Section 311):

Acute Health	Chronic Health	Pressure	Fire	Reactive
Yes	Yes	No	Yes	No

Components Listed under 40 CFR 372.2 (SARA Section 311):
This product does not contain chemicals identified as toxic by EPA under CFR part 372 and is not subject to the reporting requirements of this section. The chemicals contained are:

Component	CAS Number	Percentage
n-Hexane	110-54-31	<6
Cyclohexane	142-82-5	<2
Methyl-t-buyl ether	1634-04-4	<15
Benzene	71-43-2	<3.5
Toluene	100-88-3	<13

Ethylbenzene	100-41-4	<2
o-Xylene	95-47-6	<4
m-Xylene	108-38-3	<4
p-Xylene	106-42-3	<4
Xylene (Mixed Isomers)	1330-20-7	Total <12
1,2,4-Trimethylbezxene	95-63-6	<5

State Regulations:
California Proposition 65: This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.These chemicals are: Benzene (cancer), toluene (reproductive dffects).

16. Other Information

NFPA (National Fire Protection Association) Hazard Ratings Codes*

Fire	Health	Reactivity	Other
3	1	0	Blank

*Based on Standard System for the Identification of the Fire Hazards of Materials, NFPA No. 704 M

This material safety data sheet was prepared by T. W. Brown Oil Co., Inc. in accordance with 29 CFR 1910.1200. All information, recommendations and suggestions appearing herein concerning this product are based upon tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by T. W. Brown Oil Co., Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of the product nor does T. W. Brown Oil Co., Inc. assume any liability arising out of use by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

DEFINITIONS OF MSDS TERMINOLOGY

Government Agencies and Private Associations

ACGIH- American Conference of Governmental Industrial hygienists, (private association)
DOT- United States Department of Transportation
EPA- United States Environmental Protection Agency
IARC- International Agency for Research on Cancer, (private association)
NFPA- National Fire Protection Association, (private association)
MSHA- Mine Safety and Health Administration, U.S. Department of Labor
NIOSH- National Institute of Occupational Safety and Health, U.S. Department of Health and Human Services

NTP- National Toxicology Program, (private association)
OSHA- Occupational Safety and Health Administration, U.S. Department of Labor

Hazard and Exposure Information

Acute Hazard- An adverse health effect which occurs rapidly as a result of short term exposure.

CAS#- American Chemical Societies Chemical Abstract service registry number which identifies the product and/or ingredients.

Ceiling- The concentration that should not be exceeded during any part of the working exposure

Chronic Hazard- An adverse health effect which generally occurs as a result of long term exposure or short term exposure with delayed health effects and is of long duration

Fire Hazard- A material that poses a physical hazard by being flammable, combustible, phyrophoric or an oxidizer as defined by 29 CFR 1910.1200

Hazard Class- DOT hazard classification

IDLH- Immediately Dangerous to Life and Health, the airborne concentration below which a person can escape without respiratory protection and exposure up to 30 minutes, and not suffer debilitation or irreversible health effects. Established by NIOSH.

mg/m3- Milligrams of contaminant per cubic meter of air, a mass to volume ratio

N/A- Not available or no relevant information found

NA- Not applicable

PEL- OSHA permissible exposure limit; an action level of one half this value may be applicable

ppm- Part per million (one volume of vapor or gas in one million volumes of air)

Pressure Hazard- A material that poses a physical hazard due to the potential to become unstable reactive, water reactive or that is an organic peroxide as defined by 29 CFR 1910.1200

STEL- The ACGIH short-term exposure limit, a 15-minute time-weighted average exposure which should not be exceeded at any time during a workday, even if the 8-hour TWA is less than the TLV

8-hour TWA- The time weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

~~W~~- Do Not Add Water- water reactive materials may produce toxic gas, extreme heat, or chemical reaction on contact with water

ROE OIL COMPANY, INC.

CITGO TRANSGARD® Tractor Hydraulic Fluid, Red

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 3758
Tulsa, OK 74102-3758

MSDS No. 633308001

Revision Date 08/12/2002

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Hazard Rankings

	HMIS	NFPA
Health Hazard	0	0
Fire Hazard	1	1
Reactivity	0	0

*** = Chronic Health Hazard**

Emergency Overview

Physical State Liquid.

Color Red. **Odor** Mild petroleum odor

WARNING!
Oil injected into the skin from high-pressure leaks in hydraulic systems can cause severe injury.
Most damage occurs during the first few hours.
Seek medical attention immediately.
Surgical removal of oil may be necessary.
Spills may create a slipping hazard.

Protective Equipment

Minimum Recommended
See Section 8 for Details

SECTION 1: IDENTIFICATION

Trade Name	CITGO TRANSGARD® Tractor Hydraulic Fluid, Red	**Technical Contact**	(800) 248-4684
Product Number	633308001	**Medical Emergency**	(918) 495-4700
CAS Number	Mixture.	**CHEMTREC Emergency (United States Only)**	(800) 424-9300
Product Family	Hydraulic oil		
Synonyms	Hydraulic oil; CITGO SAP Product Code No.: 633308001		

SECTION 2: COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
1) Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	80 - 100
2) Proprietary Ingredients	Proprietary Mixture	1 - 10
3) Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4	0 - 5
4) Zinc alkyldithiophosphate	68649-42-3	0 - 2

SECTION 3: HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

Signs and Symptoms of Acute Exposure

Inhalation At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs.

Eye Contact	This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists.
Skin Contact	This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention.
Ingestion	If swallowed, large volumes of material can cause generalized depression, headache, drowsiness, nausea, vomiting and diarrhea. Smaller doses can cause a laxative effect. If aspirated into the lungs, liquid can cause lung damage.
Chronic Health Effects Summary	Contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.
Conditions Aggravated by Exposure	Medical conditions aggravated by exposure to this material may include pre-existing skin disorders.
Target Organs	This material may cause damage to the following organs: skin.
Carcinogenic Potential	This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification					
Irritant		**Toxic**		**Combustible**		**Explosive**		**Pyrophoric**	
Sensitizer		**Highly Toxic**		**Flammable**		**Oxidizer**		**Water-reactive**	
Corrosive		**Carcinogenic**		**Compressed Gas**		**Organic Peroxide**		**Unstable**	

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
Eye Contact	Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. Remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. Seek medical attention immediately.
Notes to Physician	In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal.

SECTION 5: FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-IIIB combustible material. Slightly combustible!
Flash Point Method	OPEN CUP: >150°C (>302°F) (Estimated).
Lower Flammable Limit	No data. **Upper Flammable Limit** No data.
Autoignition Temperature	Not available.
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur, phosphorus, zinc and/or nitrogen.
Special Properties	This material can burn but will not readily ignite. This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, heated vapor can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point.
Extinguishing Media	Use dry chemical, foam, Carbon Dioxide or water fog.
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulation

SECTION 7: HANDLING AND STORAGE

Handling	Avoid contamination and extreme temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.
Storage	Keep container closed. Do not store with strong oxidizing agents. Do not store at temperatures above 120° F or in direct sunlight for extended periods of time. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.
Personal Protective Equipment	

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.

Eye Protection	Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles and/or face shield if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
Hand Protection	Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.
Body Protection	Use clean and impervious protective clothing (e.g., neoprene or Tyvek®) if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
Respiratory Protection	Vaporization is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
General Comments	Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

Occupational Exposure Guidelines

Substance	**Applicable Workplace Exposure Levels**
1) Oil Mist, Mineral	**ACGIH (United States).** TWA: 5 mg/m^3 STEL: 10 mg/m^3 **OSHA (United States).** TWA: 5 mg/m^3

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid.	**Color**	Red.	**Odor**	Mild petroleum odor
Specific Gravity	0.87 (Water = 1)	**pH**	Not Applicable.	**Vapor Density**	>1 (Air = 1)
Boiling Point/Range	Not available.			**Melting/Freezing Point**	Not available.
Vapor Pressure	<0.001 kPa (<0.01 mmHg) (at 20°C)			**Viscosity (cSt @ 40°C)**	57
Solubility in Water	Very slightly soluble in hot water. Insoluble in cold water.			**Volatile Characteristics**	Negligible volatility
Additional Properties	Gravity, ºAPI (ASTM D287) = 31.6 @ 60º F Density = 7.22 Lbs/gal. Viscosity (ASTM D2161) = AP 285 SUS @ 100º F				

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability Stable. **Hazardous Polymerization** Not expected to occur.

Conditions to Avoid Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.

Materials Incompatibility Strong oxidizers.

Hazardous Decomposition Products No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.

SECTION 11: TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Distillates, petroleum, hydrotreated heavy paraffinic:
ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Zinc and Zinc Compounds:
ORAL (LD50): Acute: >5000 mg/kg [Rabbit]. >2890 mg/kg [Rat].
DERMAL (LD50): Acute: >10000 mg/kg [Rabbit].

Distillates, petroleum, solvent-refined heavy paraffinic:
ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Distillates, petroleum, hydrotreated heavy paraffinic:
Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Distillates, petroleum, solvent-refined heavy paraffinic:
Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested. Analyses conducted by method IP 346 indicate that the polycyclic aromatic concentration of this mineral oil is below 3.0 weight percent.

Zinc and Zinc Compounds:
INHALATION (LC50), Acute: > 1310 mg/L (Rat screen level)(4 hours).
DRAIZE EYE, Acute: Moderate to severe eye irritant. (Rabbit).
DRAIZE DERMAL, Acute: Mild to moderate skin irritant. (Rabbit).
BUEHLER DERMAL, Acute: Non-sensitizing. (Guinea Pig).
28-Day DERMAL, Sub-Chronic: Severe skin irritant. (Rabbit). Reported reduced food consumption resulting in weight loss and testicular atrophy.

Hydraulic Oils:
Repeated or prolonged skin contact with certain hydraulic oils can cause mild skin irritation characterized by drying, cracking (dermatitis) or oil acne. Injection under the skin, in muscle or into the blood stream can cause irritation, inflammation, swelling, fever, and systemic effects, including mild central nervous system depression. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate

An environmental fate analysis has not been conducted on this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum-based products. Petroleum-based (mineral) lube oils will normally float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9346 or your regional US EPA office for guidance concerning case specfic disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

SECTION 14: TRANSPORT INFORMATION

DOT Status Not a U.S. Department of Transportation regulated material.

Proper Shipping Name Not regulated.

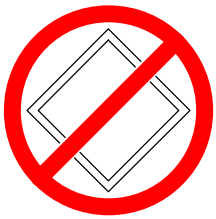
Hazard Class Not regulated.

Packing Group(s) Not applicable.

UN/NA ID Not regulated.

Reportable Quantity A Reportable Quantity (RQ) has not been established for this material.

Placards



Emergency Response Guide No. Not applicable.

HAZMAT STCC No. Not available

MARPOL III Status Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15: REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313	This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: Zinc and Zinc Compounds, Concentration: 0 - 2%
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are: Zinc and Zinc Compounds, Concentration: 0 - 2%
CWA	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Naphthalene: 0.0004%
New Jersey Right-to-Know Label	Petroleum Oil (Hydraulic Oil)
Additional Regulatory Remarks	No additional regulatory remarks.

SECTION 16: OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	1.00
Revision Date	08/12/2002
Print Date	Printed on 08/12/2002.

ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than NA: Not Applicable ND: No Data NE: Not Established

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
NPCA: National Paint and Coating Manufacturers Association
HMIS: Hazardous Materials Information System
NFPA: National Fire Protection Association
EPA: US Environmental Protection Agency

DISCLAIMER OF LIABILITY

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

* * * * * END OF MSDS * * * * *

SAN JOAQUIN REFINING CO., INC.
3129 Standard Street • P.O. Box 5576 • Bakersfield, CA 93388 • Phone 661 / 327-4257 • Fax 661 / 327-3236 • ww

JPC Pump Oil

FICATE OF ANALYSIS

CT NAME: **HYNAP N100HTS**
CT TYPE: HYDROTREATED NAPHTHENIC OIL
.: 64742-53-6, 64742-52-5
ODUCT CODE: 2770
IO: 10050
: 070909

DATE:
CUSTOMER:
DESTINATION:
CUST. P.O. NO.:
CARRIER:
SHIPMENT DATE:

y	ASTM Method	Specifications Min	Typical	Max	Results
ty, SUS @ 100F	D2161	100	109	120	115
ty, SUS @ 210F	D2161		38.4		38.9
ty, cSt @ 40C	D445		20.50	23	21.80
ty, cSt @ 100C	D445		3.58		3.74
avity	D287	25.0	26.0	27.5	26.1
c Gravity @ 60F	D1250		0.8984		
, lb/gal @ 60F	D1250		7.481		
	D1500		L1.5	2.0	L1.0
COC, F	D92	320	345		340
oint, F	D97		-30		
Point, F	D611	170	178	185	177
tive Index @ 20C	D1218		1.4883		
tivity Intercept	Calc		1.0405		
ity-Gravity Constant	D2501		0.858		
No., mg KOH/g	D974		<0.05		
, w%	D2622		<0.003		
tic Content, w%	D5186		16		
n-Type Analysis, %	D2140				
Ca			4		
Cn			52		
Cp			44		

oaquin Refining Co. Inc. hereby certifies that the above tests were performed in accordance pplicable ASTM test methods and that the product designated hereon complies with the ication requirements for the product indicated.

APPROVED BY: _____

320
2770070212

rsedes COA2770040811

Quality Control Department
SAN JOAQUIN REFINING CO., INC.

MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT *HYNAP N100HTS*

FILE NUMBER: 2770
DATE ISSUED: 1/25/07
SUPERCEDES: 2/5/03

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	HYNAP N100HTS
SYNONYMS:	DISTILLATE, PETROLEUM
PRODUCT CODES:	2770
MANUFACTURER:	SAN JOAQUIN REFINING CO., INC
DIVISION:	BAKERSFIELD
ADDRESS:	P.O. BOX 5576, BAKERSFIELD, CA., 93388
EMERGENCY PHONE:	(661) 327-4257
PREPARED BY:	SAN JOAQUIN REFINING CO., INC. HEALTH, SAFETY AND ENVIRONMENTAL DEPARTMENTS

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM
HMIS® HAZARD RATING

4 – SEVERE	HEALTH	1
3 – SERIOUS	FLAMMABILITY	1
2 – MODERATE	REACTIVITY	0
1 - SLIGHT		
0 - MINIMAL		

MATERIAL HAZARD EVALUATION
(Per OSHA Hazard Communication Standard [29 CFR 1910.1200])

Health Precautions: WARNING: Fumes from hot product may cause irritation to the skin, nose, throat and lungs.

Safety Precautions: WARNING: Hot product can cause burns. If burned by hot product, cool affected area immediately with cool water. Seek medical attention immediately.

SECTION 2: HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

CHEMICAL FAMILY: DISTILLATE (PETROLEUM) HYDROTREATED LIGHT NAPHTHENIC

HAZARDOUS COMPONENT(S)	CAL-OSHA PEL- TWA (8 HOUR)	ACGIH TLV-TWA (8 HOUR)	OTHER LIMITS RECOMMENDED	% BY WEIGHT
Distillate (Petroleum) Hydrotreated Light Naphthenic CAS No. 64742-53-6	5 mg/m³ (As oil mist)	5 mg/m³ (As oil mist)	None	>99

SECTION 3: HEALTH HAZARDS IDENTIFICATION

ROUTES OF ENTRY:	EYES: Yes	SKIN: Yes	INGESTION: Yes	INHALATION: Yes

POTENTIAL HEALTH EFFECTS:

EYES: Eye contact may result in irritation and redness. Thermal burns may result from contact with hot material. Exposure to high concentrations of vapors may be irritating to the eyes.

SKIN: Prolonged and repeated contact can defat the skin, which may result in dryness, dermatitis and cracking of the skin. Thermal burns may result from contact with hot material.

INGESTION: Do not ingest. Ingestion may result in nausea or stomach discomfort. If swallowed do not induce vomiting, call a physician.

INHALATION: Fumes from hot products may be unpleasant and may produce nausea. Remove the person to fresh air if respiratory discomfort occurs.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Persons with preexisting skin or respiratory disorders may have their conditions aggravated by overexposure to this material.

321

CARCINOGENICITY:

ACGIH, NTP, OSHA and IARC carcinogen lists were checked for those components with CAS Registry Numbers (64742-53-6).

ACGIH: This product is not listed as carcinogenic.
IARC: The International Agency for research on cancer has concluded that highly or severely refined light and middle distillates are Group 3 substances, "not classifiable as to their carcinogenicity to humans," based on inadequate human or animal evidence
NTP: This product is not listed as carcinogenic.
OSHA: This product is not listed as carcinogenic.

SECTION 4: EMERGENCY AND FIRST AID MEASURES

EYES: Avoid contact with eyes. If contact occurs, immediately flush eyes with water for a minimum of 15 minutes. Seek medical attention immediately.
SKIN: Avoid contact with skin. If contact occurs, wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area.
INGESTION: Do not induce vomiting. If ingested, seek medical attention.
INHALATION: Not expected to be a problem. However, if respiratory irritation, dizziness, nausea or unconsciousness occurs due to excessive vapor or mist exposure, seek medical attention. If operating conditions create airborne concentrations that exceed the exposure standard, the use of an approved NIOSH/OSHA respirator for organic vapors or air- supplied breathing equipment is recommended.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE LIMITS IN AIR, (% BY VOLUME): UPPER: No data available
LOWER: No data available
FLASH POINT: COC °F: 330° Minimum
EXTINGUISHING MEDIA: Foam, water fog, dry chemical, CO^2
SPECIAL FIRE FIGHTING PROCEDURES: Do not enter confined fire space without proper protective equipment including self-contained breathing apparatus. See Hazardous Decomposition Products.
HAZARDOUS DECOMPOSITION PRODUCTS: Normal combustion forms carbon dioxide and water vapor, and may produce oxides of sulfur and nitrogen. Incomplete combustion can produce carbon monoxide.

SECTION 6: SPILL OR LEAK PROCEDURES

ACCIDENTAL RELEASE MEASURES: In case of spill, clean up using absorbent material such as earth or sand.
WASTE DISPOSAL METHOD: Observe Federal, State and Local regulations covering chemical waste spills.
RCRA HAZARD CLASS: This product is not a characteristic hazardous waste under RCRA. No EPA waste numbers are applicable for this product's components.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Avoid fire, sparks or open flame. Wear appropriate personal protective equipment to ensure that this product does not contact the eyes or skin.
VENTILATION: Use adequate ventilation to keep the airborne concentrations of this material below the established exposure standard.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: If operating conditions create airborne concentrations that exceed the exposure standard for this product, the use of an approved NIOSH/OSHA respirator for organic vapors or air supplied breathing equipment is recommended.
EYE PROTECTION: Wear appropriate safety glasses, goggles or full-face shield.
SKIN PROTECTION: Long sleeve cotton shirt and cotton pants are recommended. Wear appropriate gloves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Straw colored liquid
ODOR:	Petroleum odor
PHYSICAL STATE:	Liquid
INITIAL BOILING POINT:	616° F
VAPOR PRESSURE (mmHg):	<0.01mm Hg @ 100° F (ASTM D-2879)
PERCENT VOLATILE (% BY VOL.):	0
VAPOR DENSITY (AIR = 1):	4
EVAPORATION RATE (ETHYL ETHER = 1):	<1
SPECIFIC GRAVITY (H2O = 1):	0.89
SOLUBILITY IN WATER:	NIL

SECTION 10: REACTIVITY DATA

STABILITY:	Stable
CONDITIONS CONTRIBUTING TO INSTABILITY:	None
INCOMPATIBILITY (MATERIAL TO AVOID):	May react with strong oxidizers.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:	Normal combustion forms carbon dioxide and water vapor, and may produce oxides of sulfur and nitrogen. Incomplete combustion can produce carbon monoxide.
HAZARDOUS POLYMERIZATION:	Will not occur

SECTION 11: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION:

PROPER SHIPPING NAME: Not regulated as a hazardous material for transportation by USA DOT.

SECTION 12: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

TSCA (TOXIC SUBSTANCE CONTROL ACT) REGISTRY: Listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT):
This product is not a hazardous substance under CERCLA.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

302/304 This product is not listed as an extremely hazardous substance in 40 CFR Part 355, and is not known to contain an extremely hazardous substance in a concentration greater than one percent by weight.

311/312 HAZARD CATEGORIES:

Acute Health Hazard:	No
Chronic Health Hazard:	No
Fire Hazard:	No
Pressure Release Hazard:	No
Reactivity Hazard:	No

313 This product is not known to contain any components in concentrations above *de minimus* levels that are listed as toxic in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA.

WHMIS: NDA

OSHA: 29 CFR 1910.1200 (Hazard Communication) required.

STATE REGULATIONS:

Mineral oil, petroleum extracts, heavy naphthenic distillate solvent appears on one or more of the hazardous substances lists in the following states:

MA

The information provided in this Material Safety Data Sheet is believed to be accurate and reliable on and as of the date on page one. **However, this Material Safety Data Sheet is not a guarantee or warranty of any kind, express or implied. Any and all warranties of merchantability and/or fitness for a particular purpose are specifically disclaimed.** It is the user's responsibility to determine the conditions under which the product is used, including the selection of engineering controls, work practices and Personal Protective Equipment to minimize hazards.

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL INC AT: 1(800)255-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: THREE WAY ACID

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311, OAKLAND, CA 94601

PHONE NUMBER FOR ADDITIONAL INFORMATION: (510)532-2275

DATE PREPARED OR REVISES: 11/94 **NAME OF PREPARER:** TJE

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES	CAS NUMBER	PERCENT
SULFURIC ACID	7664-93-9	^10%
NITRIC ACID	9697-37-2	^ 4%
PHOSPHORIC ACID	7664-38-2	^ 5%
TOTAL PERCENT ^20%		

EXPOSURE LIMITS IN AIR (GIVE UNITS)

ACGIH TLV

OSHA PEL

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1) NON VOLATILE

SPECIFIC GRAVITY 1.11

SOLUBILITY IN WATER 100%

VAPOR PRESSURE, mmHg AT 20 C .03mm

MELTING POINT OR RANGE, F -17.5 C

BOILING POINT OR RANGE, F 100 C

EVAPORATION RATE (BUTYL ACETATE = 1) NON VOLATILE

APPEARANCE AND ODOR BLUE LIQUID - NO ODOR
HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES OF SUBSTANCE AS A GAS, VAPOR, DUST OR MIST).

IV. FIRE AND EXPLOSION

FLASH POINT, F (GIVE METHOD) NON COMBUSTIBLE

AUTO IGNITION TEMPERATURE, F

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER(LEL)_____ UPPER(UEL)____
N/A

FIRE EXTINGUISHING MATERIALS:
___WATER SPRAY ___CARBON DIOXIDE _X___OTHER:
___FOAM ___DRY CHEMICAL

SPECIAL FIREFIGHTING PROCEDURES: USE FULL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING APPARATUS. THERMAL DECOMPOSITION EMITS TOXIC FUMES OF OXIDES OF PHOSPHORUS. HARMFUL TO INGEST

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE.

INHALED: SEVERE IRRITANT - TCLO (HUMAN)

CONTACT WITH SKIN OR EYES: SEVERE IRRITANT EYE: CHEMICAL BURN LIKELY. SKIN: CORROSIVE TO TISSUE.

ABSORBED THROUGH SKIN: ACUTELY HAZARDOUS LD50 (RABBIT)

SWALLOWED: ACUTELY HAZARDOUS. LD50 (RAT)

HEALTH EFFECTS OR RISKS FROM EXPOSURE. EXPLAIN IN LAY TERMS. ATTACH EXTRA PAGE IF MORE SPACE IS NEEDED.

ACUTE: IRRITANT, SLIGHTLY TOXIC WHEN INHALED OR INGESTED.

CHRONIC: TOXIC WITH REPEATED INHALATION OR INGESTION. CAUSES BURNS TO EXPOSED TISSUE.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: FLUSH WITH COPIOUS WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES): SALVAGE OR NEUTRALIZE. SODA ASH AND LIME ARE NEUTRALIZING AGENTS.

PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): NEUTRALIZE - FOLLOWED BY DISCHARGE INTO A TREATMENT SYSTEM IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: ADEQUATE TO MEET MAXIMUM EXPOSURE FOR ACID MIST OF 1mg/cu.M. IN 8 HOURS.

RESPIRATORY PROTECTION (TYPE): USE NIOSH/MSHA ACID GAS RESPIRATOR.

EYE PROTECTION (TYPE): WEAR CHEMICAL GOGGLES, IF SPLASHING, SPRAY OR MIST CONDITIONS ARE POSSIBLE.

GLOVES (SPECIFY MATERIAL): RUBBER OF NEOPRENE

OTHER CLOTHING AND EQUIPMENT: RUBBER APRON AND BOOTS.

WORK PRACTICES, HYGIENIC PRACTICES: PROTECT EYES AND SKIN FROM CONTACT.

OTHER HANDLING AND STORAGE REQUIREMENTS: NONE

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: PROTECT EYES AND SKIN FROM CONTACT.

SKIN CONTACT: WASH OFF WITH WATER. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

INHALED: REMOVE FROM EXPOSURE. IF BREATHING IS DIFFICULT OR DISCOMFORT PERSISTS, OBTAIN MEDICAL ATTENTION.

SWALLOWED: RINSE MOUTH WITH WATER. GIVE COPIOUS WATER TO CAUSE DILUTION IN STOMACH. DO NOT INDUCE VOMITING.

SUSPECTED CANCER AGENT?

_X__NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
MODERATELY CORROSIVE AGENT WHICH MAY BURN ANY EXPOSED TISSUES UPON OTHER THAN BRIEF CONTACT.

VI. REACTIVITY DATA

STABILITY: _X__STABLE ____UNSTABLE

CONDITIONS TO AVOID:
MIXING WITH ALKALI, CHLORINE, OR ORGANIC CHEMICALS

INCOMPATIBILITY (MATERIALS TO AVOID): CONTACT WITH ALKALINE MATERIAL AND SOME METALS.

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

HAZARDOUS POLYMERIZATION: ____MAY OCCUR _X__WILL NOT OCCUR

CONDITIONS TO AVOID:

AN FO

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL INC AT: 1(800)255-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: PIPELINE EXPRESS

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311 OAKLAND, CA 94601

PHONE NUMBER FOR ADDITIONAL INFORMATION: (510) 532-2275

DATE PREPARED OR REVISES: 1/96 **NAME OF PREPARER:** TJE

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES	CAS NUMBERS	PERCENTAGE
Sodium Hypochlorite	7681-52-9	^3%
Sodium Hydroxide	1310-58-3	^20%

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1)

Ph 12.0 @ USAGE LEVEL

SPECIFIC GRAVITY 1.050

SOLUBILITY IN WATER YES

VAPOR PRESSURE, mmHg AT 20 C
N/A
MELTING POINT OR RANGE, F
N/A
BOILING POINT OR RANGE, F 212 F

EVAPORATION RATE (BUTYL ACETATE = 1)
N/A

APPEARANCE AND ODOR VERY PALE YELLOW LIQUID, CHLORINE ODOR

HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES OF SUBSTANCE AS A GAS, VAPOR, DUST OR MIST). CHLORINE ODOR

IV. FIRE AND EXPLOSION

FLASH POINT, F (GIVE METHOD)

AUTO IGNITION TEMPERATURE, F

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER(LEL)_____ UPPER(UEL)____

FIRE EXTINGUISHING MATERIALS:
XX **WATER SPRAY** **CARBON DIOXIDE** **OTHER:**
FOAM **DRY CHEMICAL**

SPECIAL FIREFIGHTING PROCEDURES: NIOSH GAS MASK FOR CHLORINE

UNUSUAL FIRE AND EXPLOSION HAZARDS: STRONG OXIDIZER, INCOMPATIBLE WITH ANY ACIDS.

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE.

INHALED: FUMES FROM A SPILL ARE VERY IRRITATING TO MUCOUS MEMBRANES. VERY LITTLE HAZARD IF PROPERLY STORED.

CONTACT WITH SKIN OR EYES: SEVERE IRRITANT, RED SKIN, BURNING OF EYES, CORROSIVE TO ANY MUCUS MEMBRANES.

ABSORBED THROUGH SKIN: CORROSIVE BURNING TO SKIN.

SWALLOWED: CAUSES IRRITATION TO MEMBRANES OF MOUTH AND THROAT, WILL CAUSE SEVERE STOMACH PAIN.

HEALTH EFFECTS OR RISKS FROM EXPOSURE. EXPLAIN IN LAY TERMS. ATTACH EXTRA PAGE IF MORE SPACE IS NEEDED.

ACUTE: SEE ABOVE

CHRONIC: CAN CAUSE PERMANENT EYE DAMAGE. CAN CAUSE SEVERE SKIN DAMAGE AND CHEMICAL BURN.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: FLUSH WITH WATER FOR 15 MINUTES - CALL PHYSICIAN

SKIN CONTACT: DISROBE IMMEDIATELY WASH WITH SOAP AND WATER FOR 5 MINUTE MINIMUM - CALL PHYSICIAN.

INHALED: REMOVE TO FRESH AIR

SWALLOWED: IF CONSCIOUS CALL PHYSICIAN IMMEDIATELY, TELL DOCTOR TO TREAT AS IF IT WERE SODIUM HYDROXIDE.

SUSPECTED CANCER AGENT?

_XX__ NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

VI. REACTIVITY DATA

STABILITY: _XX__STABLE ____UNSTABLE

CONDITIONS TO AVOID: CONTACTS WITH ACIDS, AMMONIA, AMINES, CYANURATES, ALL OXIDIZERS.

INCOMPATIBILITY (MATERIALS TO AVOID): ACID

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS): CONTACT WITH ACID RELEASES POISONOUS CHLORINE GASES.

HAZARDOUS POLYMERIZATION: ____MAY OCCUR _X__WILL NOT OCCUR

CONDITIONS TO AVOID:

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES): SMALL: MOP UP WITH COLD WATER OR APPLY ABSORBENT MATERIAL. LARGE: PLACE DOWN ABSORBENT MATERIAL NEUTRALIZE WITH SODIUM SULFITE.
PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): DO IN ACCORDANCE WITH LOCAL AUTHORITIES

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: USE IN WELL VENTILATED AREA

RESPIRATORY PROTECTION (TYPE): MASK WITH CHLORINE CARTRIDGES

EYE PROTECTION (TYPE): FULL FACE MASK COVERING EYES COMPLETELY

GLOVES (SPECIFY MATERIAL): RUBBER OR NEOPRENE UP TO ELBOW

OTHER CLOTHING AND EQUIPMENT: RUBBER SPLASH APRON AND RUBBER BOOTS

WORK PRACTICES, HYGIENIC PRACTICES: DO NOT USE IN THE PRESENCE OF ACIDS, AN WEAR PROTECTIVE GEAR MENTIONED ABOVE AT ALL TIMES.

OTHER HANDLING AND STORAGE REQUIREMENTS: STORE IN COOL DRY ATMOSPHERE. AVOID DIRECT SUNLIGHT.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

UCT: FORMALDEHYDE 37% 10 - 30% M

ORDER NO: 340974
PROD NO : 665002

MORRIS LEVIN & SON
1816 SOUTH "K" STREET

TULARE ,CA 93274

UNIVAR USA INC. (425)889-3400
6100 CARILLON POINT , KIRKLAND , WA 98033

---------- EMERGENCY ASSISTANCE ----------

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

****
PRODUCT IDENTIFICATION
****

PRODUCT NAME: FORMALDEHYDE 37% 10 - 30% M

MSDS#: P1Z146V

DATE ISSUED: 09/30/2004

SUPERSEDES: 11/17/2003

ISSUED BY: 008130

MATERIAL SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY
DESCRIPTION: Formaldehyde 37% 10 -30 M

1. Chemical Product and Company Identification

IPTION: Formaldehyde 37% 1 (3 -3
CT CODE: 04-1537.-.
UCT TYPE: Formaldehyde Solution
APPLICATION: General Purpose

Manufacturer/Supplier Information

UCT: FORMALDEHYDE 37% 10 - 30% M

ORDER NO: 340974
PROD NO : 665002

Distributed by:
Univar USA
6100 Carillon Pt.
Kirkland, WA 98033
425 889-3400

24 Hour Emergency (CHEMTREC): 800-424-9300

2. Composition, Information on Ingredients

The ingredients listed below have been associated with one or more immediate and/or delayed(*) health hazards. Risk of damage and effects depends upon duration and level of exposure. BEFORE USING, HANDLING, OR EXPOSURE TO THESE INGREDIENTS, READ AND UNDERSTAND THE MSDS.

		% by weight
-0	*Formaldehyde	30.0 - 50.0
6-1	*Methanol	10.0 - 30.0

3. Hazards Identification

3.1 Emergency Overview
Appearance Clear, colorless liquid
Odor Pungent

WARNING!
May further react at high temperatures to form methanol, formic acid or methylals. At low temperatures will self-polymerize to form paraformaldehyde.

COMBUSTIBLE
Harmful if inhaled.
Can cause central nervous system depression.
Causes chemical burns to eyes.
May be harmful if swallowed.
Ingestion may cause blindness.
May be harmful if absorbed through skin.
Causes skin irritation.
May cause allergic skin reaction.

NORTH AMERICAN EMERGENCY RESPONSE GUIDE, 2000, NO: 132

Rating
H = 3 (serious)
FLAMABILITY = 2 (moderate)
REACTIVITY = 1 (slight)
CHRONIC =

[illegible]UCT: FORMALDEHYDE 37% 10 - 30% M

ORDER NO: 340974
PROD NO : 665002

3.2 Potential Health Effects
Immediate Hazards
INGESTION: May be harmful if swallowed.
Ingestion may cause blindness.
Can cause central nervous system depression.
If accidentally swallowed, burns or irritation to mucous membranes, esophagus or GI tract can result.

INHALATION: Harmful if inhaled.
Can cause central nervous system depression.
Can cause irritation of nose, throat and lungs.

SKIN: May be harmful if absorbed through skin. Causes irritation.

EYES: Causes chemical burns.
67-1 Methanol
[illegible]ause central nervous system depression. Signs and symptoms may include [illegible]ache, dizziness, nausea, vomiting, unconsciousness and asphyxiation. [illegible]orts have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

Delayed Hazards
67-56-1 Methanol

Possible reproductive disorders from prolonged exposure.
May cause lung damage based on animal data. Pre-existing respiratory disorders may be aggravated by exposure.
May cause liver damage based on animal data.
May cause kidney damage based on animal data.
May cause blindness if swallowed.
-- See Footnote

50-00-0 Formaldehyde
May cause cancer. OSHA regulates formaldehyde as a potential human carcinogen. See the OSHA Formaldehyde Workplace Standard at 29CFR 1910.1048. Rats chronically exposed to 14 ppm formaldehyde contracted nasal cancer. The National Toxicology Program (NTP) has listed formaldehyde as a probable human carcinogen. The International Agency for Research on Cancer (IARC) has concluded formaldehyde is carcinogenic to humans.

Safe handling and use instructions are provided in this MSDS and in the OSHA [illegible]ldehyde Workplace Standard at 29CFR1910.1048. OSHA has identified 0.5 ppm [illegible]e "Action Level". Please review and understand the guidance contained in [illegible], MSDS and refer to the OSHA Formaldehyde Standard for regulatory requirements that may applicable to your operation and use.

For further information and a review of various studies, go to

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www.osha.gov/SLTC/formaldehyde, www.iarc.fr and other authoritative websites. May cause allergic skin reaction. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory and skin disorders may be aggravated by exposure. Footnote: As of the date of issuance of this document, this material has not been listed by NTP, classified by IARC nor regulated by OSHA as a carcinogen.

4. First Aid Measures

INGESTION:
If accidentally swallowed, dilute by drinking large quantities of water. If the individual is drowsy or unconscious, do not give anything by mouth. Immediately contact poison control center or hospital emergency room for advice on whether to induce vomiting or for any other additional treatment directions.

INHALATION:
If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention immediately.

SKIN:
Immediately remove all contaminated clothing, including shoes. Wash the affected area of the body with soap or mild detergent and large quantities of water for at least 20 minutes. Contact a physician if irritation persists. If there are chemical burns, cover the area with sterile, dry dressings and get medical attention immediately.

EYES:
Immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held apart during irrigation to ensure water contact with entire surface of eyes and lids. Get medical attention immediately.

5. Fire Fighting Measures

Flash point	58 C (136 F) Tag Closed Cup ASTM D 56
Lower explosion limit	Approx. 7 % (V)
Upper explosion limit	Approx. 70 % (V)
Autoignition temperature	Approx. 430 C (788 F)

COMBUSTIBLE. Keep away from heat and flame.
In case of fire, use water spray, dry chemical, "alcohol" foam or CO2. Use water to keep fire-exposed containers cool.

6. Accidental Release Measures

Always wear appropriate protective equipment. Eliminate all ignition sources and ventilate the area to reduce the potential for exposure, fire and explosion. Recover and reuse as much liquid as possible. Large quantities:

Enclose with diking material to prevent seepage into sewer systems, surface/ground water or natural bodies of water. If possible neutralize with dilute(<5%) solutions of ammonium hydroxide, sodium hydroxide, sodium bisulfite or sodium sulfite. Small quantities: Soak up with absorbent material (vermiculite, dry sand, earth) and remove to a chemical disposal area. Follow all emergency notification and reporting regulations.

7. Handling and Storage

7.1 Handling
Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of the material from eyes, skin and clothing. Wash thoroughly after handling. Always use appropriate Personal Protective Equipment (PPE).

INHALATION:
...t breathe vapor. Use with adequate ventilation.

...d contact with skin and clothing.

EYES:
Do not get in eyes.

7.2 Storage

Storage temperature depends on methanol content and should be controlled to avoid precipitation or vaporization. See technical bulletin for recommended storage temperatures. Remove plug slowly to relieve pressure. Formaldehyde solutions will start to precipitate paraformaldehyde if stored below their recommended storage temperatures making the freezing point difficult to determine.

8. Exposure Controls/Personal Protection

8.1 Exposure Controls
ENGINEERING CONTROLS: The following exposure control techniques may be used to effectively minimize employee exposure: local exhaust ventilation, enclosed system design, process isolation and remote control in combination with appropriate use of personal protective equipment and prudent work practices. These techniques may not necessarily address all issues pertaining ...your operations. We, therefore, recommend that you consult with experts ...ur choice to determine whether or not your programs are adequate. ...rborne contaminants are generated when the material is heated or ...ed, sufficient ventilation in volume and air flow patterns should be provided to keep air contaminant concentration levels below acceptable criteria.

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8.2 Personal Protection

Where formaldehyde gas concentrations can exceed acceptable criteria, use NIOSH (42 CFR Part 84) approved full-facepiece respiratory protection equipment. Respirators should be selected based on the concentration of formaldehyde in air in accordance with the OSHA Formaldehyde Standard Respiratory Protection requirements at 29CFR 1910.1048(g), and the OSHA Respiratory Protection Standard at 29CFR 1910.134 or other applicable standards or guidelines, including ANSI standards regarding respiratory protection. A full-facepiece respirator with cartridges or canisters specifically approved for formaldehyde may be used for exposure levels up to 7.5 ppm (10 times the PEL). Chemical safety goggles must be worn if there is a possibility of contact with liquid formaldehyde or excessive gas-phase exposures. A full-facepiece respirator complies with this requirement. Wear protective gloves as required to prevent skin contact.
tive gloves must be worn when handling formaldehyde solutions of higher. Consult your glove manufacturer for specific information on ation, degradation and breakthrough data to ensure proper selection.
d on available information, butyl, nitrile and Viton appear to be quite impervious to various strengths of formaldehyde solutions. Other glove materials may be equally suitable depending on composition, thickness and use conditions. Where high concentrations of formaldehyde may be present, such as in an emergency, full body protection should be worn. Other protective equipment that must be available when handling formaldehyde solutions of 1% or higher include eye wash fountains and safety showers. Reusable protective clothing should be cleaned and ventilated after any formaldehyde contamination. See the OSHA Formaldehyde Standard requirements at 29CFR 1910.1048(h) Protective Equipment and Clothing and OSHA 29CFR 1910.1048(i) Hygiene Protection for other specific protective measures based on the form of formaldehyde, the conditions of use and the hazards to be prevented.

8.3 Exposure Guidelines

50-00-0	Formaldehyde			
ACGIH TLV	Ceiling	0.3 ppm	0.37 mg/m3	A2 - Suspected Human Carcinogen: SEN
OSHA PEL	8-hr TWA	0.75 ppm	0.9 mg/m3	
	STEL (15 min)	2 ppm	2.5 mg/m3	
67-56-1	Methanol			
TLV	8-hr TWA	200 ppm	262 mg/m3	Skin
(15 min)	250 ppm	328 mg/m3		
PEL	8-hr TWA	200 ppm	260 mg/m3	
	Remanded TWA	200 ppm	260 mg/m3	Skin: 1989 PEL remanded, but in effect in some states

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Remanded STEL 250 ppm 310 mg/m3

9. Physical and Chemical Properties

Appearance	Clear, colorless liquid
Odor	Pungent
Odor threshold	Not available
Specific gravity	1.078 - 1.087
pH	2.5-3.6
Freezing point	See storage section
Solubility in water	Infinite
Octanol/water partition coefficient	Pow 0.35
Vapor pressure	Approx. 40 mm Hg @25 C (77 F)
Vapor density	Approx. 1
Evaporation rate	Less than 1 (Butyl Acetate = 1)
Boiling point, 760 mm Hg	Approx. 100 C (212 F)

Stability and Reactivity

ally stable, but may further react at high temperatures to form methanol, formic acid or methylals. At low temperatures will self-polymerize to form paraformaldehyde.

Incompatibilities:
Reacts with many compounds. Reaction with phenol, strong acids or alkalis may be violent. Reaction with hydrochloric acid may form bis-chloromethyl ether, an OSHA regulated carcinogen.

Decomposition products may include:
CO, CO2.

Hazardous polymerization:
Will not occur.

11. Toxicological Information

See Section 3 Hazards Identification information.
50-00-0 Formaldehyde
LC50: rat--0.59 mg/l (Sax)
LD50: Oral-rat= 800 mg/kg (Merck); Skin-rabbit= 270 mg/kg (Sax)
67-56-1 Methanol
LC50: rat=64,000 mg/l/4 h (Sax)
Oral-rat= 5,628 mg/kg (Sax); Skin-rabbit= 20,000 mg/kg (Sax)

Ecological Information

Formaldehyde is highly toxic to algae, protozoa and other unicellular organisms and slightly toxic to fish. In the atmosphere the material is

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rapidly degraded by photolysis and photooxidation. Formaldehyde is mobile in the soil. In water or soil, formaldehyde is biodegraded in a few days. Experiments performed on a variety of fish and shrimp show no bioconcentration of formaldehyde.

Ecotoxicity:
Algae(scenedesmus): toxic: 0.3-0.5 mg/l
Arthropoda(daphnia): toxic: 2 mg/l
Fish (guppies): TLm = 50-300 mg/l

Environmental Fate:
BOD5 = 60% of ThOD = 0.6-1.07 standard dilution at <260 mg/l
Octanol/Water Partition Coefficient = 0.35 (LKOW)

13. Disposal Considerations

ter free liquid. Absorb residue and dispose of according to local, /provincial, and federal requirements. Empty container: May contain osive vapors. DO NOT cut, puncture or weld on or nearby.

14. Transport Information

14.1 U.S. Department of Transportation (DOT)
The data provided in this section is for information only and may not be specific to your package size. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

Proper shipping name	FORMALDEHYDE SOLUTION, FLAMMABLE
UN/NA number	1198
Class	3
Packing group	III
Label	3,8
RQ Ingredients	

14.2 Canadian Transportation of Dangerous Goods (TDG)

Proper shipping name	FORMALDEHYDE SOLUTION, FLAMMABLE
UN number	1198
Class	Class 3 (8)
Packing group	III
Label	3,8

Regulatory Information (Selected Regulations)

U.S. Federal Regulations
OSHA Hazards Communication Standard 29CFR1910.1200
This material is a "health hazard" and/or a "physical hazard" as determined when reviewed according to the requirements of the Occupational Safety and

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Health Administration 29 CFR Part 1910.1200 "Hazard Communication" Standard.
SARA Title III: Section 311/312

Immediate health hazard
Delayed health hazard
Fire hazard
SARA Title III: Section 313 and 40 CFR Part 372
This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.

Methanol	67-56-1	14.97%
Formaldehyde	50-00-0	37.00%

TSCA Section 8(b) Inventory
All reportable chemical substances are listed on the TSCA Inventory. We on certifications of compliance from our suppliers for chemical stances not manufactured by us.

Canadian Regulations
Workplace Hazardous Materials Information System (WHMIS)
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

Class D1A
Class D1B
Class D2A
Class D2B
Class E
Canadian Environmental Protection Act (CEPA)

All reportable chemical substances are listed on the Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

National Pollutant Release Inventory (NPRI)

This product contains the following chemical(s) subject to the reporting requirements of the Canadian Environmental Protection Act (CEPA) subsection 16(1), National Pollutant Release Inventory.

nol	67-56-1	14.97%
ldehyde	50-00-0	37.00%

16. Other Information

User's Responsibility

[illegible]

[illegible] FORMALDEHYDE 37% TO - 39% M

[illegible]

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PROD NO : [illegible]

The 1983 Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS) require that the information contained on these sheets be made available to your workers. Educate and train your workers regarding OSHA and WHMIS precautions. Instruct your workers to handle this product properly. Consult with appropriate experts to guard against hazards associated with use of this product and its ingredients.

---------- FOR ADDITIONAL INFORMATION ----------

CONTACT: MSDS COORDINATOR UNIVAR USA INC.
DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

01/13/05 16:35 PRODUCT: 665002 CUST NO: 423726 ORDER NO: 340974

---------- NOTICE ----------

**** UNIVAR USA INC("UNIVAR"), EXPRESSLY DISCLAIMS

EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMGAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT

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RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

* * * E N D O F M S D S * * *

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL AT: 1(800)255-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: DU BRITE

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311 OAKLAND, CA 94601
PHONE NUMBER FOR ADDITIONAL INFORMATION: (510) 532-2275

DATE PREPARED OR REVISES: 7/93 **NAME OF PREPARER:** TJE

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES	CAS NUMBERS	%	ACGIH TVL	OSHA PEL
HYDROFLUORIC ACID	7664-39-3	5.0%	CL/3ppm,SF	air,TWA,3ppm,SF
SULFURIC ACID	7664-93-9	9.0%	1mg/cu.mtr.	air,1mg/cu.mtr.
HYDROCHLORIC ACID	7647-01-0	3.0%	5 ppm	5 ppm

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1) N/A

SPECIFIC GRAVITY 1.140

SOLUBILITY IN WATER 100%

VAPOR PRESSURE, mmHg AT 20 C N/A

MELTING POINT OR RANGE, F N/A

BOILING POINT OR RANGE, F 212 DEG F OR HIGHER

EVAPORATION RATE (BUTYL ACETATE = 1) N/A

APPEARANCE AND ODOR BRIGHT PINK LIQUID
HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES OF SUBSTANCE AS A GAS, VAPOR, DUST OR MIST).

IV. FIRE AND EXPLOSION

FLASH POINT, F (GIVE METHOD) N/A

AUTO IGNITION TEMPERATURE, F N/A

FLAMMABLE LIMITS IN AIR, VOLUME %: N/A **LOWER(LEL)**_____ **UPPER(UEL)**____

FIRE EXTINGUISHING MATERIALS:
_X_ **WATER SPRAY** ___ **CARBON DIOXIDE** ____ **OTHER:**
___ **FOAM** ___ **DRY CHEMICAL**

SPECIAL FIREFIGHTING PROCEDURES: PRODUCT IS NOT COMBUSTIBLE, USE APPROPRIATE AGENTS FOR MATERIALS SURROUNDING IT.

UNUSUAL FIRE AND EXPLOSION HAZARDS: WILL LIBERATE FLAMMABLE HYDROGEN GAS UPON CONTACT WITH ANY METALS.

V. FIRST AID INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE.

EYES: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING THE UPPER AND LOWER EYELIDS. CALL A PHYSICIAN AT ONCE.

CONTACT WITH SKIN: IMMEDIATELY FLUSH WITH WATER OF AT LEAST 15 MINUTES. CALL A PHYSICIAN. IF CLOTHING COMES IN CONTACT WITH THE PRODUCT, THE CLOTHING SHOULD BE REMOVED IMMEDIATELY AND SHOULD BE LAUNDERED BEFORE RE-USE.

INGESTION: IMMEDIATELY DRINK LARGE QUANTITIES OF WATER. **DO NOT** INDUCE VOMITING. CALL A PHYSICIAN AT ONCE. **DO NOT** GIVE ANYTHING BY MOUTH IF THE PERSON IS UNCONSCIOUS OR IF HAVING CONVULSIONS. FLUORIDE - LETHAL DOSE .03MG TO .11MG/LITRE

INHALATION: IF PERSON EXPERIENCES NAUSEA, HEADACHE OR DIZZINESS, PERSON SHOULD STOP WORK IMMEDIATELY AND MOVE TO FRESH AIR UNTIL THESE SYMPTOMS DISAPPEAR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN, KEEP THE PERSON WARM AND AT REST. CALL A PHYSICIAN. IN THE EVENT THAT AN INDIVIDUAL INHALES ENOUGH VAPOR TO LOSE CONSCIOUSNESS, PERSON SHOULD BE MOVED TO FRESH AIR AT ONCE AND A PHYSICIAN SHOULD BE CALLED IMMEDIATELY. IF BREATHING HAS STOPPED, ARTIFICIAL RESPIRATION SHOULD BE GIVEN IMMEDIATELY. IN ALL CASES, ENSURE ADEQUATE VENTILATION AND PROVIDE RESPIRATORY PROTECTION BEFORE THE PERSON RETURNS TO WORK.

NOTE TO PHYSICIAN: FLUORIDE ION FOUND IN HYDROFLUORIC ACID READILY PENETRATES THE SKIN AND OTHER TISSUES CAUSING DESTRUCTION OF DEEP

TISSUE LAYERS INCLUDING BONE. TREATMENT IS DIRECTED TOWARD TYING UP THE FLUORIDE ION AND CAN BE ACCOMPLISHED BY THE USE OF QUATERNARY AMMONIUM COMPOUNDS (SUCH AS BENZALKONIUM OR BENZETHONIUM CHLORIDE) OR CALCIUM GLUCONATE. THE EFFECTS OF CONTACT WITH HYDROFLUORIC ACID OR ITS VAPORS MAY BE DELAYED. LIFE THREATENING HYPOCALCEMIA CAN RESULT FROM EXPOSURE AND SHOULD BE SEARCHED FOR AND AGGRESSIVELY TREATED WHEN PRESENT.

HEALTH EFFECTS OR RISKS FROM EXPOSURE. EXPLAIN IN LAY TERMS. ATTACH EXTRA PAGE IF MORE SPACE IS NEEDED.

INHALATION

ACUTE: INHALATION OF HYDROFLUORIC ACID MIST OR HYDROGEN FLUORIDE GAS MAY CAUSE SEVERE IRRITATION OF THE MUCOUS MEMBRANES AND RESPIRATORY TRACT. ACUTE SYMPTOMS MAY INCLUDE BURNING OF THE NOSE, THROAT AND UPPER RESPIRATORY TRACT, NASAL CONGESTION, COUGHING, CHOKING, CHILLS, CHEST TIGHTNESS, AND BRONCHITIS. HIGH CONCENTRATIONS IN AIR MAY CAUSE RAPID INFLAMMATION AND CONGESTION OF THE LUNGS AS WELL AS SEVERE BREATHING DIFFICULTIES THAT MAY RESULT IN PULMONARY EDEMA. SEVERE RESPIRATORY EFFECTS MAY BE DELAYED IN ONSET (AFTER THE EXPOSURE HAS CEASED). IN SOME SEVERE ACUTE INHALATION CASES, INHALATION OF HF HAS CAUSED SOME DELETERIOUS EFFECTS ON FLUORIDE CONTENT IN THE BONE (HYPOCALCEMIA).

CHRONIC: REPEATED INHALATION AT EXPOSURE CONCENTRATIONS GREATER THAN PRESENT OCCUPATIONAL EXPOSURE LIMITS MAY CAUSE AN INCREASE IN BONE AND TOOTH FLUORIDE CONTENT (DECALCIFICATION).

SKIN

ACUTE: CONTACT WITH THE LIQUID OR HIGH CONCENTRATIONS IN THE AIR MAY BE CORROSIVE WITH SEVERE BURNS WITH LOCALIZED DESTRUCTION OF TISSUE. THIS MAY RESULT IN DEEP TISSUE DESTRUCTION AND POSSIBLE DECALCIFICATION OF BONE. EFFECTS ARE OFTEN DELAYED IN ONSET (2 TO 24 HOURS). INITIAL SIGNS MAY BE A BURNING SENSATION OR STEADY THROBBING PAIN. IF THE NAILS ARE INVOLVED, THE BURN MAY INITIALLY APPEAR AS A BLUE-BLACK DISCOLORATION OF THE NAIL BED WITH SIGNIFICANT PAIN.

CHRONIC: EFFECTS OF ACUTE EXPOSURE MAY APPEAR DELAYED IN ONSET. IF SIGNIFICANT EXPOSURE HAS OCCURRED A SYSTEMIC HYPOCALCEMIA (DECALCIFICATION OF BONE AND TOOTH) MAY OCCUR.

EYE

ACUTE: CONTACT WITH EYES MAY CAUSE SEVERE IRRITATION AND BE CORROSIVE (BURNS) WITH POSSIBLE PERMANENT EYE DAMAGE AND IMPAIRMENT OF VISION.

INGESTION

ACUTE: INGESTION MAY RESULT IN SEVERE BURNS TO THE MOUTH, THROAT AND STOMACH. EFFECTS MAY INCLUDE SEVERE SWELLING OF THE ORAL MUCOSA, NAUSEA, VOMITING, PAIN, DIARRHEA, BLEEDING, ULCERATION AND MAY BE FATAL.

CHRONIC: THERE IS NO DATA AVAILABLE ON THE CHRONIC INGESTION OF HYDROFLUORIC ACID. ITS ACUTE EFFECTS WOULD PROBABLY MAKE THIS OCCURRENCE UNLIKELY.

VI. TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
ORAL, DERMAL, INHALATION, EYE CONTACT

WARNING STATEMENTS AND WARNING PROPERTIES
CORROSIVE TO ALL TISSUES CONTACTED INCLUDING SKIN.
BURNS MAY BE DELAYED IN ONSET AND NOT BE READILY VISIBLE.
MAY BE FATAL IF SWALLOWED.
HARMFUL IF INHALED.

HUMAN DOSE RESPONSE DATA

ODOR THRESHOLD: THE ODOR THRESHOLD FOR HYDROGEN FLUORIDE HAS BEEN REPORTED TO BE BETWEEN 0.03 AND 0.11 MG/CUBIC METER.

INHALATION THRESHOLD: HYDROFLUORIC ACID IS DIFFERENT THAN MANY ACIDS IN THAT IT MAY CAUSE EFFECTS THAT ARE NOT READILY OBSERVED. THEREFORE, IRRITATION THRESHOLD FOR THE ACID ITSELF IS NOT RELEVANT. REPEATED EXPOSURE TO HYDROGEN FLUORIDE GAS FOR 6 HOURS/DAY, 5 DAYS/WEEK FOR 15 DAYS AT CONCENTRATIONS BETWEEN 2.1 AND 3.9 MG/CUBIC METER HAS BEEN SHOWN TO CAUSE SLIGHT IRRITATION OF THE EXPOSED SKIN, EYES, AND NOSE IN HUMANS.

TOXIC DOSE AND EFFECTS: HYDROFLUORIC ACID HAS CAUSED NUMEROUS CASES OF BURNS TO THE SKIN AND EYES AND HAS BEEN KNOWN TO CAUSE EFFECTS ON THE RESPIRATORY TRACT. IN EXTREME SITUATIONS THIS HAS RESULTED IN EFFECTS OF FLUORIDE CONTENT OF THE BONE.

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: THE IDLH FOR HYDROGEN FLUORIDE IS 20 PPM IN AIR.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION:
ACUTE: INHALATION OF HYDROFLUORIC ACID MIST OR HYDROGEN FLUORIDE GAS MAY CAUSE SEVERE IRRITATION OF THE MUCOUS MEMBRANES AND RESPIRATORY TRACT. ACUTE SYMPTOMS MAY INCLUDE BURNING OF THE NOSE, THROAT AND UPPER RESPIRATORY TRACT, NASAL CONGESTION, COUGHING, CHOKING, CHILLS, CHEST TIGHTNESS, AND BRONCHITIS. HIGH CONCENTRATIONS IN AIR MAY CAUSE RAPID INFLAMMATION AND CONGESTION OF THE LUNGS AS WELL AS SEVER BREATHING DIFFICULTIES THAT MAY RESULT IN PULMONARY EDEMA. SEVER RESPIRATORY EFFECTS MAY BE DELAYED IN ONSET (AFTER THE EXPOSURE HAS CEASED). IN SOME SEVERE ACUTE INHALATION CASES, INHALATION OF HF HAS CAUSED SOME DELETERIOUS EFFECTS ON FLUORIDE CONTENT IN THE BONE (HYPOCALCEMIA).

CHRONIC: REPEATED INHALATION AT EXPOSURE CONCENTRATIONS GREATER THAN PRESENT OCCUPATIONAL EXPOSURE LIMITS MAY CAUSE AN INCREASE IN BONE AND TOOTH FLUORIDE CONTENT (DECALCIFICATION).

SKIN:

ACUTE: CONTACT WITH THE LIQUID OR HIGH CONCENTRATIONS IN THE AIR MAY BE CORROSIVE WITH SEVERE BURNS WITH LOCALIZED DESTRUCTION OF TISSUE. THIS MAY RESULT IN DEEP TISSUE DESTRUCTION AND POSSIBLE DECALCIFICATION OF BONE. EFFECTS ARE OFTEN DELAYED IN ONSET (2 TO 24 HOURS). INITIAL SIGNS MAY BE A BURNING SENSATION OR STEADY THROBBING PAIN. IF THE NAILS ARE INVOLVED, THE BURN MAY INITIALLY APPEAR AS A BLUE-BLACK DISCOLORATION OF THE NAIL BED WITH SIGNIFICANT PAIN.

CHRONIC: EFFECTS OF ACUTE EXPOSURE MAY APPEAR DELAYED IN ONSET. IF A SIGNIFICANT EXPOSURE HAS OCCURRED A SYSTEMIC HYPOCALCEMIA (DECALCIFICATION OF BONE AND TOOTH) MAY OCCUR.

EYE:

ACUTE: CONTACT WITH EYES MAY CAUSE SEVERE IRRITATION AND BE CORROSIVE (BURNS) WITH POSSIBLE PERMANENT EYE DAMAGE AND IMPAIRMENT OF VISION.

INGESTION:

ACUTE: INGESTION MAY RESULT IN SEVERE BURNS TO THE MOUTH, THROAT AND STOMACH. EFFECTS MAY INCLUDE SEVERE SWELLING OF THE ORAL MUCOSA, NAUSEA, VOMITING, PAIN, DIARRHEA, BLEEDING, ULCERATION AND MAY BE FATAL.

CHRONIC: THERE IS NO DATA AVAILABLE ON THE CHRONIC INGESTION OF HYDROFLUORIC ACID. ITS ACUTE EFFECTS WOULD PROBABLY MAKE THIS OCCURRENCE UNLIKELY.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:
NONE KNOW OR REPORTED.

VII. ANIMAL TOXICOLOGY

ACUTE TOXICITY
ORAL LD 50: NO AVAILABLE DATA
DERMAL LD 50: NO AVAILABLE DATA
INHALATION LD 50: 342 PPM/1 HOUR (MOUSE)

AQUATIC TOXICITY
FLUORIDE IS A NATURAL CONSTITUENT OF MANY INFLUENT WATERS BECAUSE IT IS ADDED TO MANY MUNICIPAL WATER SUPPLIES. THERE IS SOME EVIDENCE IN THE LITERATURE THAT VALUES OF 1.5 MG FLUORIDE/LITER OF WATER MAY CAUSE SLIGHT EFFECTS ON SOME SPECIES OF FISH. AT LEVELS GREATER THAN 100 MG FLUORIDE/LITER OF WATER, LETHALITY IN SEVERAL SPECIES HAS BEEN REPORTED.

ACUTE TARGET ORGANS EFFECTS IN LABORATORY ANIMALS
THE PRIMARY TOXIC EFFECTS OF ACUTE HYDROGEN FLUORIDE OR HYDROFLUORIC ACID EXPOSURE IN LABORATORY ANIMALS IS ON THE RESPIRATORY SYSTEM. SHORT EXPOSURES OF UP TO 3 HOURS AT CONCENTRATIONS OF 200-20,000 MG/CUBIC METER RESULTED IN SEVERE IRRITATION OF THE RESPIRATORY TRACTS AND EYES OF RABBITS, DOGS, GUINEA PIGS, RAT, AND MICE, FOLLOWED BY DEATH IN MOST OF THE EXPOSED ANIMALS. SEVERAL ANIMAL STUDIES HAVE SHOWN THAT INHALATION OF HIGH CONCENTRATIONS OF HYDROGEN FLUORIDE OR DIRECT CONTACT RESULTS IN INCREASED DEPOSITION OF FLUORIDE IN THE BONES.

CHRONIC TARGET EFFECTS IN LABORATORY ANIMALS
NO CHRONIC TOXICITY DATA IN LABORATORY ANIMALS IS AVAILABLE ON HYDROGEN FLUORIDE OR HYDROFLUORIC ACID. HOWEVER, REPEATED EXPOSURE EXPERIMENTS IN LABORATORY ANIMALS HAVE SHOWN SIMILAR TARGET ORGAN EFFECTS AS IN ACUTE EXPERIMENTS. RATS, MICE, GUINEA PIGS, RABBITS, AND DOGS EXPOSED AT CONCENTRATIONS OF HYDROGEN FLUORIDE OF 25 MG/CUBIC METER FOR 6 HOURS/DAY, 6 DAYS/WEEK FOR 65 WEEKS SHOWED PULMONARY EDEMA AND HEMORRHAGE. CORNEAL ULCERATIONS OCCURRED IN LABORATORY ANIMALS AT REPEATED EXPOSURES AS LOW AS 8 MG/CUBIC METER. REPEATED EXPOSURES OF LABORATORY ANIMALS HAS ALSO SHOWN TO CAUSE EFFECTS ON THE KIDNEY AND LIVER AT EXPOSURES AS LOW AS 15 MG/CUBIC METER.

DEVELOPMENTAL AND REPRODUCTIVE TOXICITY
IN ADDITION TO HEMORRHAGE AND EDEMA OF THE LUNG, DEGENERATIVE TESTICULAR CHANGES AND ULCERATIONS OF THE SCROTUM WERE NOTED IN DOGS EXPOSED FOR 5 WEEKS AND 6 HOURS/DAY, 6 DAYS/WEEK TO 25 MG/CUBIC METER HYDROGEN FLUORIDE GAS.
THE AMERICAN MEDICAL ASSOCIATION ADVISORY PANEL ON REPRODUCTIVE HAZARDS IN THE WORKPLACE DOES NOT BELIEVE THAT HUMAN EXPOSURES AT OR BELOW RECOMMENDED WORKPLACE LIMITS WILL RESULT IN A RISK TO THE MOTHER OR FETUS.

MUTAGENICITY
THERE ARE SOME REPORTS IN THE LITERATURE THAT SUGGEST THAT EXPOSURE TO HYDROGEN FLUORIDE MAY PRODUCE EFFECTS ON GENETIC MATERIAL. THESE TESTS HAVE NOT BEEN WELL SUBSTANTIATED AND ARE NOT CONCLUSIVE ON THE MUTAGENIC POTENTIAL FOR HUMANS.

SUSPECTED CANCER AGENT?

_X___NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
ASTHMA, EMPHYSEMA, AND OTHER RESPIRATORY DISEASES.

VIII. REACTIVITY DATA

STABILITY: _X___**STABLE** ____**UNSTABLE**

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG CAUSTIC AND CHLORINE.

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS): THERMAL DECOMPOSITION CAUSES LIBERATION OF HF AND NH3. CONTACT WITH OTHER BASES RELEASES NH3. TOXICITY OF THIS PRODUCT IS DUE TO THE NATURE OF HF.

HAZARDOUS POLYMERIZATION: ____**MAY OCCUR** _X__**WILL NOT OCCUR**

CONDITIONS TO AVOID: MIXING WITH STRONG ACIDS, ALKALIS, AMINES, 2-AMINO ETHANOL, CHLOROSULFURIC ACID, GLASS, METALS, NITROGEN COMPOUNDS, OLEUM, ORGANIC ANHYDRIDES, PROPYLENE OXIDE, VINYL ACETATE.

IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES): WEAR PROTECTIVE EQUIPMENT. CONTAIN SPILL INTO MARKED CONTAINER FOR RECLAMATION OR DISPOSAL. AVOID DISCHARGE TO SANITARY SEWERS AND BODIES OF WATER.

PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): SUBMIT TO AN APPROVED CHEMICAL DISPOSAL SERVICE FOR DISPOSITION IN ACCORDANCE WITH LOCAL GOVERNMENT REGULATIONS.

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

X. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: NONE

RESPIRATORY PROTECTION (TYPE): CARTRIDGE MASK, USE CARTRIDGE FOR FORMALDEHYDE CHLORINE, HYDROGEN CHLORINE, SULFUR DIOXIDE MSHA - NIOSH APPROVED TC-23C-741

EYE PROTECTION (TYPE): GOGGLES

GLOVES (SPECIFY MATERIAL): HYDROGEN OR EQUIVALENT GLOVES TO ELBOW.

OTHER CLOTHING AND EQUIPMENT: CHEST WADERS OF RUBBER COAT.

WORK PRACTICES, HYGIENIC PRACTICES: DO NOT USE AROUND OTHER CLEANING COMPOUNDS.

OTHER HANDLING AND STORAGE REQUIREMENTS: KEEP IN COOL AND DRY STORAGE AREA.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:
IX HMIS RATING SYSTEM
HEALTH 2, FLAMMABILITY 0, REACTIVITY 1

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL AT: 1(800)255-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: DU A WAY

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311 OAKLAND, CA 94601
PHONE NUMBER FOR ADDITIONAL INFORMATION: (510) 532-2275

DATE PREPARED OR REVISES: 03/96 **NAME OF PREPARER:** TJE

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES	CAS NUMBERS	PERCENT
PHOSPHORIC ACID	7664-38-2	32%
CITRIC ACID	77-92-9	14%

EXPOSURE LIMITS IN AIR (GIVE UNITS)

ACGIH TLV

OSHA PEL

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1) NON VOLATILE

SPECIFIC GRAVITY 1.229

SOLUBILITY IN WATER 100%

VAPOR PRESSURE, mmHg AT 20 C .03MM

MELTING POINT OR RANGE, F -17.5 DEG C

BOILING POINT OR RANGE, F 130 DEG C

EVAPORATION RATE (BUTYL ACETATE = 1) NON VOLATILE

APPEARANCE AND ODOR CLEAR LIQUID - NO ODOR
HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES OF SUBSTANCE AS A GAS, VAPOR, DUST OR MIST).

IV. FIRE AND EXPLOSION

FLASH POINT, F (GIVE METHOD) NON COMBUSTIBLE

AUTO IGNITION TEMPERATURE, F N/A

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER(LEL)_____ UPPER(UEL)____

FIRE EXTINGUISHING MATERIALS:
___WATER SPRAY ___CARBON DIOXIDE __X__OTHER:
___FOAM ___DRY CHEMICAL

SPECIAL FIREFIGHTING PROCEDURES: USE FULL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING APPARATUS. THERMAL DECOMPOSITION EMITS TOXIC FUMES OF OXIDES OF PHOSPHORUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE.

INHALED: SEVERE IRRITANT - TCLO (HUMAN)

CONTACT WITH SKIN OR EYES: EYES: SEVERE IRRITANT, CHEMICAL BURNS LIKELY.
SKIN: CORROSIVE TO TISSUE.

ABSORBED THROUGH SKIN: SLIGHTLY HAZARDOUS. LD50 (RABBIT)

SWALLOWED: SLIGHTLY HAZARDOUS. LD50 (RAT)

HEALTH EFFECTS OR RISKS FROM EXPOSURE. EXPLAIN IN LAY TERMS. ATTACH EXTRA PAGE IF MORE SPACE IS NEEDED.

ACUTE: IRRITANT, SLIGHTLY TOXIC WHEN INHALED.

CHRONIC: SLIGHTLY TOXIC WITH REPEATED INHALATION OR INGESTION. CAUSES BURNS TO EXPOSED TISSUE.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: FLUSH WITH COPIOUS WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

2

SKIN CONTACT: WASH OFF WITH WATER. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

INHALED: REMOVE FROM EXPOSURE. IF BREATHING IS DIFFICULT OR DISCOMFORT PERSISTS, OBTAIN MEDICAL ATTENTION.

SWALLOWED: RINSE MOUTH WITH WATER. GIVE COPIOUS WATER TO CAUSE DILUTION IN THE STOMACH. DO NOT INDUCE VOMITING.

SUSPECTED CANCER AGENT?

_X___NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
MODERATELY CORROSIVE AGENT WHICH MAY BURN ANY EXPOSED TISSUES UPON PROLONGED EXPOSURE.

VI. REACTIVITY DATA

STABILITY: _X___STABLE ____UNSTABLE

CONDITIONS TO AVOID:

INCOMPATIBILITY (MATERIALS TO AVOID): CONTACT WITH ALKALINE MATERIAL AND REACTIVE METALS.

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

HAZARDOUS POLYMERIZATION: ____MAY OCCUR _X__WILL NOT OCCUR

CONDITIONS TO AVOID:

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES): SODA ASH AND LIME ARE NEUTRALIZING AGENTS.

PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): DISCHARGE INTO A TREATMENT SYSTEM IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: ADEQUATE TO MEET MAXIMUM EXPOSURE TO ACID MIST OF 1 MG/CU M. IN 8 HOURS.

RESPIRATORY PROTECTION (TYPE): FOR SEVERE MIST USE NIOSH/MSHA ACID GAS RESPIRATOR.

EYE PROTECTION (TYPE): WEAR CHEMICAL GOGGLES, IF SPLASHING, SPRAY OR MIST CONDITIONS ARE POSSIBLE.

GLOVES (SPECIFY MATERIAL): RUBBER OR NEOPRENE

OTHER CLOTHING AND EQUIPMENT: RUBBER APRON AND BOOTS

WORK PRACTICES, HYGIENIC PRACTICES: PROTECT EYES AND SKIN FROM CONTACT.

OTHER HANDLING AND STORAGE REQUIREMENTS: NONE

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: PROTECT EYES AND SKIN FROM CONTACT.

4

Sierra Chemical Co.

Material Safety Data Sheet

This MSDS has been prepared within the guidelines of the Federal OSHA Hazard Communication Standard, 29CFR 1910.1200.

Product Name: Sierra Sani Chlor / Sierra Pure Chlor / Sierra Bleach

I. GENERAL INFORMATION

Manufacturer: Sierra Chemical Co.
Address: 2302 Larkin Cr.
Sparks, NV 89431
Date: 12-20-06 **Supersedes:** 9-23-05

Emergency Phone: (800) 424-9300
Information Phone: (775) 358-0888
CHEMTREC Phone: (800) 424-9300

II. PRODUCT IDENTIFICATION

Proper Shipping Name: Hypochlorite Solution
Synonyms/Common Names: Liquid Bleach, Liquid Chlorine
CAS Number: 7681-52-9

Chemical Formula: NaOCl
Chemical Family: Acid Salts, Oxidizers

III. PHYSICAL DATA

Appearance and Odor: Light greenish-yellow liquid, chlorine-like odor.

Boiling Point: Decomposes on heating
Water Solubility: Miscible
pH @ 25°C: 11.5 (approximately)

Vapor Pressure @ 25° C: No data
Specific Gravity: 1.08 - 1.26
Molecular Weight: 75.45 (NaOCl Active ingredient)

IV. INGREDIENTS/IDENTITY INFORMATION

Component	CAS No.	OSHA PEL/TLV	%
Sodium Hypochlorite	7681-52-9	Not Established	5-15
Sodium Chloride	7647-14-5		5-11
Sodium Hydroxide	1310-73-2	2 mg/m^3	.5-2.0
Water	7732-18-5		Balance

V. FIRE AND EXPLOSION DATA

Flash Point: N/A **Auto-ignition Temperature:** N/A **LEL:** N/A **UEL:** N/A

Extinguishing Media: Use any media appropriate for surrounding fire. Use water to cool containers exposed to fire.

Special Fire Fighting Procedures: Wear NIOSH approved self-contained breathing apparatus (SCBA) and protective clothing to prevent direct contact with the material (to include, but not limited to; boots, gloves, hard hat and impervious clothing).

Unusual Fire and Explosion Hazards: None

VI. STABILITY/REACTIVITY DATA

Stability: Unstable ☐ Stable ☒

Hazardous Polymerization: May Occur ☐ Will Not Occur ☒

Conditions to Avoid: High temperatures, sunlight and ultraviolet light. Decomposition will result from contact with iron and copper. Do not store at temperatures above 60-70o F (15-21o C). This product has a shelf life of up to 6 months at 60o F or lower.

Incompatibility: This product is incompatible with iron, copper, acids, ammonium compounds, organics and other oxidizers. It will react violently with phenyl acetonitrile, cellulose and ethylene.

Hazardous Decomposition or Byproducts: Produces toxic chlorine gas upon contact with acids.

VII. TOXICOLOGICAL INFORMATION/HEALTH HAZARD DATA

This product is harmful if inhaled or ingested and is harmful if contacted by the skin or eyes. The reported threshold for odor is approximately 0.9 mg/m^3 based on the odor of chlorine. Symptoms which may be aggravated by exposure are asthma, respiratory and cardiovascular disease.

Eye Contact: Contact with eyes will cause irritation. It may also cause burns to the eyes or impairment of vision and corneal damage.

Skin Contact: Contact with skin can cause burns and/or irritation. Symptoms of contact are redness, swelling and scab formation of contacted area. If prolong exposure occurs, it can cause damage to the secondary tissue resulting in the inability of regeneration to the affected area.

Inhalation: Sodium Hypochlorite when inhaled is irritating to the nose, mouth, throat, and lungs. Burns to the respiratory tract may occur with production of lung edema which could result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. High concentrations can result in permanent lung damage. Repeated exposure can cause impairment of lung function and permanent lung damage.

Ingestion: Irritation and/or burns can occur to the entire gastro-intestinal tract. Symptoms are characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration.

Exposure Limit Information: There is no established PEL for sodium hypochlorite. The Federal OSHA Permissible Exposure Limit (PEL) for sodium hydroxide is 2 mg/m^3.

VIII. EMERGENCY AND FIRST AID

If a known exposure occurs or if poisoning is suspected, do not wait for symptoms to develop. Immediately initiate the recommended procedures below. Simultaneously contact a Poison Control Center, a physician or the nearest hospital. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms and follow the advice given. For additional information call, **CHEMTREC (800) 424-9300.**

Eye Contact: Immediately flush the eyes with large quantities of running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Do not attempt to neutralize with chemical agents. Obtain medical attention as soon as possible. Oils or ointments should not be used. Continue the flushing for an additional 15 minutes if the physician is not immediately available.

Skin Contact: Immediately remove contaminated clothing and shoes under a safety shower. Flush all affected areas with large amount of water for at least 15 minutes. Do NOT attempt to neutralize with chemical agents. Obtain medical attention as soon as possible.

Inhalation: Nausea, headaches and dizziness are signs that a person should stop working and be taken to fresh air immediately until symptoms are gone. Should breathing become difficult, give oxygen. Keep the person warm, resting and contact a physician. A person could inhale enough vapor to lose consciousness. This person should be moved to fresh air. Call a physician immediately. If breathing stops, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before returning to work.

Ingestion: Do NOT induce vomiting. Immediately give large quantities of water. If vomiting does occur, give fluids again. Do not induce vomiting or give anything by mouth to an unconscious person. Call a physician or the nearest Poison Control Center immediately.

IX. PROTECTIVE EQUIPMENT REQUIREMENTS

Ventilation Requirements: Local exhaust ventilation if vapors, mists, or aerosols are present. If these are not present use general exhaust ventilation.

Respiratory Requirements: Due to low volatility and toxicity, a respirator is not normally needed. However, if vapors, mists, or aerosols are generated, wear a NIOSH/MSHA approved respirator.

Additional Protective Clothing: Use chemical safety goggles and impermeable gloves. Use rubber apron to protect body from splashing conditions.

Other: Safety shower and eye-wash station recommended.

X. HANDLING AND STORAGE

Normal Handling: Store in vented, closed, clean, non-corrosive containers in a cool, dry, well ventilated location, away from direct sunlight and from chemicals which may react with the bleach if spillage occurs. If closed containers become heated, the containers should be vented to release decomposition product . **Do not** mix or contaminate with ammonia, hydrocarbon, acids, alcohol's, ethers.

Do not store at temperatures above 60-70°F (15-21°). This product has a shelf life of up to six months at 60°F or lower. **DO NOT** package in metal containers.

Material Release or Spills: Always wear personal protective equipment including, but not limited to; boots gloves and impervious clothing. If hazardous concentrations are found in the local spill area, use a NIOSH/MSHA approved respirator. Vapors may be suppressed by the use of a water fog and all water runoff should be captured for treatment and disposal. Dike or contain spill by using a compatible absorbent such as sand, clay, soil or commercial absorbents.

XI. SPILL OR LEAK HANDLING

IN CASE OF AN EMERGENCY, CALL CHEMTREC (800) 424-9300

Any person responding to a spill or leak should use a NIOSH/MSHA approved respirator. Additional protective clothing must be worn to prevent direct contact with the material. This includes (but is not limited to) boots, gloves, hard hat, and impervious clothing. Compatible materials are neoprene, butyl rubber, viton, and saranex.

Hazardous concentrations may be found in the local spill area and immediately downwind. Vapors may be suppressed by the use of a water fog and all water run off should be captured for treatment and disposal. Dike or contain by using a compatible absorbent such as sand, clay, soil, commercial absorbents. Use vacuum or pump operation to remove if a water release and threat before disposal. Dispose of spill residues per guidelines in Section "XII Disposal" of this MSDS.

XII. ENVIRONMENTAL-REGULATORY STATUS/DISPOSAL

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous wastes.

EPA Hazardous Substance Status: Reportable Quantity (RQ) = 100 lbs. NOTICE: this product contains chlorine which is listed in the Toxic Substance Control Act (TSCA) and is subject to reporting requirements of EPCRA Section 313.

RCRA Status of Unused Material if Discarded: Not a hazardous waste. As a non-hazardous waste, this material should be disposed of in accordance with Federal, State and local regulations by treatment in a wastewater treatment system.

XIII. TRANSPORTATION DATA

DOT Proper Shipping Name: Hypochlorite Solution

Hazard Class: 8 **UN I.D. Number:** UN1791 **PACKING GROUP:** III

Reportable Quantity: 100 lbs. (80 Gallons 12.5% Solution)

XIV. ADDITIONAL INFORMATION

All information is offered in good faith, without guarantee or obligation for the accuracy or sufficiency thereof, or the results obtained, and is accepted at user's risk. The uses referred to are for the purpose of illustration only. User should investigate and establish the suitability of such use(s) in every case. Nothing herein shall be constructed as a recommendation for uses which infringe valid patents or as extending license under valid patents.

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL AT: 1(800)522-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: DOUBLE STRENGTH C & C PIPELINE CLEANER

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311, OAKLAND, CA 94601
PHONE NUMBER FOR ADDITIONAL INFORMATION: (510)532-2275

DATE PREPARED OR REVISES: 8/94 **NAME OF PREPARER:** TJE

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES	CAS NUMBERS	PERCENT
SODIUM DICHLOROCYANURATE DIHYDRATE	51580-86-0	2.5% ABS
CAUSTIC SODA, ANHYDROUS	1310-73-2	15.0% ABS

EXPOSURE LIMITS IN AIR (GIVE UNITS)
N/A

ACGIH TLV

OSHA PEL

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1)
N/A

Ph 12.0 @ 10 gm/Gallon

SPECIFIC GRAVITY
N/A

SOLUBILITY IN WATER
100%

VAPOR PRESSURE, mmHg AT 20 C
N/A

MELTING POINT OR RANGE, F
N/A
BOILING POINT OR RANGE, F
N/A
EVAPORATION RATE (BUTYL ACETATE = 1)
N/A
APPEARANCE AND ODOR WHITE POWDER - SLIGHT CHLORINE ODOR
HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES OF SUBSTANCE AS A GAS, VAPOR, DUST OR MIST).

IV. FIRE AND EXPLOSION

FLASH POINT, F (GIVE METHOD)
N/A
AUTO IGNITION TEMPERATURE, F
N/A
FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER(LEL)_____ UPPER(UEL)____
N/A
FIRE EXTINGUISHING MATERIALS:
_X__WATER SPRAY ___CARBON DIOXIDE ____OTHER:
___FOAM ___DRY CHEMICAL

SPECIAL FIREFIGHTING PROCEDURES:
NONE
UNUSUAL FIRE AND EXPLOSION HAZARDS: DECOMPOSITION PRODUCTS - CHLORINE CYANOGEN CHLORINE CARBON DIOXIDE.

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE.

INHALED:
SLIGHTLY TOXIC
CONTACT WITH SKIN OR EYES:
IRRITANT
ABSORBED THROUGH SKIN:
NON TOXIC
SWALLOWED: MODERATELY TOXIC

HEALTH EFFECTS OR RISKS FROM EXPOSURE. EXPLAIN IN LAY TERMS. ATTACH EXTRA PAGE IF MORE SPACE IS NEEDED.

ACUTE: EYE: IRRITANT, CORNIA DAMAGE
SKIN: IRRITANT
CHRONIC:
POSSIBLE EYE DAMAGE

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: WASH WITH WATER FOR 15 MINUTES - CALL PHYSICIAN

SKIN CONTACT: WASH WITH WATER

INHALED: REMOVE TO FRESH AIR

SWALLOWED: DRINK MILK FOLLOWED BY OLIVE OIL. INDUCE VOMITING AND CALL A PHYSICIAN IMMEDIATELY.

SUSPECTED CANCER AGENT?

_X__NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

VI. REACTIVITY DATA

STABILITY: _X__STABLE ____UNSTABLE

CONDITIONS TO AVOID:
EXTREME HEAT

INCOMPATIBILITY (MATERIALS TO AVOID):
ACIDS

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):
CHLORINE

HAZARDOUS POLYMERIZATION: ____MAY OCCUR _X__WILL NOT OCCUR

CONDITIONS TO AVOID: N/A

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES):
WEAR MSHA/NIOSH APPROVED RESPIRATOR AND RUBBER GLOVES

PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): SWEEP UP SPILL, WASH WITH WATER.

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS:
USE WITH ADEQUATE VENTILATION

RESPIRATORY PROTECTION (TYPE):
NONE IS REQUIRED IF GOOD VENTILATION IS MAINTAINED.

EYE PROTECTION (TYPE): SPLASH PROOF SAFETY GOGGLES

GLOVES (SPECIFY MATERIAL): RUBBER

OTHER CLOTHING AND EQUIPMENT: RUBBER APRON

WORK PRACTICES, HYGIENIC PRACTICES: NONE

OTHER HANDLING AND STORAGE REQUIREMENTS:
MAXIMUM TEMPERATURE 140 F

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:
WASH EQUIPMENT WITH WATER.

FOR TRANSPORTATION EMERGENCY CALL CHEM-TEL AT:1(800)255-3924

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: BELLA ROSA

MANUFACTURER'S NAME: AN-FO MANUFACTURING COMPANY

ADDRESS (COMPLETE MAILING ADDRESS): 3129 ELMWOOD AVE.
P.O. BOX 7311, OAKLAND, CA 94601

PHONE NUMBER FOR ADDITIONAL INFORMATION: (510)532-2275

DATE PREPARED OR REVISES: 8/90 **NAME OF PREPARER:** TJR

II. HAZARDOUS INGREDIENTS

CHEMICAL NAMES
DIETHANOLAMINE

CAS NUMBERS
111-42-2
PERCENT
TR
EXPOSURE LIMITS IN AIR (GIVE UNITS)

ACGIH TLV
.3ppm 8hr TWA (AGIH)
OSHA PEL

OTHER (SPECIFY)

III. PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1)
0
SPECIFIC GRAVITY
1.010
SOLUBILITY IN WATER
100%
VAPOR PRESSURE, mmHg AT 20 C

MELTING POINT OR RANGE, F

BOILING POINT OR RANGE, F

EVAPORATION RATE (BUTYL ACETATE = 1)

INHALED: NONE

SWALLOWED: DO NOT INDUCE VOMITING - CALL A PHYSICIAN.

SUSPECTED CANCER AGENT?

__X__ **NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.**

YES: ____FEDERAL OSHA ____NTP ____IARC

CALIFORNIA EMPLOYERS USING CAL/OSHA REGULATED CARCINOGENS MUST REGISTER WITH CAL/OSHA. THE CAL/OSHA AND FEDERAL OSHA CARCINOGEN LISTS ARE SIMILAR.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
SOME NONIONIC TYPE DETERGENTS WILL CAUSE A RASH TO PEOPLE WITH DRY SKIN.

VI. REACTIVITY DATA

STABILITY: _X___**STABLE** ____**UNSTABLE**

CONDITIONS TO AVOID:

INCOMPATIBILITY (MATERIALS TO AVOID):

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

HAZARDOUS POLYMERIZATION: ____**MAY OCCUR** _X__**WILL NOT OCCUR**

CONDITIONS TO AVOID:

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES (INCLUDE EMPLOYEE PROTECTION MEASURES):
SOAK UP BULK WITH ABSORBENT MATERIAL THEN HOSE DOWN IF POSSIBLE. SURFACE WILL BE SLIPPERY UNTIL THOROUGHLY RINSED.

PREPARING WASTES FOR DISPOSAL (CONTAINER TYPES, NEUTRALIZATION, ETC.): NONE

NOTE: DISPOSE OF ALL WASTES IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS:
NONE

RESPIRATORY PROTECTION (TYPE):
NONE

EYE PROTECTION (TYPE):
NONE

GLOVES (SPECIFY MATERIAL):
ONLY IF USER HAS DERMATITIS OR SEVERELY DRY SKIN.

OTHER CLOTHING AND EQUIPMENT:
NONE

WORK PRACTICES, HYGIENIC PRACTICES:
CLEAN ENVIRONMENT

OTHER HANDLING AND STORAGE REQUIREMENTS:
NONE

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

HARD SURFACES COULD BE SLIPPERY IF MATERIAL IS SPILLED, RINSE EQUIPMENT AND SURROUNDING AREA THOROUGHLY.

MATERIAL SAFETY DATA SHEET

Ashland

Page 001
Date Prepared: 06/04/02
Date Printed: 06/05/02
MSDS No: 301.0357622-001.001

CAUSTIC SODA BEADS **IMPORT**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity
Product Name: CAUSTIC SODA BEADS
SAP Material No: 3150251 400 00S
General or Generic ID: ALKALI

Company
Ashland
Ashland Distribution Co. &
Ashland Specialty Chemical Co.
P. O. Box 2219
Columbus, OH 43216
614-790-3333

Emergency Telephone Number:
1-800-ASHLAND (1-800-274-5263)
24 hours everyday

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
SODIUM HYDROXIDE	1310-73-2	98.0-100.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye
Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness.

Skin
Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage. The feeling of irritation or pain may not occur until several hours after the exposure. Additional symptoms of skin contact may include: hair loss, Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing
Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

Inhalation
It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). This material is a dust or may produce dust. Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland

Date Prepared: 06/04/02
Date Printed: 06/05/02
MSDS No: 301.0357622-001.001

CAUSTIC SODA BEADS IMPORT

Symptoms of Exposure
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: irritation (nose, throat, airways), cough, difficult breathing, lung edema (fluid buildup in the lung tissue), lung damage, damage to the mouth, throat, and/or airways, shock.

Target Organ Effects
No data

Developmental Information
Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

Cancer Information
There is no information available. The chance of this material causing cancer is unknown. This material is not listed as a carcinogen by the International Agency for Research on Cancer, the National Toxicology Program, or the Occupational Safety and Health Administration.

Other Health Effects
No data

Primary Route(s) of Entry
Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion.

4. FIRST AID MEASURES

Eyes
If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention. Do not remove the victim from water access for transport to a medical facility unless instructed to do so by qualified medical personnel. If possible, continue flushing the eye gently with water while transporting the victim.

Skin
Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

Swallowing
Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

Inhalation
If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Continued on next page

MATERIAL SAFETY DATA SHEET

Note to Physicians
Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract, skin, lung (for example, asthma-like conditions).

5. FIRE FIGHTING MEASURES

Flash Point
Not applicable

Explosive Limit
No data

Autoignition Temperature
No data

Hazardous Products of Combustion
No data

Fire and Explosion Hazards
No data

Extinguishing Media
Use an extinguishing media appropriate for surrounding fire..

Fire Fighting Instructions
Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

NFPA Rating
Health - 3, Flammability - 0, Reactivity - 1

6. ACCIDENTAL RELEASE MEASURES

Small Spill
Sweep up material for disposal or recovery.

Large Spill
Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean-up is completed. Stop spill at source. Dike to prevent spreading. Pump to salvage tank. Use protective clothing and devices as required. Stop spill at source. Scoop or vacuum transfer spilled product to clean containers for recovery. Sweep up unrecoverable product. Transfer sweepings, contaminated soil, and other materials to containers for disposal.

7. HANDLING AND STORAGE

Handling
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. All five-gallon pails and larger metal containers, including tank cars and tank trucks, should be

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland

Page 007
Date Prepared: 06/04/02
Date Printed: 06/05/02
MSDS No: 301.0357622-001.001

CAUSTIC SODA BEADS IMPORT

International Regulations

Inventory Status

DSL (CANADA) The intentional ingredients of this product are listed.

State and Local Regulations

California Proposition 65

None

New Jersey RTK Label Information

SODIUM HYDROXIDE	1310-73-2

Pennsylvania RTK Label Information

SODIUM HYDROXIDE (NA(OH))	1310-73-2

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Last page

ATTACHMENT 4

Pest and Vector Management Record

Pest and Vector Complaint Register

Mosquito Abatement District Variance Letter

PEST AND VECTOR MANAGEMENT RECORD

Date	Pest control method used

PEST AND VECTOR COMPLAINT REGISTER

Date	Person who received the complaint	Action taken to determine cause of the pest problem	Action taken to resolve pest problem	Results of the action	Additonal action req'd to prevent the problem from re-occurring

Kings Mosquito Abatement District

Post Office Box 907 Hanford, CA 93232

Board of Trustees
Bobby Lee, President
Lemoore
Joe Machado, Vice President
Tulare County
Cindy Harris, Secretary
Corcoran
Mark Dawson
Hanford
Len Giuliani
Kings County

Michael J. Cavanagh
District Manager

Steven F. Gilles
Assistant Manager/Biologist

Dave Hickey
Superintendent

District Office
10871 Bonney View Lane
Hanford, California 93230
Phone (559) 584-3326
Fax (559) 584-3310
office@kingsmosquito.net

December 1, 2009

Dan Hastert
Western Dairy Designs
316 West F Street, Suite 100
Oakdale, CA 95361

Re: Sozinho Dairy

After reviewing our records, the Sozihno Dairy has maintained a positive working relationship with the Kings Mosquito Abatement District to reduce mosquito larvae production. Therefore all variances to existing pond dimensions and access lanes are permissible under the Kings Mosquito Abatement District's guidelines. However the owner shall continue to assume responsibility to control mosquito breeding and larvae production. In addition the owner shall keep the storage lagoons and access lanes well maintained: free from weeds and not blocked by equipment, debris, or any other material.

Sincerely,

Steven F. Gilles
Assistant Manager/Biologist
Kings Mosquito Abatement District
559-584-3326

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ATTACHMENT 5

Dairy Dead Animal Service Letter – Baker Commodities

Kings County Emergency Action Plan for Dead Animal Management

Dead Animal Management Plan Records Form

Date: 07/21/08

Re: Dead Stock Removal Service

To whom it may concern:

Baker Commodities Inc. will provide dead stock removal service, upon request, for Sozinho dairies located at 11447 81/2 Ave. In Kings County. Baker Commodities Inc. will remove animals from the site as soon as is practicable barring emergencies or breakdowns restricting our capability to process dead stock.

Sincerely,

Doug Fletcher

Hanford Plant Manager
Baker Commodities Inc.
Kerman Division

EMERGENCY ACTION PLAN

FOR DEAD ANIMAL MANAGEMENT

Date Prepared: April 30, 2007

DEAD ANIMAL MANAGEMENT POLICY

BACKGROUND:

During the heat wave encountered in the summer of 2006, it became apparent that the current dead animal management system for the three county areas (Kings, Tulare and Fresno) was operating at or near capacity. When excess load is introduced into the system, or there is processing equipment failure, the system cannot remove bovine carcasses within the required 72 hour time frame as required by the *Dairy Element* of the *Kings County General Plan.* There were no approved backup or alternate systems in place, except emergency procedures, to respond to system failures. Other animal based agri-business may also be affected during natural disasters which could further add to the accumulation of animal carcasses requiring proper disposal. An alternative procedure is necessary to ensure that the public health and safety is protected, and that the dairy, poultry, swine and goat economies remains healthy. During a significant disease outbreak or natural disaster, it is important to have as many disposal options as possible.

CURRENT PROGRAM REQUIREMENTS:

The *Dairy Element* of the *Kings County General Plan* provides the requirements for the management of dead animals on dairies and associated calf/heifer facilities. The *Dairy Element* states:

> **Policy DE 4.1d:** *Dead Animals Management Plan (DAMP)* – A Dead Animal Management Plan (see Component 5 of Appendix J) shall be prepared and implemented for the disposal of all dead animals in a way that does not adversely affect groundwater or surface water, create public health concerns, or cause nuisances due to odor or vectors. The plan shall specify at a minimum that dead animals shall be removed from the dairy within 72 hours. Carcasses shall be stored in an area screened from public view and accessible via an all weather road or driveway. No animals shall be buried on site unless by order of an officer of a regulatory agency with jurisdiction over dead animal management, including, but not limited to, the County Agricultural Commissioner, the County Health Officer, and State and Federal Agencies.
>
> Since rendering is the most common method used to dispose of dead animals, a plan for the timely delivery of dead stock to appropriately permitted facilities that will process the dead stock will adequately serve as the *Dead Animal Management Plan (DAMP).*
>
> *(Mitigation for Impact 4.3-5)*

Appendix J of the *Dairy Element* states:

> **5. Dead Animal Management Plan (DAMP) (Policy DE 4.1d):**
> The *Dead Animal Management Plan* (DAMP) is a part of the *Technical Report* submitted with each application to either establish a new dairy or expand an existing dairy. The DAMP shall include a program of removing dead animals from the site within 72 hours, or by the end of the first working day after a holiday weekend. Burial or otherwise disposing of the carcasses on site shall not be allowed unless by order of the Health Officer, Agricultural Commissioner, or other authority authorized to make such an order.
>
> Record keeping for the DAMP shall be documented and the records shall be kept at the dairy site. The documentation shall include the number of dead animals by date; the date and method of their removal, and location where the dead animals were taken when removed from the dairy site. The documentation shall be made available to Code Compliance personnel upon their request.

Policy DE 4.1d states that a plan for the timely delivery to an appropriately permitted facility that will process the dead animals is adequate. However, none of the permit applications have included a contingency plan for situations when their primary method of carcass disposal is not available. Due to

the recent inability of Baker Commodities to meet their contractual obligations and accept drop-off clients, an alternative or back up method needs to be identified in all future applications for dairies.

OPTIONS:

1. Currently, there are no other businesses providing this service in Kings County. If a second company opened here, that could be the back-up plan.
2. Solid waste disposal is an option if the designated landfill's permit includes disposal of large animal carcasses. The only landfill in Kings County with such a permit is the Chemical Waste Management, Kettleman Hills Facility. CWM will not accept drop-off business, and does not collect carcasses from individual dairies after 8/31/2006. A central collection point would be required.
3. **On an emergency basis only and at the direction of the County of Kings**, on-site composting and on-site burial may be allowed.

According to the California Environmental Protection Agency the prescribed hierarchy is established as follows for emergency animal disposal:

- Temporary storage of carcasses for transport to rendering.
- Disposal at permitted solid waste landfills.
- On-site composting
- On-site burial

PROBLEM

Even if the new permits are issued with the revised requirement for a contingency or alternate plan for disposal of carcasses, that will not resolve the problem for the existing dairies which are not under the Dairy Element regulations or were permitted under the Dairy Element, but only identify the use of Baker Commodities as the Dead Animal Management Plan. Any solution to this issue will require options for existing dairies.

All animal facility owners and operators are required to consider measures that could be taken prior to an imminent emergency that could reduce the impact on the facility and the environment. This Emergency Action Plan is intended to act as a guideline for the facility owner/operator to accomplish that goal.

Other, more restrictive rules relating to dead animal management may be in effect at any given time. Please refer to the County Website at www.countyofkings.com for additional information. Information in this plan will be updated as necessary and reviewed annually to take advantage of new technology and methods as they become available.

EMERGENCY PERSONNEL NAMES AND PHONE NUMBERS

Kings County Emergency Director

Name: Supervisor Joe Neves Phone: (559) 582-3211 ext 2368

Kings County Environmental Health Services Director

Name: Jeff Taber Phone: (559) 582-3211 ext 2620

Community Development Director

Name: Greg Gatzka Phone: (559) 582-3211 ext 2682

Kings County Agricultural Commissioner

Name: Tim Niswander Phone: (559) 582-3211 ext 2833

Mortality Intervention Team

Name: Tim Niswander Phone: (559) 582-3211 ext 2833

ADDITIONAL RESOURCES

U.C. Davis Cooperative Extension

Name: Carol Collar Phone: (559) 582-3211 ext 2739

Baker Commodities, Inc.

Name: Doug Fletcher Phone: (559) 582-0271

Chemical Waste Management, Inc.

Name: Bob Henry Phone: (559) 386-9711

Darling International

Name: Jeff Baker Phone: (800) 245-1999

MORTALITY INTERVENTION TEAM

A Mortality Intervention Team established by Kings County and supervised by Kings County Agriculture Commissioner will respond to emergency requests from property owners or animal facility operators to provide technical assistance in the proper disposal of animal carcasses in an emergency situation. The team is comprised of 6-8 individuals, trained in the proper methods of composting and burial and is available upon request to provide on-site assistance as needed.

Property owners or animal facility operators are required to have available on-site, all necessary equipment, materials and labor in order to properly implement the recommendations of the Mortality Intervention Team. The property owner or facility operators must also ensure that land is identified and set aside in advance for the emergency disposal of animal carcasses.

Timely notification of the Mortality Intervention Team by the property owner or facility operator will limit the necessity of moving dead animals on County roadways.

STANDARD REQUIREMENTS FOR OFF-SITE BURIAL

Chemical Waste Management Facility:

This option may be available in instances of catastrophic events involving the death of numerous animals when the rendering plant is unable to process the carcasses in a timely manner. An emergency situation must be declared by the County of Kings if it exceeds Chemical Waste Management's permitted daily tonnage.

Landfilling of carcasses has not been a routine practice, but it does provide several advantages including environmental protection and speed of disposal in an emergency situation when rendering is overwhelmed or on-farm disposal is not possible. A landfill must first agree to accept carcasses. This will depend on a wide variety of factors including the nature of the mortality (infectious or not), the ability of the landfill to accept the waste without disruption to existing operations, the requirements of their solid waste permit, the financial incentive and the political and public perception factors.

For off-site disposal, the primary concern is carcass transport in a safe, sanitary and timely fashion, while not endangering public health.

- The carcasses must be hauled to the landfill in trucks that prevent leakage of carcass fluids on the roadway.
- The carcasses must be screened from public view during transportation to the landfill.

STANDARD REQUIREMENTS FOR EMERGENCY ON-SITE COMPOSTING

Currently California regulations prohibit the composting of mammalian flesh, organs, unprocessed hide, blood, bone and marrow, absent a declaration of emergency (Title 14, California Code of Regulations, Section 17852(i)).

Composting is a natural process, enhanced and accelerated by the mixing of organic waste with other ingredients in a prescribed manner for optimum microbial growth and aerobic decomposition. Composting transforms a waste product (manure and dead animals) into a useful soil amendment.

The process involves layering a prescribed weight or number of carcasses into straw, corn stalks, manure solids or other source of carbon with adequate moisture and oxygen. Within a matter of months, soft tissue is completely decomposed and all that is left are large bones. The residual composted "soil" becomes fertilizer for land application to crops. Studies have shown that properly composted carcasses do not pose a significant threat to air or water quality.

Composting can be difficult to manage and can result in objectionable odors. Supervision of the composting process by a knowledgeable person is necessary to ensure completed decomposition and a stable composted material.

This method applies only to animals that died on-site (no off-site transportation). On-site composting should only be attempted if the owner or dairy operator has the specific knowledge required to correctly carry out the process. **Contact the Kings County Agricultural Commissioner/ Mortality Intervention Team for specific details.**

STANDARD REQUIREMENTS FOR EMERGENCY ON-SITE BURIAL

The property owner is responsible for burial in a timely and sanitary manner so as not to become a nuisance on-site or to neighbors, to prevent the spread of disease to other cattle or wildlife and to protect public health and safety. An emergency situation must be declared.

Location and site consideration of proposed burial site:

- In determining the location of the potential burial site(s), consult the soil data available at http://websoilsurvey.nrcs.usda.gov to determine if burial of animals would be allowed per United States Department of Agriculture, Natural Resources Conservation Service (USDA/NRCS).
- Dead animal carcasses shall not be buried in a floodway or flood zone.
- Each burial site shall be located a minimum of 100 feet from any well, watercourses and water bodies.
- Burial trenches and pits must have at least a five (5) foot separation above highest groundwater level.

- Each burial site shall be located a minimum of 25 feet from any structure, property line or major cut or embankment.
- Each burial site shall be located a minimum of 0.25 miles from any park, road or highway.
- Burial of carcasses should only be deep enough to cover the top of the carcass with 4-6 feet of compacted soil to prohibit exhumation from feral animals (dogs, coyotes, etc).
- CALL BEFORE YOU DIG. Call 1-800-227-2600 if you are unsure if the proposed burial area might contain underground utilities.

Burial guidelines:

- Burial should be within a reasonable time period, i.e. 24-48 hours after death.
- Carcasses must be covered daily as to reduce vectors (dogs, rats, snakes, flies, etc) in and around the trench or pit.
- The pits or trenches should be surrounded by a berm to divert rainfall and runoff from the site.
- When the burial pit is full, the site should be capped with a 2 foot mound of soil so that precipitation is not allowed to collect in the pit.
- The burial site should be monitored so that these conditions remain after settling of decomposing carcasses and capping material.
- A record of the location of the burial site, the burial history of each burial site to include the date, species, head count and age should be kept by the owner and made available on request to the Kings County Environmental Health Division, Agricultural Commissioner or the Kings County Code Enforcement Division.

Environmental Impacts: The proposed burial site shall not be within an area where known cultural, historical, archeological or paleontological resources are present or suspected. The property owner/facility operator must contact the California Historical Resources Information System (CHRIS) and the Native American Heritage Commission (NAHC) in advance to determine if a review of their records indicates known cultural resources in or near the proposed burial site.

Policy DE 3.1e of the *Dairy Element of the Kings County General Plan* states that;

If any potential historical, archeological or paleontological resources are encountered during burial excavation, work in the vicinity of the find shall be suspended or diverted. The property owner/facility operator shall retain a qualified archeologist to perform an assessment of the resource. Depending on the nature of any such find, evaluation may include determination of site boundaries and assessment of site integrity and significance. Standards for the site evaluation shall comply with appropriate State and Federal requirements (including California Public Resources Code Section 21083.2i)). Evaluation shall include, if necessary, site mapping and/or limited subsurface testing using standard archeological methods in accordance with CEQA Guidelines Section 15064.5. If, after evaluation, the qualified archeologist judges an historical, archeological or paleontological resource to be of importance, a mitigation plan shall be prepared in accordance with appropriate guidelines and submitted to the Zoning Administrator. Mitigation could include avoidance, site capping, data recovery, or a combination of these or other measures, as determined by the qualified

archeologist or paleontologist. Consultation with representatives of recognized local Native American groups shall be reflected in the development of any mitigation plan affecting Native American cultural resources.

INDIVIDUAL FACILITY INVENTORY OF AVAILABLE RESOURCES

Animal facility owner/operators should use this form as an inventory tool to document the assets available to the facility in the event of a declared emergency. Once completed, maintain this form on-site.

Number of available trucks: Two

Type of truck: 1 Dump Truck, 1 Water Truck

Capacity of trucks:
30 cu. Yd. capacity (dump) / 3000 gallon (water).

Backhoe or other digging equipment:
Two each: 2 1/2 cubic yard front end loaders.

Materials: Lime, Straw, Manure, tarps, rope, etc,
Straw, manure, silage, & water for composting.
Tarps, ropes, lime for transport and burial.

Other: One ton bales of hay for constructing barriers for composting.

TRANSPORTATION OF DEAD ANIMALS

Transportation routes: (Depending on severity of emergency) *1) North on 8 1/2 av, Right on Hanford-Armona Rd. to Baker Commodities Hanford yard, 7480 Hanford-Armona Road, Hanford CA. (1.5 mi) *2) North on 8 1/2 av, Right on Hanford-Armona Rd, Left on Highway 43, left on Mountain View Ave, Right on S. Henderson Rd., Left on W. Manning Ave, Right on Highway 145, Left on Jensen Av, to Baker Commodities Kerman facility, 16801 Jensen Ave, Kerman, CA (54 mi) *3) North on 8 1/2 av, Right on Hanford-Armona Rd, Right on Highway 43, Right on Kansas Ave, Left on Highway 41, Right on Old Skyline Blvd. to Chemical Waste Mgmt. Landfill, 35251 Old Skyline Blvd, Kettleman CIty, CA. (42.5 mi)

Type of Vehicle used: _____

LOCATION OF LAND AVAILABLE AND RECORD OF COMPOSTING/BURIAL

Address: West side of 9th Ave, between Houston and Hanford-Armona

APN: 016-140-084

Estimated Capacity (# of animals) of site: 2,000

Date of Carcass Disposal: If an emergency is declared

Number and type of animal Disposed of: None yet; (Holstein Cattle)

Provide a site plan showing the exact location(s) of the proposed composting and/or burial sites. This site plan shall be made available to Kings County Planning Agency upon request.

SEE ATTACHED EMERGENCY BURIAL SITE PLAN

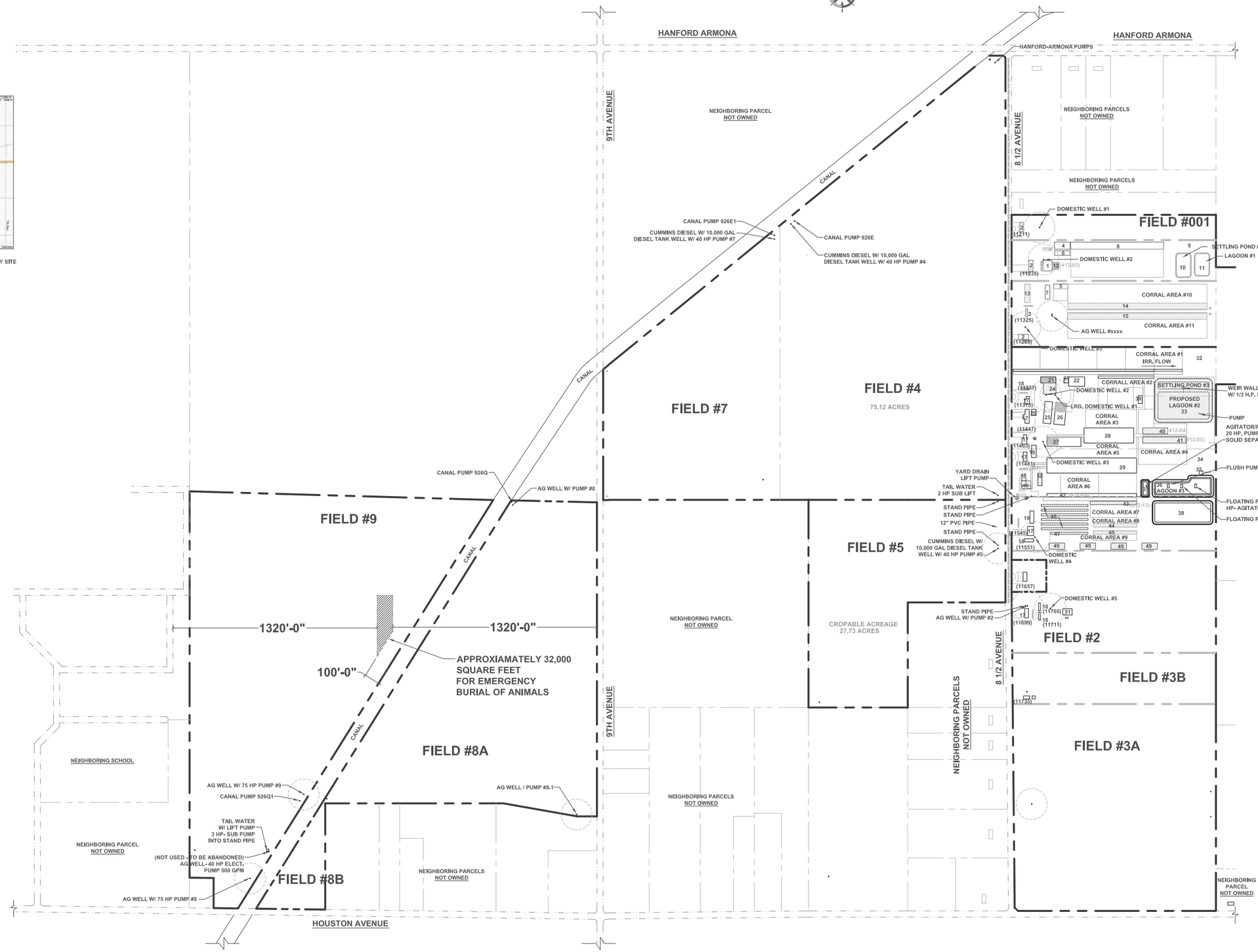
LEGEND

- PROPERTY LINE
- STREET LINE
- WATER LINE
- PERMANENT OPEN DITCH / PERMANENT CANAL
- PULL DITCH

VICINITY MAP

1- MILK PARLOR 58'W x 66'L x 17'D
2- RESIDENCE W/ GARAGE 26'W x 70'L x 15'D
3- MOBILE HOME 12'W x 50'L x 11'D
4- SHADE BARN 46'W x 100'L x 12'D
5- SHADE BARN 30'W x 91'L x 12'D
6- SHOP 26'W x 80'L x 14'D
7- COMMODITY BARN 60'W x 105'L x 16'D
8- SHADE BARN 46'W x 600'L x 12'D
9- SCRAPE MANURE STORAGE
10- SETTLING POND #1 150' x 100'
11- LAGOON #1 160' x 100'
12- PROPOSED SHADE OVER MB HOLDING PEN 35'-0"W x 50'L x 15'-0"D
13- PROPOSED CONCRETE FOR SILAGE
14- PROPOSED CALF SHADE BARN 38'W x 900'L x 12'D
15- PROPOSED CALF SHADE BARN 38'W x 900'L x 12'D
16- MILK PARLOR 24'W x 51'L x 17'D
17- RESIDENCE W/ GARAGE
18- MOBILE HOME 12'W x 50'L x 11'D
19- SHOP 26'W x 80'L x 14'D
20- OFFICE 30'W x 40'L x 13'D
21- HAY BARN 40'W x 100'L x 30'D
22- COMMODITY BARN 60'W x 105'L x 16'D
23- DEAD ANIMAL STORAGE
24- EQUIPMENT STORAGE 50'W x 90'L x 11'D
25- GARAGE 56'W x 142'L x 12'D
26- HAY BARN 70'W x 140'L x 30'D
27- MATERNITY BARN 61'W x 220'L x 22'D
28- FREESTALL BARN 98'W x 320'L x 26'D
29- FREESTALL BARN 98'W x 580'L x 26'D
30- SHADE BARN 26'W x 80'L x 12'D
31- SHOP 26'W x 80'L x 14'D
32- SCRAPE MANURE STORAGE
33- LAGOON II, SETTLING POND #2
34- SCRAPE MANURE STORAGE
35- SOLID SEPARATOR
36- LAGOON #3
37- FLUSHED MANURE EFFLUENT CATCH BASIN
38- BORROW PIT
39- SHADE BARN 26'W x 80'L x 12'D
40- PROPOSED SHADE BARN 28'W x 160'L x 13'-6"D
41- PROPOSED SHADE BARN 28'W x 280'L x 13'-6"D
42- PROPOSED CALF SHADE BARN 20'-6"W x 580'L x 12'D
43- PROPOSED CALF SHADE BARN 21'W x 300'L x 12'D
44- FUTURE CALF SHADE 20' x 280' x 12'
45- FUTURE CALF SHADE 20' x 280' x 12'
46- PROPOSED CALF PENS OVER CONCRETE FLUSH LANES
47- PROPOSED CALF PENS
48- PROPOSED EQUIPMENT ROOM ADD ON 56'W x 142'L x 12'D
49- PROPOSED HAY BARNS 40'W x 100'L x 21'D

50- EXISTING LIGHTS WILL BE REPLACED WITH GE M400A OR M-250 R2 FIXTURES AS PER TECH REPORT SECTION 10



SOZINHO DAIRY EMERGENCY BURIAL PLAN

0 150 300
BAR SCALE

388b

SHEET REV:	DESCRIPTION	TITLE PG REV:
ALL SHEETS @ REVISION "A"	INITIAL RELEASE	A
		B
		C
		D
		E

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
316 West F Street, Ste 100
Oakdale, CA 95361
(209) 848-8674
www.dairydesigners.com

Dwg. Date:	08-21-2009
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-17
Sheet #	1 of 8 Sheets
Rev Level	A

DEAD ANIMAL MANAGEMENT PLAN RECORDS

Date	Number of dead animals	Date and method of removal	Location where dead animals were taken

ATTACHMENT 6

Reconaissance Level Biological Survey

NOTE: A Reconnaissance Level Biological Survey for the subject site was prepared by Vollmar Consulting (VC). At the time, the survey covered both Sozinho Dairy #1 and Sozinho Dairy 3. The present CUP application is for a combined Sozinho Dairy composed of both the former Sozinho Dairy #1 and the former Sozinho Dairy 3. The acres of the site have been reduced since some fields believed to be available at the time have since turned out not to be available for manure application. These changes in no way detract from the validity of the Biological Survey. A copy of this Reconnaissance Level Biological survey is presented in Attachment 6.

VOLLMAR CONSULTING
NATURAL RESOURCE CONSULTANTS

BAY AREA OFFICE
1055 Creston Road
Berkeley, CA 94708
Phone: 510/559-9603
Fax: 510/559-9605
www.vollmarconsulting.com

RECONNAISSANCE-LEVEL BIOLOGICAL EVALUATION OF SOZIHNO DAIRIES #1 AND #3, KINGS COUNTY, CALIFORNIA

Prepared for:

Western Design
903 El Vecino Avenue
Modesto, CA 95350
Contact: Jeff Fleming
209/571-0531

Prepared by:

Vollmar Consulting
1055 Creston Road
Berkeley, CA 94708
Contact: John Vollmar
510/220-9001

August 12, 2008

TABLE OF CONTENTS

FIGURES AND TABLES:

1.0 INTRODUCTION

This report summarizes the methods and results of a reconnaissance-level biological evaluation of Sozinho Dairies #1 and #3 (project site) located in an unincorporated area of Kings County, just south-southeast of the city of Hanford (Figures 1 and 2). These dairies are contiguous to each another and are shown as a single project site on Figures 1 and 2. The owner of these dairies is in the process of obtaining County permits to expand existing dairy operations through an increase in the number of animals and possible construction of addition animal shades and other facilities.

This evaluation was conducted to check for the presence of wetlands or sensitive species habitat on the project site as required by the Diary Element of the Kings County General Plan. Specific policies within the Element that address biological survey requirements and avoidance of impacts to wetlands or sensitive species habitat are as follows:

- Policy DE 1.2e: Except as allowed by the conditional use permit, new or expanding dairy facilities shall not locate on wetlands or habitat for sensitive species. Where a survey identifies the presence of wetlands or habitat for sensitive species, a conditional use permit and additional environmental review will be required before any new dairy development or expansion may occur.
- Policy DE 3.3a: It is the policy of the County, for the purposes of siting dairies under this Element, that land continuously cultivated since 1985, or before, will not be considered wetlands or sensitive habitat. Temporarily fallow land which otherwise meets this requirement shall not be considered to be habitat for sensitive species simply because it is not being cultivated at the time. All applications for new or expanded dairies must submit a *Biological Resources Survey*. The survey shall be conducted in compliance with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and U.S. Army Corps of Engineers (USACE) guidelines, where applicable. If the survey identifies impacts on wetlands or habitat for sensitive species, then the applicant will not be eligible to obtain SPR approval by the Zoning Administration and will instead complete a conditional use permit (CUP) process and additional environmental reviews.
- Policy DE 3.3a, Section 6: The results of a *Biological Resources Survey* shall be made part of the *Technical Report* submitted with each application to either establish a new dairy or expand an existing dairy. The survey of habitat for sensitive species and wetlands shall be conducted by a qualified wildlife biologist prior to initiation of grading for each dairy facility to confirm the presence or absence of any nesting activity at each location. If habitat for sensitive species or wetlands is found, appropriate measures shall be taken to avoid destruction of active dens or nests. An appropriate buffer zone shall be established around any active den or nest based on consultation with CDFG. Construction activities shall be restricted in this zone until the qualified biologist has determined that the young animals are no longer using the dens or nests. Passive relocation methods shall be used by the qualified biologist in the event that removal of any wildlife from the impact area is deemed necessary by a regulatory agency with appropriate jurisdiction.

San Joaquin kit fox
California tiger salamander
western mastiff bat
burrowing owl
Atriplex depressa
vernal pool fairy shrimp
San Joaquin kit fox
vernal pool tadpole shrimp
Swainson's hawk
vernal pool fairy shrimp
burrowing owl
valley elderberry longhorn beetle
vernal pool tadpole shrimp
western spadefoot
burrowing owl
San Joaquin kit fox
vernal pool fairy shrimp
San Joaquin kit fox
San Joaquin kit fox
San Joaquin kit fox
hoary bat
San Joaquin kit fox
San Joaquin kit fox
Swainson's hawk
San Joaquin kit fox
Project Boundary
Swainson's hawk
San Joaquin kit fox
San Joaquin kit fox
San Joaquin kit fox
western pond turtle
San Joaquin kit fox
San Joaquin kit fox
Delphinium recurvatum
Atriplex subtilis
Atriplex erecticaulis
San Joaquin kit fox
San Joaquin tiger beetle
San Joaquin kit fox
Tipton kangaroo rat
Tipton kangaroo rat
San Joaquin kit fox
San Joaquin kit fox
San Joaquin kit fox
Swainson's hawk
Swainson's hawk
vernal pool fairy shrimp
San Joaquin kit fox
Swainson's hawk
Swainson's hawk
Swainson's hawk
San Joaquin kit fox
Swainson's hawk
Swainson's hawk
blunt-nosed leopard lizard
Swainson's hawk
Swainson's hawk

Legend

- CNDDB Special-status Animal
- CNDDB Special-status Plant
- Project Boundary

SOZINHO DAIRY PROJECT
CNDDB Special-status Species Map
Kings County, California

1:126,720

(1-in = 2 miles at B-size Layout)

0 2 4 Kilometers

0 1 2 4 Miles

VOLLMAR CONSULTING
NATURAL RESOURCE CONSULTANTS

Data Sources: Vollmar Consulting, August 2008
USGS 1:250k DRG (Fresno) | CNDDB, 2008
Map Projection: UTM, Zone 10, NAD83, Meters
Map File: Sozinho-CNDDB_188_B-P_2008-0812.mxd

Hanford Armona Rd
Lakeside Ditch
Almond Orchard
Corn Field
Dairy Facilities
Corn Field
Corn Field
Corn Field
Corn Field
Corn Field
9th Ave
8 1/2 Ave
Central Valley Hwy
Houston Ave

Legend

Project Boundary (~484 mapped acres)

SOZINHO DAIRY PROJECT
Survey Site Map (photo from 2006)
Kings County, California

N
W E
S

1:12,000

(1-in = 1,000-ft at B-size Layout)

0 250 500 Meters

0 500 1,000 2,000 Feet

VOLLMAR CONSULTING
NATURAL RESOURCE CONSULTANTS

Data Sources: Vollmar Consulting, August 2008
USDA/NAIP, 2006 (Photo)
Map Projection: UTM, Zone 10, NAD83, Meters
Map File: Sozinho-Site_188_B-P_2008-0812.mxd

2.0 METHODS

2.1 Preliminary Review

Prior to conducting the field survey, we obtained a high-quality aerial photograph and developed both a vicinity and site map for use during the field survey (Figures 1 and 2). We also developed a target list of sensitive species with potential to occur in the project vicinity and included occurrences documented in the California Natural Diversity Data Base (CNDDB 2008) on the vicinity and site maps. For the purposes of this report, the term "sensitive species" refers to species that are:

- Listed under the provisions of either the Federal or State Endangered Species Act (50 CFR 17.12 and 14 CCR 670.5, respectively);
- Recognized as species of concern by the U.S. Fish and Wildlife Service or species of special concern by the California Department of Fish and Game;
- Listed as rare, endangered, or species of concern by the California Native Plant Society (CNPS) (Lists 1-4);
- Species that meet the definition of rare, threatened, or endangered under CEQA (State CEQA Guidelines, Section 15380).

2.2 Reconnaissance Site Visit

Mr. John Vollmar of Vollmar Consulting conducted a one-day reconnaissance-level site visit on August 7, 2008 to assess existing conditions on and adjacent to the project site and to determine potential impacts the proposed project might have on wetlands or sensitive species habitat. Mr. Vollmar conducted the survey by driving around the project site, stopping occasionally to walk portions of the project site, and taking notes on observed conditions.

3.0 RESULTS

3.1 Existing Site Conditions

The project site is located south-southeast of the city of Hanford in Kings County, California (Figure 1). It is just west of Highway 43 (Central Valley Highway), south of Hanford-Armona Road, and north of Houston Avenue (Figure 2). The entire site is approximately 484 acres in total area and consists of existing dairy facilities situated in the central east of the project site and associated crop fields adjacent and to the west of the dairy facilities. The dairy facilities include milking facilities, animal shades, confinement pastures and manure lagoons. The crop fields are primarily use for growing corn used to feed the animals though there are two fields currently planted with almonds (Figure 2). All crop fields were being actively farmed at the time of the survey and the corn was mature and a few weeks from harvest.

No native or naturalized habitats occur anywhere within the project site. Nearly all surrounding lands are also developed as farms or crop fields and do not support any native or naturalized habitats. There are occasional stands of eucalyptus trees (*Eucalyptus globulus*) and a few valley oaks (*Quercus lobata*) adjacent to but not on the project site.

Lakeside Ditch runs along the western edge of the site and bisects the southwest-most corn field on the site. The ditch is used to transport and deliver irrigation water to local farms.

3.2 Potential Impacts to Wetlands or Other Sensitive Habitats

There are no native habitats, wetlands, or any other sensitive habitats on the project site. The entire project site, as well as all areas immediately surrounding site, have been developed as dairy facilities or crop fields used to grow corn, almonds and other crops. Any construction of new dairy shades would occur within currently farmed corn fields or almond orchards or within open areas within the area designated as 'dairy facilities' on Figure 2. No new or changed farming practices will be conducted within the fields adjacent to Lakeside Ditch.

3.3 Potential Impacts to Sensitive Species

Table 1 is a list of the sensitive species known from the project vicinity. Figure 2 shows the locations of documented occurrences of these species within 10-15 miles of the project site.

Since there are no native or naturalized habitats on the site, there is very low potential for sensitive species to occur. As described above, the dairy facilities consist of a mix of buildings, shades, confinement pastures, and manure lagoons that area actively used as part of the dairy operation. The remainder of the site consists of actively farmed corn fields or almond orchards. There are no vernal pools, grasslands, alkali scrub, or seasonal or perennial marsh or pond habitats and so no potential habitat for the sensitive species associated with these habitats occurs on the site.

The only semi-naturalized areas on the site that could be used as sensitive species habitat are the less frequently disturbed edges of dirt roads and farm fields that could support small mammal burrows and thus provide potential burrow sites for western burrowing owl (*Athene cunicularia hypugea*). However, no California ground squirrels (*Spermophilus beechyi*) or western burrowing owls were observed during the field surveys though a thorough survey was not conducted. The almond orchards and roads could provide movement corridors for San Joaquin kit fox (*Vulpes macrotis mutica*) traveling through the area though it is unlikely they would establish dens on the site given the high level of disturbance from active farming. Also, it is unlikely they would occur on the site given the general lack of suitable or preferred foraging or denning habitat on or adjacent to the site. While there are no large trees on the site, there are scattered stands of tall eucalyptus trees and occasional valley oaks that could be used as nesting sites by Swainson's hawks (*Buteo swainsonii*) and other raptors. Hoary bats (*Lasiurus cinereus*) could also use these trees for roosting. However, the project site does not generally provide foraging habitat for Swainson's hawks since they generally utilize open areas for foraging and generally do not forage within corn fields or almond orchards. No nests of Swainson's hawks or any other raptors were observed during the field survey though the survey was conducted at a time when nesting raptors would be difficult to observe.

Table 1. Sensitive wildlife and plant species documented in the vicinity of Sozinho Dairies #1 and #3, Kings County, CA.

SCIENTIFIC NAME[1]	COMMON NAME[1]	STATUS[2]	HABITAT
VERNAL POOL INVERTEBRATES			
Listed Species			
Branchinecta lynchi	Vernal Pool Fairy Shrimp	FT	Vernal pools
Lepidurus packardi	Vernal Pool Tadpole Shrimp	FE	Vernal pools
TERRESTRIAL INVERTEBRATES			
Listed Species			
Desmocerus californicus dimorphus	Valley Elderberry Longhorn Beetle	FT	Elderberry bushes (riparian)
Other Special Status Species			
Cicindela tranquerbarica ssp. *undescribed*	San Joaquin tiger beetle	FSC	Open sandy soils
AMPHIBIANS AND REPTILES			
Listed Species			
Ambystoma californiense	California Tiger Salamander	FT/CSSC	Vernal pools, stock ponds
Gambelia sila	Blunt-nosed Leopard Lizard	FE/CE	Grassland and alkali sink scrub
Thamnophis gigas	Giant Garter Snake	FT/CT	Marshes and sloughs
Other Special Status Species			
Scaphiopus hammondii	Western Spadefoot	FSC/CSSC	Vernal pools and grasslands
MAMMALS			
Listed Species			
Dipodomys nitratoides nitratoides	Tipton Kangaroo Rat	FE	Alkali scrub and grasslands
Vulpes macrotis mutica	San Joaquin Kit Fox	FE/CT	Open grasslands and scrub
Other Special Status Species			
Eumops perotis	Western mastiff bat	FSC	Roosts in deep crevices
Lasiurus cinereus	Hoary bat	FSC	Roosts in trees
BIRDS			
Listed Species			
Buteo swainsoni	Swainson's Hawk	CT	Riparian trees (nesting habitat)
Other Special Status Species			
Athene cunicularia hypugea	Western Burrowing Owl	FSC/CSSC	Grasslands, barren areas
PLANTS			

SCIENTIFIC NAME[1]	COMMON NAME[1]	STATUS[2]	HABITAT
Other Special Status Species			
Atriplex depressa	Brittlescale	CNPS 1B	Alkaline seasonal wetlands
Atriplex erecticaulis	Erectstem Saltbush	CNPS 1B	Alkaline seasonal wetlands
Atriplex subtilis	Subtle Orache	CNPS 1B	Alkaline seasonal wetlands
Delphinium recurvatum	Recurved Larkspur	CNPS 1B	Alkali scrub, grasslands, Foothill woodlands

1. Scientific and common names from CNDDB (2003) and CNPS (2001)
2. FE = Federally Listed Endangered Species; FT = Federally Listed Threatened Species; FPT = Federal Proposed Threatened; FC = Federal Candidate for Listing; FSC = Federal Species of Concern CE = State Listed Endangered Species; CSSC = California Department of Fish and Game Species of Special Concern; CDFG FP = Species Fully Protected under the CA Fish and Game Code California Native Plant Society (CNPS) Lists: List 1A = species presumed to be extinct; List 1B = species considered rare, threatened, or endangered in California and elsewhere; List 2: species rare or threatened in California but more common elsewhere; List 3: species about which more information is needed to make a determination regarding rarity; List 4 = watch list, species uncommon but not currently threatened or endangered.

4.0 SUMMARY AND RECOMMENDATIONS

The proposed project, involving an expansion of the currently permitted number of animals and potential future construction of additional animal shades and other facilities, is not expected to cause any impacts to wetlands, other sensitive habitats or habitat for sensitive species. The proposed activities may result in the conversion of existing corn fields or almond orchards to additional animal confinement areas or shades. Conversion of these habitats will not result in the loss of habitat for sensitive species.

Construction on new animal shades could cause indirect impacts to nesting raptors should any occur within ¼ mile of active nesting sites. Active nests could occur in tall trees in the project vicinity including eucalyptus and valley oaks. Prior to construction of any news shades or other facilities, an assessment should be made by a qualified biologist to determine if there are any suitable nesting trees within ¼ mile of the construction site and to check for nesting raptors if any suitable trees occur. Surveys only need to be conducted if construction is proposed during the nesting season (March – July). No surveys are required if construction is conducted outside of the nesting season.

No other additional biological surveys are recommended.

5.0 REFERENCES

CNDDB 2008. California Department of Fish and Game's California Natural Diversity Date Base. Rare Species Occurrence Records within a 10-15 mile radius of the project site.

CNPS 2008. Electronic Inventory of Rare and Endangered Plants of California, Electronic Version. California Native Plant Society, Sacramento, California.

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1055 Creston Road
Berkeley, CA 94708
Phone: 510/559-9603
Fax: 510/559-9605
www.vollmarconsulting.com

MEMORANDUM

To: Jeffrey Fleming, Western Dairy Design Associates, Inc. Date: 10/30/09

From: John Vollmar, Vollmar Consulting No. Pages: 1

Subject: Re-evaluation of Potential Impacts to Sensitive Biological Resources from Proposed Sozinho Dairy Expansion Project

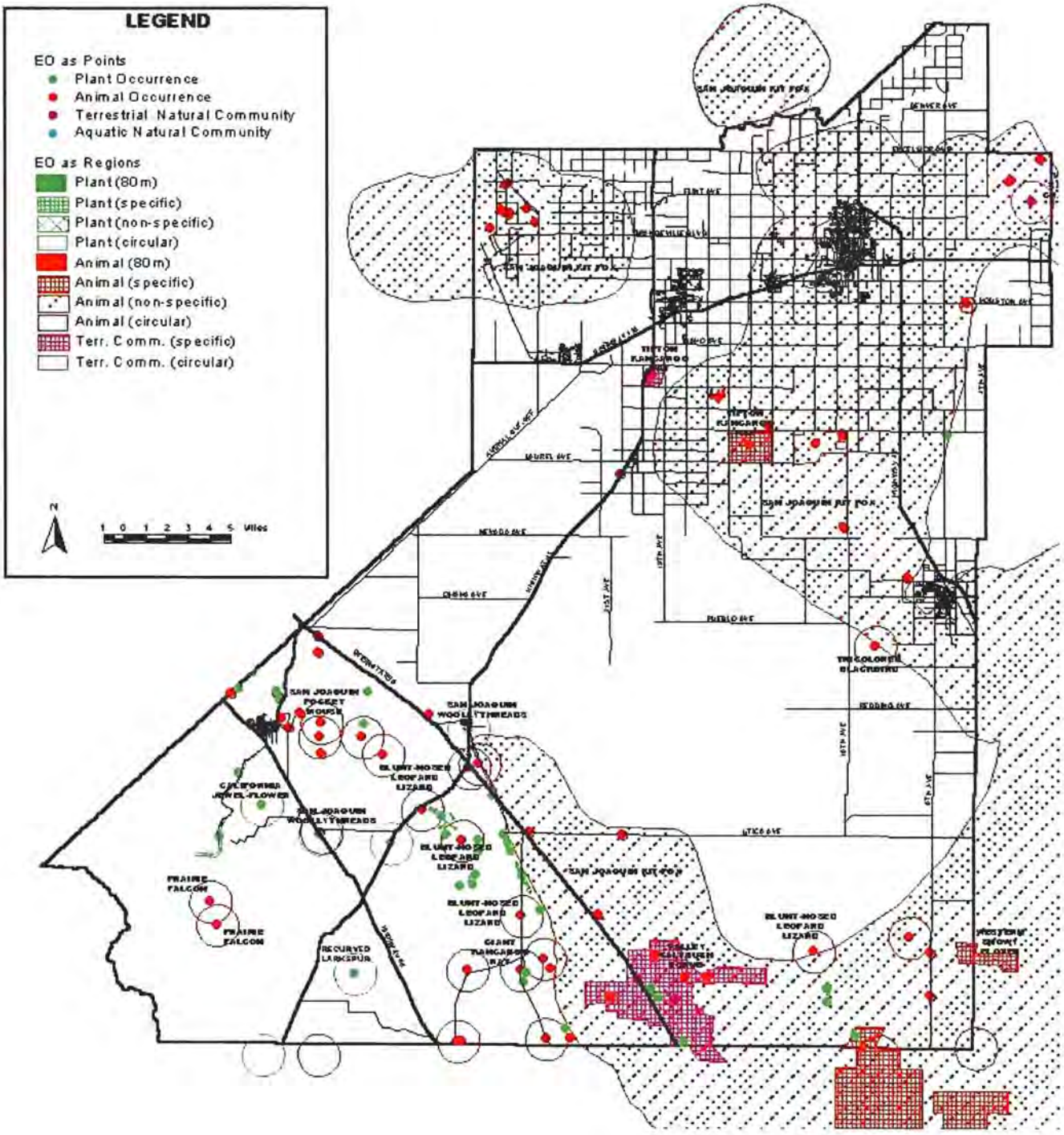
Vollmar Consulting prepared a report for Western Dairy Design Associates, Inc. entitled 'Reconnaissance-level Biological Evaluation of Sozinho Dairies #1 and #3, Kings County, California'. The report, dated August 12, 2008, evaluated potential impacts to sensitive biological resources from the proposed expansion of the dairy and possible construction of additional animal shades and other facilities. The report concluded that the proposed expansion was 'not expected to cause any impacts to wetlands, other sensitive habitats or habitat for sensitive species'.

At the time of the evaluation, Vollmar Consulting was unaware that an unpermitted expansion of the dairy facility had already occurred that involved the construction of additional animal shades and other related facilities. Also, the application includes some proposed additional construction not identified at the time of our evaluation. The details of the unauthorized and new proposed expansion construction are described in the letter that you provided me.

As your letter states and as is shown in the aerial photos attached to your letter, the unauthorized expansion occurred in the vicinity of existing facilities. Based on the findings of our original evaluation, neither the unauthorized expansion nor the additional proposed construction will cause any impacts to sensitive biological resources and the 'Summary and Recommendations' included in my original report apply to the past and proposed expansions.

Please contact me if you need additional information.

WILDLIFE AND HABITAT IN KINGS COUNTY



Source: California Natural Diversity Database
Wildlife & Habitat Data Analysis Branch
Department of Fish & Game, 2000

BASELINE

ATTACHMENT 7

Letters from CHRIS

Letters from NAHC

Letter from Table Mountain Rancheria

Kings County Historical Sites Map

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO
KERN
KINGS
MADERA
TULARE

Southern San Joaquin Valley
Information Center
California State University, Bakersfield
9001 Stockdale Highway
31 MW
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

FAX TRANSMITTAL

Date 11/5/09 Number of Pages 2 + Cover

Message To:

Name: David Avila / Jeff Fleming
Company: Western Dairy Design
Phone: 209-848-8674
FAX No: 209-848-8654

Message From:

Name: Celeste Thomson, Assistant Coordinator
FAX: 661/654-2415
Phone: 661/654-2289
Comments: Sozinho Record Search Results

Original will be sent X Original **will not** be sent ____

This FAX is intended to be a confidential communication with the person to whom it is addressed. If you receive this in error, please notify our office immediately.

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO
KERN
KINGS
MADERA
TULARE

Southern San Joaquin Valley Information Center
California State University, Bakersfield
9001 Stockdale Highway
31 MW
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

TO: David Avila (RS# 09-419)
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

DATE: November 5, 2009

RE: Sozinho Dairy Expansion Project: 11447 8 ½ Ave., Hanford, CA 93230

County: Kings

Map(s): Remnoy 7.5'

The Information Center is under contract to the State Office of Historic Preservation and is responsible for the local management of the California Historical Resources Inventories. The Center is funded by research fees and a grant from the State Office of Historic Preservation. The Information Center does not conduct fieldwork and is not affiliated with any archaeological consultants who conduct fieldwork. A referral list of individuals who meet the Secretary of the Interior's standards for their profession is available at www.chrisinfo.org.

CULTURAL RESOURCES RECORDS SEARCH

The following are the results of a search of the cultural resources files at the Southern San Joaquin Valley Information Center. These files include known and recorded archaeological and historic sites, inventory and excavation reports filed with this office, and properties listed on the National Register of Historic Places, the California Register, the Historic Property Data File (10/23/09), the California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest.

PRIOR CULTURAL RESOURCE INVENTORIES CONDUCTED WITHIN THE PROJECT AREA AND A ONE-HALF MILE RADIUS

There have been no previous cultural resource studies conducted within the project area. There has been one (1) cultural resource studies conducted within a one-half mile radius, KI-5.

(RS # 09-419)

KNOWN AND/OR RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND A ONE-HALF MILE RADIUS

There are no recorded cultural resources within the project area and it is not known if resources exist there. There are no recorded cultural resources within a one-half mile radius of the project area. Please note that a lack of data does not indicate negative data.

There are no known cultural resources within the project area or the immediate vicinity that are listed in the National Register of Historic Places, the California Register, California Inventory of Historic Resources, the California Points of Historical Interest, or the California State Historic Landmarks.

RECOMMENDATIONS

We understand that unpermitted construction has already occurred. In these areas, no further archaeological investigation is needed. The current condition of the lands where new construction is proposed was not specified. If these lands are vacant and have never been developed, including placement of underground utilities, we recommend a professional archaeologist conduct a field survey of the areas prior to ground disturbance activities. Please note that agriculture does not constitute development. A referral list is available at www.chrisinfo.org. If you have any questions, comments, or need any additional information, please don't hesitate to contact our office at (661) 654-2289.

By

Brian E. Hemphill, Ph. D.
Coordinator

Date: November 5, 2009

Fee: $225.00/hr. (Priority Service)

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

October 29, 2009

Mr. Jeff Fleming
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

Sent by FAX to: 209-848-8654
Number of pages: 3 4

Re: Request for a Sacred Lands File Search and Native American Contacts List **for a Proposed. Sozinho Dairy Expansoin Project;** located in the Hanford Area; Kings County, California

Dear Mr. Fleming:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources (c.f. CA Public Resources Code §21070), was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE) requested. The California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177)) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the 2007 CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." The NAHC SLF search **did not indicate** the presence of several Native American cultural resources within one-half - mile radius of the proposed projects (APE) planting sites.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and individuals as 'consulting parties' under both state and federal law.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. In particular, we urge consultation with Keith Turner, Jim Redmoon and Bob Pennell. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation Coordinator's office (at (916) 653-7278, for referral to the nearest Information Center of which there are 11..

Consultation with tribes and interested Native American consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f]*et seq),* and NAGPRA (25 U.S.C. 3001-3013), as appropriate. .

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a

project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contacts List (NOTE: we further recommend that other forms of 'proof of mailing or proof of contact be utilized instead of 'Return Receipt Requested' Certified or Registered Mail.) Further, we suggest a follow-up telephone call to the contacts if the replies are not received or need clarification.

Native American Contacts
Kings County
October 29, 2009

nta Rosa Rancheria
airperson
O. Box 8 Tache
moore , CA 93245 Tachi
59) 924-1278 Yokut
59) 924-3583 Fax

le River Indian Tribe
an Garfield, Chairperson
O. Box 589 Yokuts
rterville , CA 93258
airman@tulerivertribe-nsn.
59) 781-4271
59) 781-4610 FAX

ble Mountain Rancheria
b Pennell, Cultural Resources Director
O. Box 410 Yokuts
ant , CA 93626-0177
59) 325-0351
59) 217-9718 - cell
59) 325-0394 FAX

ngs River Choinumni Farm Tribe
hn Davis, Chairman
64 Oxford Avenue Foothill Yokuts
ovis , CA 93612-2211 Choinumni
9-324-9908

nta Rosa Rancheria
lo Franco, Director - Cultural Deparment
O. Box 8 Yokuts
moore , CA 93245 Tachi
59) 924-1278
59) 925-8530-FAX

s list is current only as of the date of this document.
tribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and
ety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
l federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

s list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed
dinho Dairy Expansion Project; located in the Hanford Area of Kings County, California for which a Sacred Lands

Native American Contacts
Kings County
October 30, 2009

umna Wo-Wah Tribal Goverment
ith F. Turner, Tribal Contact
O. Box 306 Dumna/Foothill
berry , CA 93602 Mono
59) 855-3128 Home
59) 696-0191 (Cell)

umna Tribal Government
n Redmoon - Cultural Resources Representative
4 W. Fountain Dumna/Foothill
esno , CA 93705 Choinumni
9-243--9926

s list is current only as of the date of this document.
tribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and
ety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

s list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed
inho Dairy Expansion Project located in the Hanford Area of Kings County, California for which a Sacred Lands

TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

July 31, 2008

Jeff Fleming
Western Dairy Design Associates, Inc.
316 W. F Street, Suite 100
Oakdale, Ca. 95361

RE: Sozinho Dairy 1 & 3 expansion project

Dear Jeff Fleming:

This is in response to your letter dated July 8, 2008, regarding the Sozinho Dairy 1 & 3 expansion project.

We appreciate receiving notice; however, this project site is beyond our area of interest.

Sincerely,

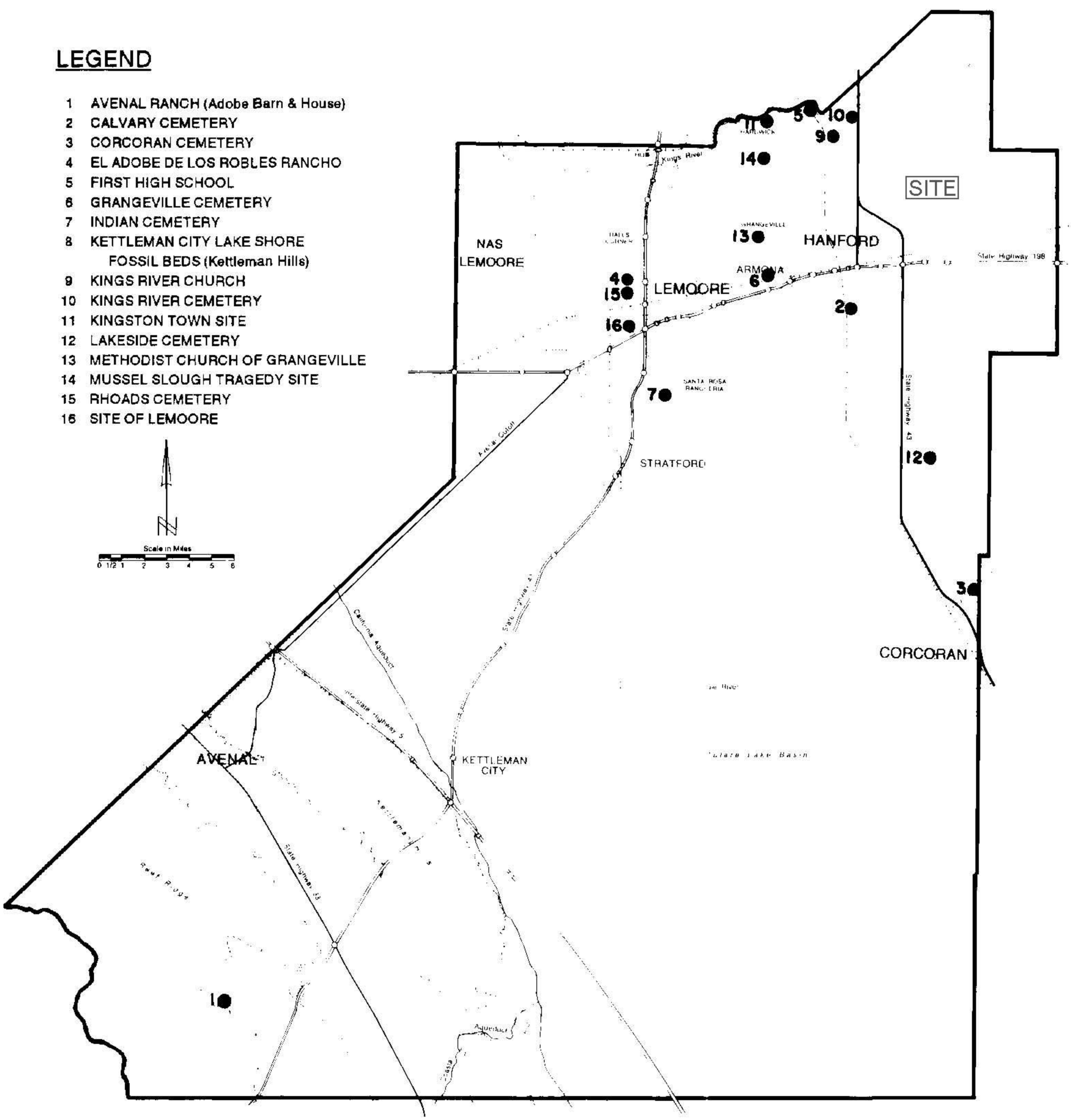
Bob Pennell
Cultural Resources Director

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

Figure 15
KINGS COUNTY HISTORICAL SITES

LEGEND

1 AVENAL RANCH (Adobe Barn & House)
2 CALVARY CEMETERY
3 CORCORAN CEMETERY
4 EL ADOBE DE LOS ROBLES RANCHO
5 FIRST HIGH SCHOOL
6 GRANGEVILLE CEMETERY
7 INDIAN CEMETERY
8 KETTLEMAN CITY LAKE SHORE FOSSIL BEDS (Kettleman Hills)
9 KINGS RIVER CHURCH
10 KINGS RIVER CEMETERY
11 KINGSTON TOWN SITE
12 LAKESIDE CEMETERY
13 METHODIST CHURCH OF GRANGEVILLE
14 MUSSEL SLOUGH TRAGEDY SITE
15 RHOADS CEMETERY
16 SITE OF LEMOORE



ATTACHMENT 8

Sozinho Dairies Expansion Traffic Analysis Study

Kings County Association of Governments

339 W. "D" Street, Suite B, Lemoore, California 93245
(559) 582-3211 extension 2654 ❖ FAX (559) 924-5632
www.countyofkings.com/kcag

Member Agencies: Cities of Avenal, Corcoran, Hanford and Lemoore, County of Kings

August 11, 2008

Jeff Fleming
Western Dairy Design Associates, Inc.
316 W. F Street, suite 100
Oakdale, CA 95361

Dear Mr. Fleming:

This memo is in regards to your request for a Traffic Analysis for the Sozinho Dairy #1 and #3 expansion projects. Based on the information below, these projects are not expected to degrade the present Level of Service (LOS) on the nearby County roads of regional significance below acceptable levels.

Sozinho Dairy #1 Project
Traffic Analysis

This project was estimated to produce approximately 170 trips per day. Based on the following Average Daily Travel (ADT) figures for Houston Ave. and Hanford Armona Rd. between SR 43 and 10th Ave., and the peak hour capacity, it appears that the additional trips produced by this project would not impact the operational capacity of these roads.

Sozinho Dairy #3 Project
Traffic Analysis

This project was estimated to produce approximately 69 trips per day. Based on the following Average Daily Travel (ADT) figures for Houston Ave. and Hanford Armona Rd. between SR 43 and 10th Ave., and the peak hour capacity, it appears that the additional trips produced by this project would not impact the operational capacity of these roads.

	ADT	Peak Hour	ADT % Trucks	LOS
Houston Ave.		1,767 - 1,833 cap.		A
West of SR 43:	2,963			
East Bound	1,429	111	7.3%	
West Bound	1,534	132	46.7%	
Hanford Armona Rd.		1,470 cap.		A
West of SR 43:	2,542	255	N/A	

If you have any questions regarding this matter, please call me at (559) 582-3211, ext. 2678, or email at Terri.King@co.kings.ca.us.

Sincerely,

KINGS COUNTY ASSOCIATION OF GOVERNMENTS

Terri King

Terri King, Executive Director

ATTACHMENT 9

SJVAPCD Rule 8081, Agricultural Sources

Dust Monitoring Form

Construction Dust Monitoring Form

SJVAPCD Fugitive PM 10 Management Plan

FPMP Site Plans

SJVAPCD Rule 4550 Conservation Management Practices Plan

Rule 4570 Mitigation Measures Plan

Cargill “Dust – Off” information

RULE 8081 AGRICULTURAL SOURCES (Adopted November 15, 2001; Amended September 16, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from agricultural sources.

2.0 Applicability

This rule applies to off-field agricultural sources. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms established in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemptions are established for this rule:

4.1 On-field agricultural sources.

4.2 Off-field agricultural sources necessary to minimize or respond to adverse effects on agricultural crops caused during freezing temperatures as declared by the National Weather Service.

4.3 Any outdoor storage, handling, or transport of bulk materials which would be damaged by wetting with water or by the application of chemical/organic dust suppressants, provided owners/operators demonstrates to the satisfaction of the APCO and USEPA, that none of the control measures specified in Table 8081-1 of this rule can be implemented to limit visible dust emissions (VDE) to 20% opacity or provide a stabilized surface as defined in Rule 8011.

4.4 Any unpaved road segment with less than 75 vehicle trips for that day. If 75 vehicle trips for that day will be exceeded, an owner/operator shall comply with the requirements of this Rule. This threshold does not apply to unpaved road segments subject to the requirements of Rule 4550 (Conservation Management Practices). Equipment with loading forks employed in the act of loading or unloading harvested commodities in the harvest location and traveling at 3 miles per hour or less are not included in the trip counts.

4.5 The felling and removal of trees from forest stands. However, the rules of Regulation VIII will apply to other timber harvest activities such as site preparation of log storage and staging areas.

4.6 Outdoor storage of any bulk material at a single site where no material is actively being added or removed and where the total material stored is less than 100 cubic yards.

4.7 Any unpaved vehicle and equipment parking and traffic area less than 1.0 acre and more than one mile from an urban area, or with less than 50 Average Annual Daily Trips (AADT) or less than 150 VDT that are utilized intermittently for a period of 30 days or less during the calendar year.

4.8 Transport of a bulk material in an outdoor area for a distance of twelve feet or less with the use of a chute or conveyor device.

5.0 Requirements

An owner/operator shall comply with Sections 5.1 through 5.3 and sufficiently implement at least one of the control measures indicated in each section of Table 8081-1 to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

5.1 Requirements for Bulk Materials

No person shall undertake any outdoor handling, storage, and transport of bulk materials unless the appropriate requirements in Table 8081-1 of this rule are sufficiently implemented to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011.

5.2 Requirements for Paved Roads and Unpaved Road Segments

5.2.1 Paved Road Segment

An owner/operator shall comply with the requirements of Rule 8061 (Paved and Unpaved Roads) regarding the construction standards for shoulder width and medians when constructing new paved roads or modifying existing paved roads.

TABLE 8081-1 CONTROL MEASURES FOR BULK MATERIALS	
A.	HANDLING OF BULK MATERIALS:
	A1 When handling bulk materials, apply water or suitable chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or;
	A2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, control measure A1 shall also be implemented.
B.	STORAGE OF BULK MATERIALS:
	B1 When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or
	B2 Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or
	B3 Construct and maintain fences or wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or suitable chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or;
	B4 Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
C.	ON-SITE TRANSPORTING OF BULK MATERIALS:
	C1 Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity; or
	C2 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road; or
	C3 Apply water to the top of the load sufficient to limit VDE to 20% opacity; or
	C4 Cover haul trucks with a tarp or other suitable cover.
D.	OFF-SITE TRANSPORTING OF BULK MATERIALS:
	D1 Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and
	D2 Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and
	D3 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable closure.
E.	OUTDOOR TRANSPORT OF BULK MATERIALS WITH A CHUTE OR CONVEYOR:
	E1 Fully enclose the chute or conveyor; or
	E2 Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or
	E3 Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

5.2.2 Unpaved Road Segments

5.2.2.1 On each day that 75 or more vehicle daily trips (VDT), or 25 or more VDT with 3 or more axles, will occur on an unpaved road segment, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by application and/or re-application/maintenance of at least one of the following control measures, or shall implement an approved Fugitive PM10 Management Plan as specified in section 7.0.

5.2.2.1.1 Watering;
5.2.2.1.2 Uniform layer of washed gravel;
5.2.2.1.3 Chemical/organic dust suppressants;
5.2.2.1.4 Vegetative materials;
5.2.2.1.5 Paving;
5.2.2.1.6 Roadmix;
5.2.2.1.7 Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.3 Requirements for Unpaved Vehicle/Equipment Parking and Traffic Areas

The control measures specified in Sections 5.3.1 through 5.3.5 shall be implemented on unpaved surface areas dedicated to any vehicle and equipment parking and traffic activity in order to limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road as specified in Rule 8011. If vehicle activity remains exclusively within an unpaved vehicle/equipment traffic area, section 5.3 may be implemented to limit VDE to 20% opacity.

5.3.1 Where 50 or more AADT will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or reapplication/maintenance of at least one of the following control measures, or shall implement an approved Fugitive PM10 Management Plan as specified in section 7.0:

5.3.1.1 Watering
5.3.1.2 Uniform layer of washed gravel;
5.3.1.3 Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;
5.3.1.4 Roadmix;

5.3.1.5 Paving;

5.3.1.6 Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

5.3.2 For unpaved vehicle/equipment traffic areas with 150 or more VDT, or 150 or more VDT that are utilized intermittently for a period of 30 days or less during the calendar year, the owner/operator shall implement the control options specified in 5.3.1.1 through 5.3.1.6.

5.3.3 On each day that 25 or more VDT with 3 or more axles will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or re-application/maintenance of at least one of the control measures specified section 5.3.1.1 through 5.3.1.6.

5.3.4 On each day that 75 or more VDT, or 26 or more VDT with 3 or more axles originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, the owner/operator may apply/re-apply water to limit VDE to 20% opacity.

5.3.5 An owner/operator shall restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive at the end of the workday to comply with the conditions for a stabilized unpaved road as defined in Rule 8011.

5.4 Requirements for Carryout/Trackout

The District hereby incorporates by reference California Vehicle Code section 23112-23113. This section requires material, including dirt deposited on any public highway or street to be cleaned up as specified in California Vehicle Code 23112-23113.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

7.0 Fugitive PM10 Management Plan for Unpaved Roads and Unpaved Vehicle/Equipment Traffic Areas

As a compliance alternative for sections 5.2.2, 5.3.1, and 5.3.2 of this rule, an operator may implement a Fugitive PM10 Management Plan (FPMP) that is designed to achieve 50% control efficiency and has been approved by the Fresno Regional office of the United States Department of Agriculture Natural Resource Conservation Service based on guidance and criteria established by the APCO. The FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of annual average daily vehicle trips or vehicle trips per day as specified in sections 5.2.2, 5.3.1, and 5.3.2 of this rule. The owner/operator remains subject to all requirements of the applicable rules of Regulation VIII that are not addressed by the FPMP. It should be noted that the FPMP is not a compliance option for any requirement for a stabilized surface as defined in Rule 8011.

7.1 An owner/operator shall provide the proposed FPMP to the local office of the USDA Resource Conservation District (RCD) via fax, mail, or in person. The RCD shall submit the proposed FPMP to the Fresno Regional Office of the NRCS, who in turn shall evaluate and approve, disapprove, or conditionally approve each proposed FPMP based on guidance and criteria established by the APCO. An FPMP shall not be considered approved until the operator has received written approval from the NRCS. The NRCS and local RCDs shall make all approved FPMPs available to the APCO and the public.

7.2 An owner/operator may submit one FPMP covering multiple unpaved roads and unpaved vehicle/equipment traffic areas.

7.3 An owner/operator shall retain a copy of an approved FPMP at the operators place of business and make it available for inspection by the APCO or his designee during normal business hours. The approved FPMP shall remain valid until the APCO notifies the owner/operator or the NRCS that it needs to be revised, or until the owner/operator notifies the NRCS that the owner/operator has permanently discontinued implementing the FPMP. The NRCS shall notify the APCO as soon as possible in the event an operator notifies the NRCS the owner/operator has permanently discontinued implementing the FPMP.

7.4 Failure to comply with the provisions of an approved FPMP is deemed to be a violation of this rule.

7.5 A FPMP shall contain all of the following information:

7.5.1 Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submittal, and implementation of the FPMP, and of person(s) responsible for the unpaved road or traffic area.

7.5.2 A plot plan or map which shows the location of each unpaved road or traffic area to be covered by the FPMP, and the total length (miles) of unpaved roads, and the total area (acres) of the unpaved traffic areas.

7.5.3 The months (and weeks, if known) of the year that vehicle traffic is expected to exceed 75 vehicle trips per day, and the types of vehicles (e.g., passenger vehicles, trucks, mobile equipment) expected on each road or traffic area. As stated above, the FPMP shall be implemented on all days that traffic exceeds, or is expected to exceed, the number of annual average daily vehicle trips or vehicle trips per day as specified in sections 5.2.2, 5.3.1, and 5.3.2 of this rule.

7.5.4 Dust suppressants, gravel, and/or vegetative materials to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

7.5.5 A description of the condition of the treated surfaces to be achieved as a result of the use of the suppressant or other dust control material.

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DUST CONTROL MONITORING

Frequency		Monthly basis during the dry season (April throught October)			
		Once during the remainder of the year			
		During periods of high winds			
Conducted by:		Facility operator			
Inspection areas:		Cattle movement at unpaved corrals			
		Unpaved and gravel paved areas			
		Site boundaries			
Month	Date	Are dust control measures effective in reducing visible dust emissions (VDE) to less than 20% opacity?	Presence/absence of breeding of mosquitos and other vectors due to the implementation of dust control measures.	Additional actions, if any, required to limit VDE to 20% opacity	Initials

Monthly inspections shall comply with Kings County Dairy Element Policy 5.1g, Futitive Dust Emissions Control Plan.

CONSTRUCTION ACTIVITY DUST GENERATION MONITORING

(To be completed daily by earth moving contractor or his designee)

Date	Do visible dust emissions exceed 20% opacity?	Actions taken to limit VDE to 20% capacity (1)	Approximate acres of disturbed area	Loads of water applied per day if water truck in employed	Gallons per water truck load	Signature

(1) Fugitive dust emission control measures

- Phase work to reduce the amount of disturbed surface at any one time
- Apply applications of water with water truck
- Suspend operations during high winds

San Joaquin Valley Unified Air Pollution Control District
Fugitive PM10 Management Plan
General Information

A Fugitive PM10 Management Plan (plan) is a compliance alternative to the 20% visible dust emission (VDE) limitation for unpaved roads and unpaved traffic areas. A plan does not apply to paved roads or paved traffic areas. Implementing either the VDE standard or a plan is necessary only on those days when traffic exceeds or is expected to exceed 75 vehicle trips. A plan may cover multiple unpaved roads and traffic areas within a facility.

Name of Facility: Sozinho Dairy
Facility Location: 11447 8 1/2 Avenue
City / State / Zip: Hanford, CA 93230
Mailing Address: 11447 8 1/2 Avenue
City / State / Zip: Hanford, CA 93230

Please list the following information for the persons responsible for:

	Plan Preparation	Plan Implementation ☐ Same as Plan Preparation
Name:	Jeff Fleming	Mr. Danny Sozinho
Title:	Associate, Western Dairy Design	Owner
Address:	316 West F Street	11447 8 1/2 Avenue
City / St / Zip	Oakdale, CA 95361	Hanford, CA 93230
Phone	(209) 848-8674	(559) 381-5485
FAX	(209) 848-8654	(559) 896-9715
Other (cell)	(209) 840-0363	(559) 381-5485

Type of Entity (check one) Please include the name, title, and phone number of persons in control. Attach additional sheets if needed.

☐ Individual ☑ Co-partnership ☐ Corporation ☐ Other entity: _____

Name: Mr. Danny Sozinho Title: Owner, Manager Phone: (559) 381-5485

FOR SJVAPCD USE ONLY

[ ] This Fugitive PM10 Management Plan has satisfied District Rule 8011 requirements and is approved.

Printed Name: _____ Title: _____

Approval Signature: _____ Date: _____

FOR RESOUCE CONSERVATION DISTRICT (RCD) USE ONLY

[ ] This Fugitive PM10 Management Plan has been verified as meeting District Rule 8081 requirements.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

Resource Conservation District: _____

Phone: ( )

General Information – Page 2

Maps or Plot Plans

It is necessary to attach a map or plot plan. The locations of each unpaved road or traffic area covered by this plan shall be clearly identified and each location must be designated numerically or by name for referencing purposes.

For Unpaved Roads:

Total Number of Treated Road Segments: 3 Total Treated Road Length: 1.3 miles

For Unpaved Traffic Areas:

Total Number of Treated Traffic Areas: 4 Total Treated Traffic Area: 2.0 acres

Number of Locations

Separate "Treatment Options Forms" used for describing the treatment options shall be attached for each location that may have unique traffic patterns or different PM10 control methods. Unique traffic patterns may include the numbers and types of vehicles traveling on the treated unpaved surface, or different seasons or times of the year. If all locations are treated the same, submit only one form. If you desire detailed information, a District document titled "Criteria for Developing and Evaluating Fugitive PM10 Management Plans" is available from the District.

Number of "Treatment Options Forms" attached: 1

Conditions:

1. The owner or operator shall retain a copy of a District-approved plan (or a RCD-verified plan for agricultural sources) at the operator's place of business and make it available for inspection upon request.
2. The plan shall remain valid until the District notifies the owner or operator (or the RCD for agricultural sources) that the plan needs to be revised, or until the owner or operator has notified the District (or the RCD for agricultural sources) that the plan is no longer being implemented.
3. Failure to comply with the provisions of a plan is deemed to be a violation of Rule 8011 (Rule 8081 for agricultural sources).

	Aug. 6, 2008
Preparer's Signature	Date
Owner or Operator's Signature	Date

Please submit the completed plan to the District office nearest you. For agricultural sources, please submit the completed plan to your local Resource Conservation District, or the Regional San Joaquin Valley Resource Conservation District (RSJV RCD).

SJVAPCD
Northern Region Office
4230 Kiernan Ave, Suite 130
Modesto, CA 95356
(209) 557-6400

SJVAPCD
Central Region Office
1990 E Gettysburg
Fresno, CA 93726
(559) 230-5950

SJVAPCD
Southern Region Office
2700 "M" St, Suite 274
Bakersfield, CA 93301
(661) 326-6900

RSJV RCD
4974 E Clinton Way, 114
Fresno, CA 93727
(559) 252-2191

Fugitive PM10 Management Plan
Treatment Options Form

Facility Name (as described on the "General Information Form"): Sozinho Dairy

1. Specific Locations

List the locations with similar traffic patterns where similar PM10 control treatments will be maintained. Please identify the unpaved roads or unpaved traffic areas by providing a reference number from a map or plot plan, or by indicating the names of the subject roads or traffic areas. Separate forms should be used if PM10 control treatments differ or if traffic occurs at different times of the year.

Road Names or Reference Numbers: Road 1, Road 2, Road 3, Road 4, Road 5

Total Miles: 1.3

Traffic Area Names or Reference Numbers: Commodity Area, 1.22 acre, Milk Barn / Parking, 1.28 acre

Total Acres: 2.5

2. Vehicle Activity

Check the months of the year when vehicle traffic is expected to exceed 75 vehicle trips per day, and vehicle types (passenger cars, trucks, etc.) Implements of husbandry are exempt for agricultural sources. If known, identify the weeks by reporting the beginning and ending dates.

Month	Dates	Month	Dates	Month	Dates
☐ January		☐ May		☑ September	
☐ February		☐ June		☐ October	
☐ March		☑ July		☐ November	
☐ April		☑ August		☐ December	

Vehicle Types: Tractor, Pickup Trucks, Commodity Trucks, Milk Tankers

3. District-accepted PM10 Control Methods

Please indicate the PM10 control method that will be employed by placing a check next to the control options listed below. It may be necessary to attach product specifications, manufacturer's usage instructions, and environmental impacts and approval certifications related to the safe use for ground applications. The following treatments have been demonstrated to achieve 50% PM10 control.

☑ **Water Application**

☐ **Hygroscopic Suppressants (Road Salts)**

☐ **Adhesives**

☐ **Petroleum Emulsions**

☐ **Polymer Emulsions**

☐ **Bituminous Materials (Road Oil)**

Secondary PM10 Control Methods: The effectiveness of a control method can be enhanced by limiting vehicle speed to 15 miles per hour or less and/or applying gravel or recycled aggregate material to the unpaved surface area. Though implementing a secondary control method by itself is not approved, the District encourages its use in addition to the accepted PM10 control methods listed above. Please describe the secondary method that will be used, if one is proposed:

15 MPH speed limit

On the following page (Treatment Options Form - Page 2) please complete Section I if water application is selected. For all other applications, please complete Section II.

Treatment Options Form - Page 2

Facility Name (from previous page): Sozinho Dairy

Specific Locations (from the previous page): Roads 1-5, Commodity Area, Milk Barn / Parking, Construction Area

Section I - Water Application: Please complete if water application was chosen.

1. **Application Frequency:** The minimum number of water applications per day is based on traffic volume. Please check the appropriate box or indicate the number or vehicle trips and water applications per day if different.

Number of applications per day

- [x] 150 vehicle trips per day or less, one application per day.
- [ ] 151 to 225 vehicle trips per day, two applications per day
- [ ] 226 to 300 vehicle trips per day, three applications per day
- [ ] _____ vehicle trips per day, _____ applications per day.

2. **Approximate time** of each application: before known traffic events, wind forecasts
Note: It is recommended that applications take place for maximum benefit, shortly before heavy traffic volumes, but at such times and manner to allow for water to soak in and not result in trackout of mud onto paved roads.

3. **Application Rate**. Please specify the application rate that will be used for PM10 control:

- [x] _____ **Gallons per Acre** of area
- [x] _____ **Gallons per Mile** of unpaved road

Minimum Water Application Rates
650 gallons/acre
600 gallons/mile for an 8 foot wide road
750 gallons/mile for a 10 foot wide road
900 gallons/mile for a 12 foot wide road

4. **Equipment:** Please list the number and type of equipment (water truck, water wagon, trailer, etc.) that will be used for applying water, and the capacity of each in gallons:
One water truck, 3,600 gallon capacity

5. **Condition of Surface after Treatment:** Please describe the condition and observable changes to be achieved as a result of the water application and re-application. This may include expected color change, visual examination of surface crusting or compaction, or other methods.
Color change, compaction, surface crusting.

Section II – Hygroscopic/Chemical/Organic Materials: Please complete the following if the PM10 control methods chosen is not water application.

Product Name: _____

Contractor's Name: _____ Phone Number: ( )

Application Rate: _____ Gallons of *undiluted* material per mile or acre treated.

Application Frequency: _____ Applications per year.

Minimum Application Frequencies:

Hygroscopic Suppressants (Road Salts) **Adhesives** **Petroleum Emulsions**	**Seasonal Sources** (operating four months per year or less): One application per year within 30 days of the start of the season. **All Other Sources**: Two applications per year. One application in middle spring and the other in late summer, unless otherwise specified by the manufacturer.
Polymer Emulsions	One application per year, per manufacturer's specifications. For seasonal sources, apply within 30 days of the start of the season.
Bituminous Materials	One initial application. Reapplication within next two years.

Condition of Surface after Treatment: Please describe the condition and observable changes to be achieved as a result of the application and maintenance of the PM10 control measure taken. This may include expected color change; visual examination of oil coverage, surface crusting or compaction; or other methods.

Regulation VIII Record Keeping Form

Month: July

FORM A – Area Water Application

Project Location: 11447 8 1/2 Ave. City: Hanford, CA Size: 2.01 ~~(Miles/~~ Acres)

Owner: Sozinho Dairy Address 11447 8 1/2 Ave. City: Hanford Zip 93230

Contact Person: Danny Sozinho Title: Owner-Mgr. Phone: (559) 381- 5485

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: Commodity

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: Milk Barn / Parking

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month: August

FORM A – Area Water Application

Project Location: 11447 8 1/2 Ave. City: Hanford, CA Size: 2.01 ~~(Miles/~~ Acres)

Owner: Sozinho Dairy Address 11447 8 1/2 Ave. City: Hanford Zip 93230

Contact Person: Danny Sozinho Title: Owner-Mgr. Phone: (559) 381- 5485

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: Commodity

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: Milk Barn / Parking

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month: Sept.

FORM A – Area Water Application

Project Location: 11447 8 1/2 Ave. City: Hanford, CA Size: 2.01 ~~(Miles/~~ Acres)

Owner: Sozinho Dairy Address 11447 8 1/2 Ave. City: Hanford Zip 93230

Contact Person: Danny Sozinho Title: Owner-Mgr. Phone: (559) 381- 5485

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: Commodity

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: Milk Barn / Parking

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

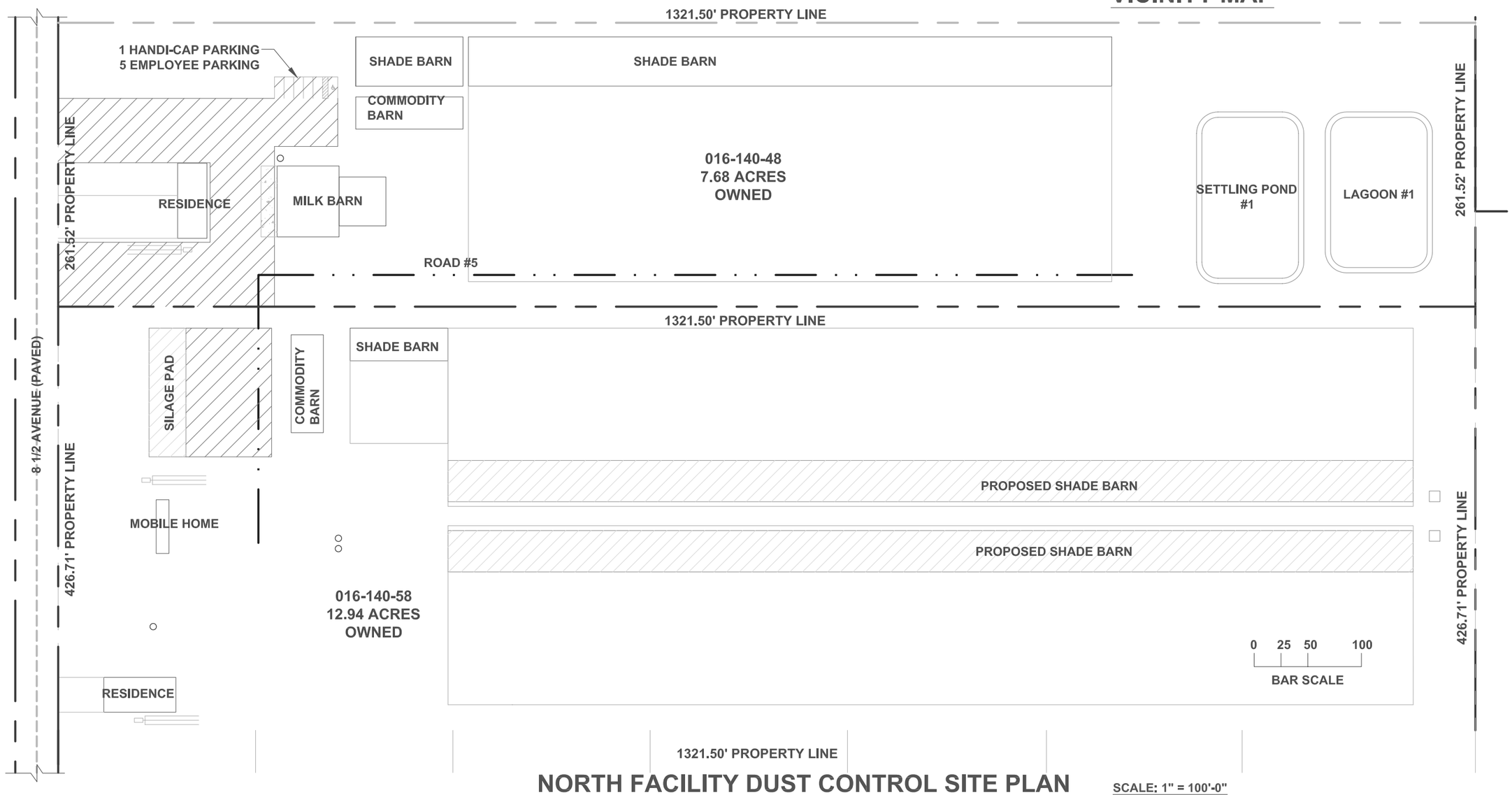
Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

LEGEND

- PROPERTY LINE
- STREET LINE
- UNPAVED ROAD SEGMENT
- UNPAVED TRAFFIC AREA

PRODUCTION SITE

VICINITY MAP



NORTH FACILITY DUST CONTROL SITE PLAN

SCALE: 1" = 100'-0"

NORTH FACILITY DUST CONTROL SITE PLAN

SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
316 West F Street, Ste 100
Oakdale, CA 95361
(209) 848-8674
www.dairydesigners.com

Dwg. Date:	08-21-2009
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-17

Sheet # 5 of 8 Sheets — A Rev Level

LEGEND

- PROPERTY LINE
- STREET LINE
- UNPAVED ROAD SEGMENT
- UNPAVED TRAFFIC AREA

VICINITY MAP

PROPERTY LINE
016-140-75
10.00 ACRES
OWNED
RESIDENCE
HAY BARN
COMMODITY BARN
GARAGE
PROPERTY LINE
CORRAL AREA
RESIDENCE
LAGOON #2
016-140-74
10.00 ACRES
OWNED
OFFICE
RESIDENCE
GARAGE
HAY BARN
CORRAL AREA
SHADE BARN
FREESTALL BARN
RESIDENCE
MATERNITY BARN
SHADE BARN
PROPERTY LINE
8 1/2 AVENUE (PAVED)
RESIDENCE
CORRAL AREA
CORRAL AREA
PROPERTY LINE
RESIDENCE
SHADE BARN
FLUSHED MANURE
EFFLUENT CATCH BASIN
SHADE
BARN
MILK
BARN
CORRAL AREA
016-140-11
10.00 ACRES
OWNED
LAGOON #3- FLUSH POND
1 HANDI-CAP PARKING
5 EMPLOYEE PARKING
SHADE BARN
SHADE BARN
SHOP
CALF PENS
BORROW PIT
PROPOSED SHADE BARN
SHOP
PORTABLE CALF PENS
PROPOSED SHADE BARN
016-140-59
9.99 ACRES
OWNED
RESIDENCE
PROPOSED
HAY BARN
PROPOSED
HAY BARN
PROPOSED
HAY BARN
PROPOSED
HAY BARN
PROPERTY LINE
PROPERTY LINE

SOUTH FACILITY DUST CONTROL SITE PLAN

SCALE: 1" = 150'-0"

0 25 50 100
BAR SCALE

SOUTH FACILITY DUST CONTROL SITE PLAN

SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
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Dwg. Date:	08-21-2009
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-17

Sheet # 4 of 8 Sheets | A Rev Level

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

JAN 30 2008

To: Danny Sozinho
Sozinho Dairy #1 & #3
8489 E Elkhorn Ave
Selma, CA 93662

Re: **Revised Conservation Management Practice Plan (CMPP)**
Project Number: C-1080170

Dear Mr. Sozinho:

Enclosed you will find the revised CMP Plan for your agricultural crop production located at 11447 8-1/2 Avenue and 11235 8-1/2 Avenue, Hanford. The revisions were made per the Conservation Management Practices Plan Modification application you submitted to the District on January 17, 2008.

If you have any questions, please contact Ms. Karen Hatfield at (559) 230-5896.

Attachments

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
Tel: (661) 326-6900 FAX: (661) 326-6985

www.valleyair.org

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

CONSERVATION MANAGEMENT PRACTICES PLAN

CMP PLAN ID:	C-7333-CMPP-1
FARM NAME:	SOZINHO DAIRY #1 & #3
MAILING ADDRESS:	11447 8-1/2 AVENUE HANFORD, CA 93230
FARM LOCATION:	11447 8-1/2 AVENUE HANFORD, CA 93230
DESCRIPTION:	421 Acres including Dairy; Unpaved Roads and Unpaved Vehicle/Equipment Areas for Animal Feeding Operations; Corn, Grain, and Silage; Dry Beans, Cereal Grains, Safflower, Wheat, and Barley; Nut Crops; Unpaved Roads and Unpaved Vehicle/Equipment Areas for Crops
ISSUE DATE:	January 29, 2008

In order to limit fugitive dust emissions from agricultural operation sites and to comply with District Rule 4550, the attached conservation management practices shall be utilized.

This CMP Plan is valid only at the location specified above, subject to the payment of required fees, and becomes void upon any transfer of ownership.

An application must be submitted to the District within 60 days following any changes that require this Plan to be revised.

Seyed Sadredin
Executive Director / APCO

David Warner
Director of Permit Services

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

CONSERVATION MANAGEMENT PRACTICES for Dairy

Corral/Manure Handling

1. Freestall housing shall be used at this dairy operation, thereby reducing PM10 emissions.
2. Scraping/harrowing of manure in the morning hours shall be practiced at this dairy operation, thereby reducing PM10 emissions.

Recordkeeping

3. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

CONSERVATION MANAGEMENT PRACTICES CONTINUE ON NEXT PAGE

CONSERVATION MANAGEMENT PRACTICES for Unpaved Roads and Unpaved Vehicle/Equipment Areas for Animal Feeding Operations

Unpaved Roads

1. 0.3 miles of private roads within this farm shall have less than 10 vehicle trips per day, thereby reducing PM10 emissions from vehicle travel on private roads.
2. Sand shall be applied to 0.5 miles of private roads within this farm, thereby reducing PM10 emissions from vehicle travel on private roads.
3. Water shall be applied to 1.3 miles of private roads within this farm, thereby reducing PM10 emissions from vehicle travel on private roads.
4. Washed gravel shall be applied to 0.5 miles of private roads within this farm, thereby reducing PM10 emissions from vehicle travel on private roads.

Unpaved Vehicle/Equipment Areas

5. Sand shall be applied to 0.5 acres of private vehicle/equipment traffic areas within this farm, thereby reducing PM10 emissions from vehicle travel on private vehicle/equipment traffic areas.
6. Water shall be applied to 2 acres of private vehicle/equipment traffic areas within this farm, thereby reducing PM10 emissions from vehicle travel on private vehicle/equipment traffic areas.
7. Washed gravel shall be applied to 1 acres of private vehicle/equipment traffic areas within this farm, thereby reducing PM10 emissions from vehicle travel on private vehicle/equipment traffic areas.
8. 0.5 acres of private vehicle/equipment traffic areas within this farm shall have less than 10 vehicle trips/day, thereby reducing PM10 emissions from vehicle travel on private vehicle/equipment traffic areas.

Recordkeeping

9. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

CONSERVATION MANAGEMENT PRACTICES CONTINUE ON NEXT PAGE

CONSERVATION MANAGEMENT PRACTICES for Corn, Grain, and Silage

Land Preparation/Cultivation

1. Chemigation and/or fertigation shall be applied to 328 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Chemigation and/or fertigation is the application of chemicals through an irrigation system or by aerial application. The owner/operator shall apply chemicals through the irrigation system.
2. Combined operations shall be applied to 328 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Combined operations is to perform two or more operations during one pass over the field.

Harvest

3. 328 acres of this crop shall be harvested by using green chop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Green chop is the harvesting of a forage crop without allowing it to dry in the field.

Recordkeeping

4. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

NOTE

5. The acreage required in the conditions above assume the full 328 acres of the crop will be planted. If less than 328 acres are planted, the acreage requirement for each conservation management practice may be less. However, at least three of the conservation management practices listed in the categories above must be used for all areas planted in this crop.

CONSERVATION MANAGEMENT PRACTICES CONTINUE ON NEXT PAGE

CONSERVATION MANAGEMENT PRACTICES for Dry Beans, Cereal Grains, Safflower, Wheat, and Barley

Land Preparation/Cultivation

1. Combined operations shall be applied to 328 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Combined operations is to perform two or more operations during one pass over the field.

Harvest

2. Baling/large balers shall be used on 328 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Baling/large balers is the use of non-conventional balers to harvest a forage crop.

Other

3. 328 acres of this crop shall not be burned, thereby reducing PM10 emissions. No burning is the elimination of all burning of crop residue, prunings, and trees.

Recordkeeping

4. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

NOTE

5. The acreage required in the conditions above assume the full 328 acres of the crop will be planted. If less than 328 acres are planted, the acreage requirement for each conservation management practice may be less. However, at least three of the conservation management practices listed in the categories above must be used for all areas planted in this crop.

CONSERVATION MANAGEMENT PRACTICES CONTINUE ON NEXT PAGE

CONSERVATION MANAGEMENT PRACTICES for Nut Crops

Land Preparation/Cultivation

1. Combined operations shall be applied to 50 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Combined operations is to perform two or more operations during one pass over the field.
2. Night farming shall be performed on 50 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Night farming is to perform land preparation/cultivation passes at night when moisture levels are higher.

Other

3. Cover crops shall be grown between the rows on 50 acres of this crop, thereby reducing the total number of passes/soil disturbances and PM10 emissions. Cover crops are the use of seeding and/or allowing natural vegetation to cover the soil surface. The owner/operator shall plant seeds to grow a cover crop that covers 100 percent of this crop acreage.

Recordkeeping

4. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

CONSERVATION MANAGEMENT PRACTICES CONTINUE ON NEXT PAGE

CONSERVATION MANAGEMENT PRACTICES for Unpaved Roads and Unpaved Vehicle/Equipment Areas for Crops

Unpaved Roads

1. Sand shall be applied to 2 miles of private roads within this farm, thereby reducing PM10 emissions from vehicle travel on private roads.
2. Water shall be applied to 6.5 miles of private roads within this farm, thereby reducing PM10 emissions from vehicle travel on private roads.
3. 4.5 miles of private roads within this farm shall have less than 10 vehicle trips per day, thereby reducing PM10 emissions from vehicle travel on private roads.

Recordkeeping

4. Owner/operator shall maintain a copy of each Conservation Management Practice (CMP) application and CMP plan with supporting information necessary to confirm the implementation of the CMPs. This supporting information shall include, but not limited to, a map showing the location of (1) the agricultural operation site, (2) each crop, (3) unpaved roads and unpaved equipment/traffic areas, and (4) where each CMP will be implemented. Such records shall be retained for a minimum period of five years and made available for District inspection upon request.

San Joaquin Valley Air Pollution Control District

www.valleyair.org

COPY

Rule 4570 Permit Application Form

Dairy Confined Animal Feeding (CAF) Mitigation Measures

Facility Name: Sozinho Dairy #1 & #3 (adjoining facilities)

Facility Location: **#1: 11447 8 ½ Ave; #3: 11235 8 ½ Ave**

Mailing Address: **8489 E. Elkhorn Ave, Selma, CA 93662**

Phone No.: (559) 582 - 7553 Cell Phone No.: (559) 381 - 5485

Owner/Operator: Danny Sozinho Title: Operator

Signature: _____ Date: _____

Instructions

1. Please completely fill out the tables included in the following pages of this form indicating the mitigation measures that you will be utilizing to comply with Rule 4570.
2. This application must be submitted with application filing fees totaling $300 ($60 per permit unit x 5 permit units). If submitting this form at a workshop, please do not submit the fees at the workshop. The District will send you an invoice at a later date.
3. Have you received a CMP Plan as required by District Rule 4550 or permit from the District for your existing dairy?
   - If yes, what is your facility number? _____
   - If you have not received a CMP Plan or permit from the District, you must fill out the following application forms and attach them to this form. The application forms may be found on the District's website at http://www.valleyair.org/General_Info/AGLoader.htm:
     - **Initial Permit Application Form for Farms (Form "PA-0")**
     - **Dairy Farm Permit Application Form (Form "Dairy")**
     - **CMP Plan Application (Form "CMP 0")**
     - **CMP Dairy Supplemental Application (Form "CMP 13")**
     - **Other Applicable CMP Supplemental Application Forms**

FOR APCD USE ONLY:

DATE STAMP:	FILING FEE RECEIVED: $ _____ CHECK #: _____ DATE PAID: _____ PROJECT #: _____ FACILITY ID: _____

Feed Mitigation Measures	Dairy owners/operators must select at least four of the following feed mitigation measures: ☐ Feed according to National Research Council (NRC) guidelines. ☐ Feed animals high moisture corn or steam-flaked corn and not feed animals dry rolled corn. ☒ At least once every 14 days remove feed from the area where animals stand to eat feed. ☒ At least once every 14 days remove spilled feed from the area where equipment travels to place feed in the feed bunk. ☒ Remove uneaten wet feed from feed bunks within twenty-four hours of a rain event. ☐ Feed or dispose of rations within 48 hours of grinding and mixing rations. ☐ Store grain in a weatherproof storage structure from October through May. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.*
Feed Mitigation Measures	**Dairy owners/operators must select at least one of the following feed mitigation measures:** ☒ Cover the horizontal surface of silage piles, except for the area where feed is being removed from the pile. ☐ Collect leachate from the silage piles and send it to a waste treatment system such as a lagoon at least once every 24 hours. ☐ Enclose silage in a bag and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%. (Please note: Source testing per Section 7.2 of Rule 4570 will be required.) ☐ Enclose silage in a weatherproof structure and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%. (Please note: Source testing per Section 7.2 of Rule 4570 will be required.) ☐ Eliminate silage from animal diet. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.*
Milk Parlor Mitigation Measures	**Dairy owners/operators must select at least one of the following milk parlor mitigation measures:** ☒ Flush or hose milk parlor immediately prior to, immediately after, or during each milking. ☐ Enclose and vent the milk parlor to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80% when animals are in the parlor. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures form.*
Freestall Barn Mitigation Measures	**Dairy owners/operators with freestall barns must select at least two of the following freestall barn mitigation measures:** ☐ Vacuum or scrape freestall lanes immediately prior to, immediately after, or during each milking. ☒ Inspect water pipes and troughs and repair leaks at least once every 14 days. ☐ Use non-animal waste-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond shells, sand, or waterbeds). ☐ Remove animal waste that is not dry from individual cow freestall beds at least once every 14 days. ☐ Groom (rake, harrow, scrape, or grade) bedding in freestalls at least once every 14 days. ☐ Use a dry animal waste handling system, such as scraping, instead of a liquid animal waste handling system, such as a flush system. ☐ Have no animals in exercise pens, corrals, or drylots at any time. ☒ Flush freestalls more frequently than the milking schedule. ☐ Vacuum animal waste instead of flushing or scraping and apply animal waste directly to land either through injection or incorporation within 72 hours of removal from animal housing or vacuum truck. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.* ☐ **Not Applicable – No freestall barns**

Corral Mitigation Measures

Dairy owners/operators with corrals must select at least six of the following mitigation measures for each corral where animals have been housed in the last 30 days:

Please note, only one of the following three measures will count towards the six required for this category.

- ☐ Clean animal waste from corrals at least 4 times per year with at least 60 days between cleaning.
- ☐ Clean corrals at least once between April and July and at least once between October and December.
- ☐ Clean concreted areas such that the depth of animal waste does not exceed 12 inches at any point or time, except for in-corral mounding.

Please note, only one of the following two measures will count towards the six required for this category.

- ☒ Maintain corrals to ensure drainage and prevent water from standing more than 48 hours after a storm.
- ☐ Maintain corrals and drylots so that there are not indentions in the surface where puddles may form and remain for more than 48 hours.

Please note, only one of the following three measures will count towards the six required for this category.

- ☐ Install no shade structures in the corrals.
- ☐ Install shade structures such that they are constructed with a semi-permeable roofing material.
- ☐ Install all shade structures uphill of any slope in the corral.

Please note, only one of the following two measures will count towards the six required for this category.

- ☐ Use lime or a similar absorbent material in the pens according to the manufacturer's recommendations to minimize moisture in the pens.
- ☐ Apply thymol to corral soil in accordance with the manufacturer's recommendation.

Please note, any of the following nine measures may be selected.

- ☒ Manage corrals such that the animal waste depth in the corral does not exceed 12 inches at any time or point, except for in-corral mounding.
- ☒ Knockdown fence line animal waste build-up prior to it exceeding a height of 12 inches at any time or point.
- ☒ Scrape or flush feed aprons in corrals at least once every seven 7 days.
- ☐ Slope the surface of the pens at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the pens at least 1.5% where the available space for each animal is more than 400 square feet per animal.
- ☒ Install floats on the troughs or use another method approved by the APCO, ARB, and EPA to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto an earthen ground.
- ☒ Inspect water pipes and troughs and repair leaks at least once every 14 days.
- ☐ Groom (harrow, rake, or scrape) pens sufficiently to maintain a dry surface.
- ☐ House animals in an enclosure vented to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%.
- ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.*
- ☐ **Not Applicable – No open corrals**

Solid Waste Mitigation Measures

Dairy owners/operators which handle solid animal waste or separated solids animal waste stored outside the animal housing must select at least two of the following solid or separated solids animal waste mitigation measures:

Please note, only one of the following two measures will count towards the two required for this category.

- ☐ Remove separated solids from the facility within 72 hours of separation.
- ☐ Store no separated solids outside of anaerobic digesters or aerobic lagoons.

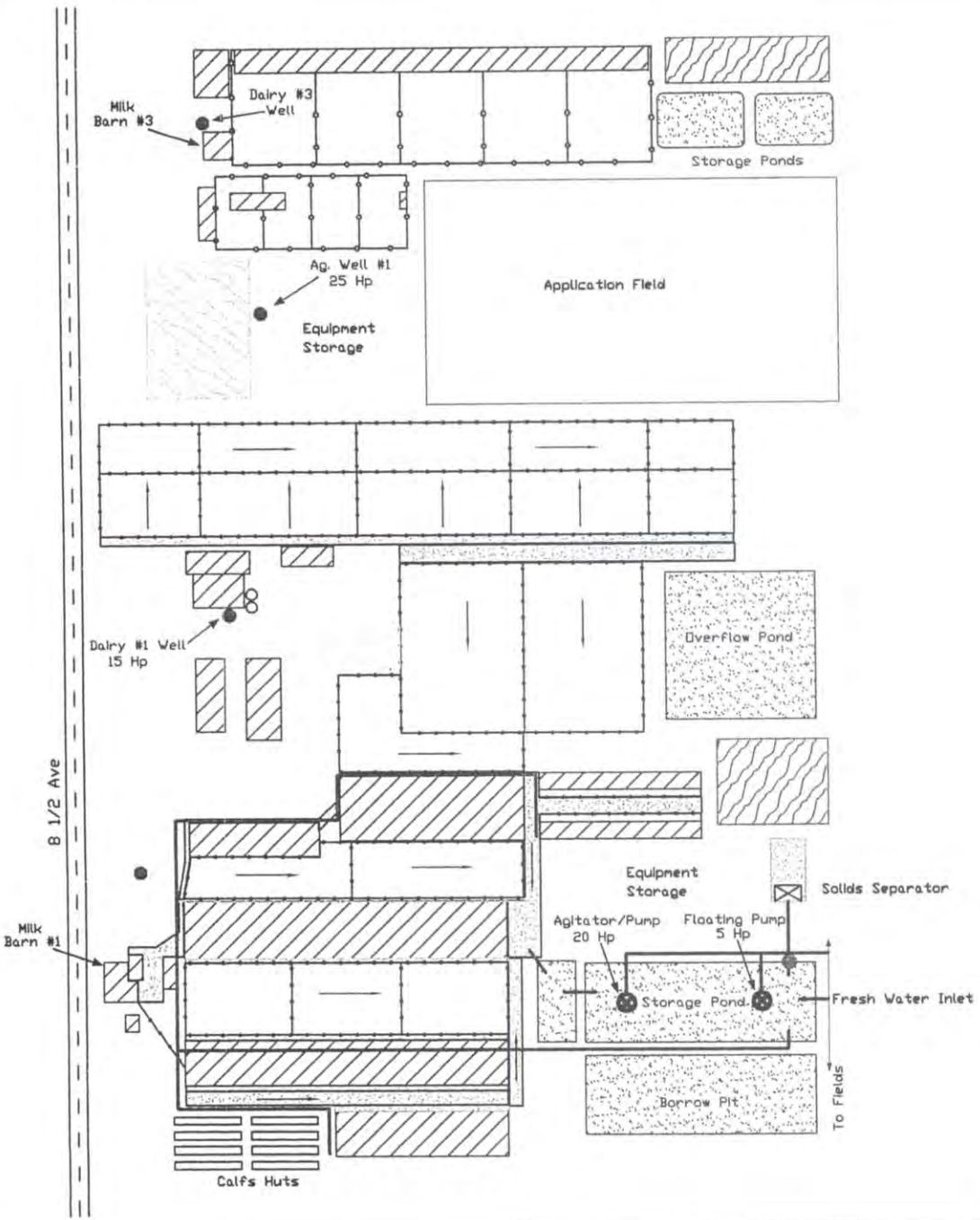
Please note, any of the following seven measures may be selected.

- ☐ Cover dry animal waste piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed 24 hours per event, when wind events remove the covering.
- ☒ Cover dry separated solids outside the pens with a weatherproof covering from October through May, except for times, not to exceed 24 hours per event, when wind events remove the covering.
- ☒ Remove animal waste from the facility within 72 hours of removal from the pens or corrals.
- ☐ Compost animal waste removed from pens with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- ☐ Store all removed animal waste in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- ☐ Send at least 51% of the animal waste removed from animal housing to a digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.*
- ☐ **Not Applicable – No solid waste handled**

Liquid Waste Mitigation Measures	Dairy owners/operators which handle liquid animal waste must select at least one of the following liquid animal waste mitigation measures: ☐ Use phototrophic lagoon. (Please note: Testing per Section 7.2 of Rule 4570 will be required.) ☐ Use an anaerobic treatment lagoon designed according to NRCS Guideline No. 359. (Please note: Testing per Section 7.2 of Rule 4570 will be required.) ☐ Use an aerobic lagoon. (Please note: Testing per Section 7.2 of Rule 4570 will be required.) ☐ Use a mechanically aerated lagoon (aerators). (Please note: Testing per Section 7.2 of Rule 4570 will be required.) ☐ Manage the facility such that there are no lagoons at the facility. (Lagoons are defined as a basin constructed, maintained, and operated to store and treat animal waste. This does not include basins primarily used to collect runoff and storm water.) ☒ Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon. ☐ Maintain lagoon pH between 6.5 and 7.5. ☐ Maintain organic loading in the lagoon such that the total solids are less than 3.5 mg (dry weight)/mL, or total volatile solids are less than 3.5 mg/mL. ☐ Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and that is approved by the APCO, ARB, and EPA. ☐ Cover the lagoon or storage pond and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.* ☐ **Not Applicable – No liquid waste handled**
Land Application Mitigation Measures	**Dairy owners/operators which land apply dry or liquid animal waste must select at least two of the following land applied dry or liquid animal waste mitigation measures:** **Please note, only one of the following two measures will count towards the two required for this category.** ☒ Allow liquid animal waste to stand in the fields no more than 24 hours after irrigation. ☐ Apply no liquid animal waste. **Please note, only one of the following two measures will count towards the two required for this category.** ☐ Apply no solid animal waste with a moisture content of more than 50%. ☐ Apply no solid animal waste. **Please note, any of the following three measures may be selected.** ☒ Land incorporate all solid animal waste within 72 hours of removal from animal housing. ☐ Only apply solid or liquid animal waste that has been treated with an anaerobic or aerobic lagoon or digester system. ☐ Implement an alternative mitigation measure(s), not listed above. *Please provide details on an attached Alternate Mitigation Measures supplemental application form.* ☐ **Not Applicable – Liquid or solid manure is not land applied**

SOZINHO DAIRY #1 & #3

KINGS COUNTY, CA



LEGEND
Fence Line
Surface Water Flow
Underground Pipeline
Lift Pump
Well
Storage Ponds
Concrete
Hard Roof Structure
Commodity Storage
Solid Manure Storage
Floating Pump/Agitator

PRODUCED FOR AIR QUALITY PURPOSES

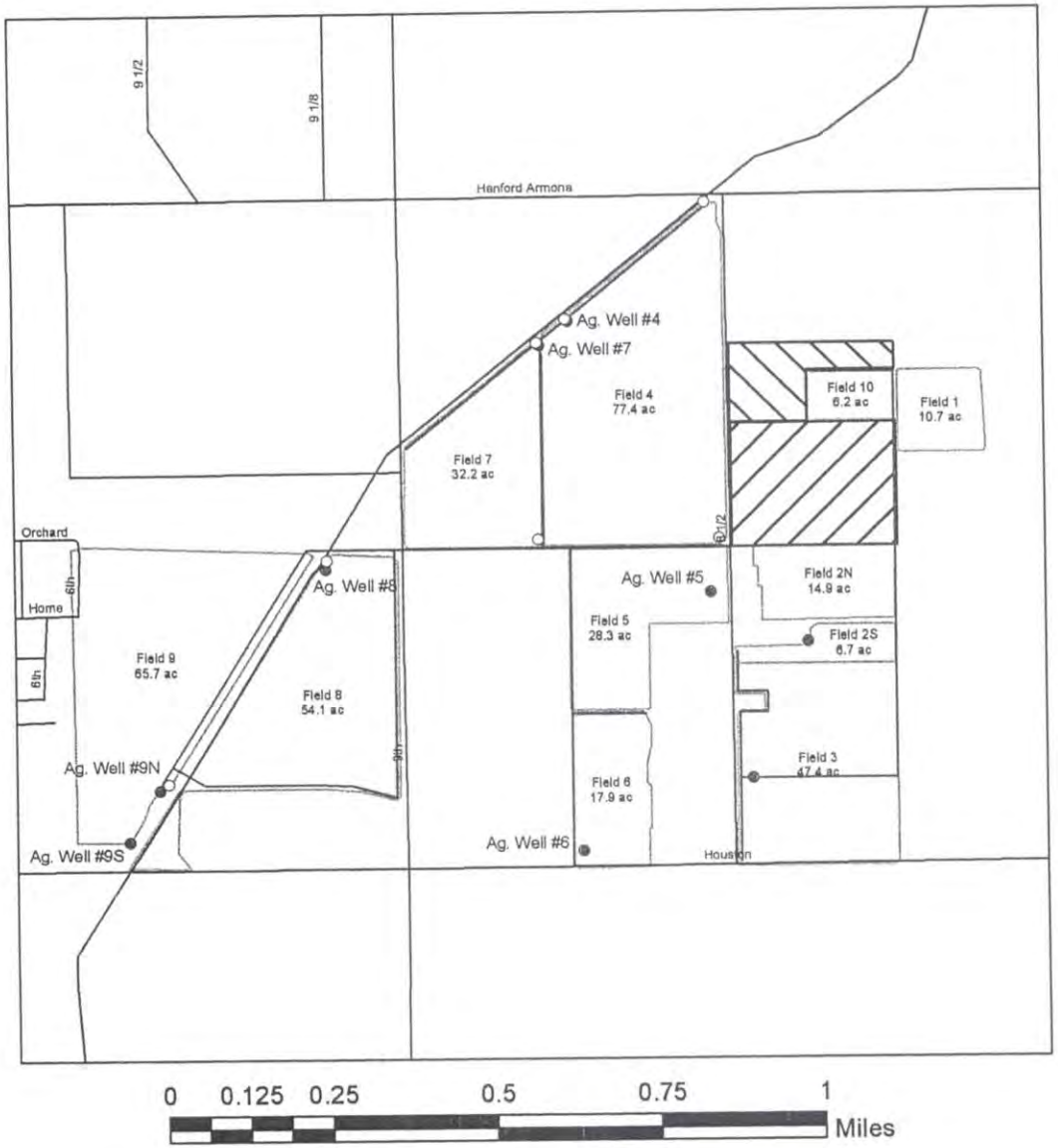
JMLord incorporated
Agricultural Scientists and Engineers
287 N. Fulton St. Fresno, CA 93701 (559) 266-6756
80690 Ave 54, #J Coachella, CA 92236 (760) 398-9434
www.jmlordinc.com

DESIGNED: B. GERWIG	REVISIONS: ---	BY: ---	SOZINHO DAIRY #1 & #3
DRAWN: M. CHEVEZ			DAIRY SITE MAP
SCALE: 1" = 300'			DATE: 10/24/2007
			FILE: AQ_Dairy 1&3_Map.dwg

Sozinho Dairy #1 & #3

Kings Co.

Application Field Map



LEGEND

- Sozinho Dairy #1
- Sozinho Dairy #3
- Sozinho Fields
- Pipeline
- Wells
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Prepared By
JMLord, Inc.
Oct 2007

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Increased safety. Vehicles traveling on an untreated gravel or dirt road pose several safety problems. The dust they create limits visibility for vehicles behind, for road workers and others traveling nearby.

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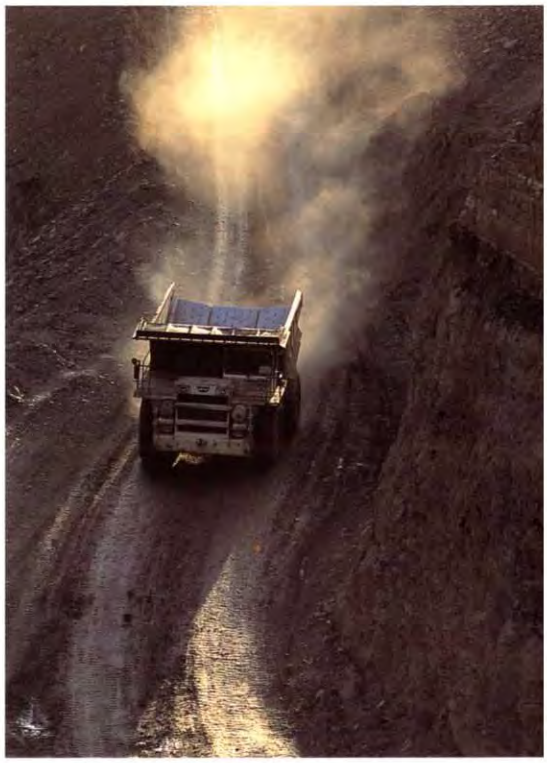

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ATTACHMENT 10

Vicinity Plan

ASAE Std. EP344.2 Lighting Standards for Dairy Farms

“Luminaire” Technical Specifications

Compatibility of Land Uses to Noise Environments

DAIRY AREA LEGEND

1- MILK PARLOR 58'W x 66'L x 17'D
2- RESIDENCE W/ GARAGE 26'W x 70'L x 15'D
3- MOBILE HOME 12'W x 50'L x 11'D
4- SHADE BARN 46'W x 100'L x 12'D
5- SHADE BARN 30'W x 91'L x 12'D
6- SHOP 26'W x 80'L x 14'D
7- COMMODITY BARN 60'W x 105'L x 16'D
8- SHADE BARN 46'W x 600'L x 12'D
9- SCRAPE MANURE STORAGE
10- SETTLING POND #1 150' x 100'
11- LAGOON #1 160' x 100'
12- PROPOSED SHADE OVER MB HOLDING PEN 35'+5'W x 50'L x 15'-6"D
13- PROPOSED CONCRETE FOR SILAGE
14- PROPOSED CALF SHADE BARN 38'W x 900'L x 12'D
15- PROPOSED CALF SHADE BARN 38'W x 900'L x 12'D
16- MILK PARLOR 24'W x 51'L x 17'D
17- RESIDENCE W/ GARAGE
18- MOBILE HOME 12'W x 50'L x 11'D
19- SHOP 26'W x 80'L x 14'D
20- OFFICE 30'W x 40'L x 13'D
21- HAY BARN 40'W x 100'L x 30'D
22- COMMODITY BARN 60'W x 105'L x 16'D
23- DEAD ANIMAL STORAGE
24- EQUIPMENT STORAGE 50'W x 90'L x 11'D
25- GARAGE 50'W x 142'L x 12'D
26- HAY BARN 70'W x 140'L x 30'D
27- MATERNITY BARN 61'W x 220'L x 22'D
28- FREESTALL BARN 98'W x 320'L x 26'D
29- FREESTALL BARN 98'W x 580'L x 26'D
30- SHADE BARN 26'W x 80'L x 12'D
31- SHOP 26'W x 80'L x 14'D
32- SCRAPE MANURE STORAGE
33- LAGOON & SETTLING POND #2
34- SCRAPE MANURE STORAGE
35- SOLID SEPARATOR
36- LAGOON #3
37- FLUSHED MANURE EFFLUENT CATCH BASIN
38- BORROW PIT
39- SHADE BARN 26'W x 80'L x 12'D
40- PROPOSED SHADE BARN 28'W x 160'L x 13'-6"D
41- PROPOSED SHADE BARN 28'W x 280'L x 13'-6"D
42- PROPOSED CALF SHADE BARN 20'-4"W x 580'L x 12'D
43- PROPOSED CALF SHADE BARN 21'W x 300'L x 12'D
44- FUTURE CALF SHADE 20' x 280' x 12'
45- FUTURE CALF SHADE 20' x 280' x 12'
46- PROPOSED CALF PENS OVER CONCRETE FLUSH LANES
47- PROPOSED CALF PENS
48- PROPOSED EQUIPMENT ROOM ADD ON 50'W x 142'L x 12'D
49- PROPOSED HAY BARNS 40'W x 100'L x 21'D

NOTE:
ALL CROPABLE FIELDS ARE TRIPLE CROPPED WITH CORN SILAGE, SUDAN SILAGE, & TRITICALE BOOT

Sozinho Dairy
Sozinho Dairy Property List:

APN #:	APN Acres:	Field #(s):	Cropable Acreage	Non-Cropable Acreage	Use:	Status:	Receives Liquids:	Formerly:
016-014-11	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
016-014-48	7.68	N/A	0.00	7.68	Dairy Site	Owned	No	**Dairy #3 Site**
016-014-58	12.94	01	0.00	12.94	Dairy Site	Owned	No	**Dairy #3 Site**
016-014-59	9.99	N/A	0.00	9.99	Dairy Site	Owned	No	Dairy #1 Site
016-014-75	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
016-014-74	10.00	N/A	0.00	10.00	Dairy Site	Owned	No	Dairy #1 Site
Dairy Site Acres:				60.61				
016-014-14	40.00	3A	36.31	3.69	Cropping	Owned	Yes	
016-014-47	5.00	001	3.49	1.51	Cropping	Owned	Yes	
016-014-61	9.98	3B	8.96	1.02	Cropping	Owned	Yes	
016-014-70	35.00	7	31.73	3.27	Cropping	Owned	Yes	
016-014-81	82.52	4	75.12	7.40	Cropping	Owned	Yes	
016-014-84	11.92	1	10.30	1.62	Cropping	Owned	Yes	
016-014-85	133.53	8A,8B,9	113.45	20.08	Cropping	Owned	Yes	
016-014-93	18.95	2	13.90	5.05	Cropping	Owned	Yes	
016-014-94	30.08	5	27.73	2.35	Cropping	Owned	Yes	
Total acres-	427.59		320.99	106.60	check figure:		427.59	

VICINITY MAP

NEIGHBORING PARCELS NOT OWNED

LEGEND
- PROPERTY LINE
- STREET LINE
- WATER LINE
- (R) NEIGHBORING RESIDENCE

HANFORD ARMONA
9TH AVENUE
8 1/2 AVENUE
8TH AVENUE
HANFORD-ARMONA PUMPS
1/4 MILE RADIUS FROM PROPOSED DAIRY FACILITY TO ALL OTHER EXISTING DAIRY FACILITIES, & ALL EXISTING RURAL RESIDENCES THAT ARE NOT ASSOCIATED WITH APPLICANT.
NEIGHBORING PARCEL NOT OWNED
TRUCKING YARD NEIGHBORING PARCELS NOT OWNED
NEIGHBORING PARCELS NOT OWNED
NEIGHBORING PARCEL NOT OWNED
CANAL
IRRIGATION FLOW
CANAL PUMP 926E1
CUMMINS DIESEL W/ 10,000 GAL DIESEL TANK WELL W/ 40 HP PUMP #7
CANAL PUMP 926E
CUMMINS DIESEL W/ 10,000 GAL DIESEL TANK WELL W/ 40 HP PUMP #6
DOMESTIC WELL #1
DOMESTIC WELL #2
DOMESTIC WELL #3
016-140-47 5.00 ACRES OWNED
IRR. FLOW
FIELD #001
CROPABLE ACREAGE 3.49 ACRES
016-140-48 7.68 ACRES OWNED
SETTLING POND#1
LAGOON #1
016-140-58 12.94 ACRES OWNED
CORRAL AREA #10
CORRAL AREA #11
016-140-84 11.92 ACRES OWNED
FIELD #1
CROPABLE ACREAGE 10.30 ACRES
016-140-75 10.00 ACRES OWNED
CORRAL AREA #1
016-140-81 82.52 ACRES OWNED
FIELD #4
CROPABLE ACREAGE 75.12 ACRES
016-140-70 35.00 ACRES OWNED
FIELD #7
CROPABLE ACREAGE 31.73 ACRES
CORRALL AREA #2
SETTLING POND #2
DOMESTIC WELL #4
LRG. DOMESTIC WELL #5
CORRAL AREA #3
016-140-74 10.00 ACRES OWNED
LAGOON #2
DOMESTIC WELL #6
CORRAL AREA #5
CORRAL AREA #4
016-140-11 10.00 ACRES OWNED
CORRAL AREA #6
LAGOON #3
CORRAL AREA #7
CORRAL AREA #8
CORRAL AREA #9
016-140-59 9.99 ACRES OWNED
IRR. FLOW
CUMMINS DIESEL W/ 10,000 GAL DIESEL TANK WELL W/ 40 HP PUMP #2
DOMESTIC WELL #7
FIELD #5
016-140-94 29.40 ACRES OWNED
CROPABLE ACREAGE 27.73 ACRES
DOMESTIC WELL #8
AG WELL #3
016-140-93 18.95 ACRES
IRRIGATION FLOW
FIELD #2
CROPABLE ACREAGE 16.15 ACRES ON PARCEL
016-140-61 9.98 ACRES OWNED
CROPABLE ACREAGE 8.96 ACRES
FIELD #3B
016-140-14 40.00 ACRES OWNED
AG WELL #4
FIELD #3A
CROPABLE ACREAGE 36.31 ACRES
AG WELL W/ PUMP #8
1/2 MILE RADIUS FROM NE CORNER OF SCHOOL PROPERTY TO PROPOSED DAIRY FACILITY
NOTE: MANURE CAN ONLY BE USED ON WEEKENDS & WHEN CHILDREN ARE ON SCHOOL BREAKS
FIELD #9
CROPABLE ACREAGE 63.05 ACRES
016-140-85 133.53 ACRES OWNED
FIELD #8A
CROPABLE ACREAGE 48.11 ACRES
NEIGHBORING SCHOOL
AG WELL #9
AG WELL W/ PUMP #5
AG WELL #10
FIELD #8B
CROPABLE ACREAGE 2.55 ACRES
NEIGHBORING PARCEL NOT OWNED
NEIGHBORING PARCELS NOT OWNED
NEIGHBORING PARCEL HEIFER FACILITY NOT OWNED
0 150 300
BAR SCALE

VICINITY PLAN
SCALE: 1" = 300'-0"

NORTH & SOUTH DAIRY FACILITY VICINITY PLAN
SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
316 West F Street, Ste 100
Oakdale, CA 95361
(209) 848-8674
www.dairydesigners.com

Dwg. Date:	08-21-2009
Scale:	As Shown
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Job:	412-17
Sheet # 8 of 8 Sheets	Rev Level A

ASAE EP344.2 DEC99
Lighting for Dairy Farms and the Poultry Industry

American Society of Agricultural Engineers

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ASAE-The Society for engineering in agricultural, food, and biological systems
2950 Niles Rd., St. Joseph, MI 49085-9659, USA ph. 269-429-0300, fax 269-429-3852, hq@asae.org

Lighting for Dairy Farms and the Poultry Industry

This Engineering Practice combines and therefore supersedes ASAE R286, Lighting for Dairy Farms, and ASAE R332, Poultry Industry Lighting, developed by the joint Illuminating Engineering Society---ASAE Farm Lighting Committee, EPP-46. R286 was adopted by ASAE June 1965; R332 was adopted by ASAE December 1969. This document was approved by the ASAE Electric Power and Processing Division Standards Committee and adopted by ASAE as ASAE Recommendation R344 February 1971; revised editorially and reclassified as an Engineering Practice December 1975; reconfirmed December 1980; revised March 1982; reconfirmed July 1986, December 1987; revised July 1988, reaffirmed December 1993, December 1998; reaffirmed for five years December 1999; revised editorially March 2000.

1 Purpose and scope

1.1 This Engineering Practice is intended to guide those responsible for or concerned with, the design of lighting installations on dairy farms, on poultry farms, and within the poultry industry.

1.2 This Engineering Practice applies only to the safety and effective performance of workers as they accomplish specific tasks requiring various levels of illumination. It does not apply to lighting installations used for changing the physiological or biological properties of poultry or livestock to alter their production capabilities.

1.3 The lighting recommendations are based on information obtained from search of current literature, from people and organizations active in this field, and from field measurements of lighting requirements for difficult seeing tasks. The portable Visual Task Evaluator from the Illuminating Engineering Society (IES) headquarters was used to establish the lighting requirements for many of the visual tasks. This document is in accordance with the latest knowledge and practice of the lighting field, and conforms to all official IES reports. However, future progress in agriculture and lighting will undoubtedly make revisions desirable.

2 General recommendations

2.1 Quantity of illumination

2.1.1 Recommended illumination levels

2.1.1.1 Recommended illumination levels for the poultry industry are in Table 1. Recommended illumination levels for dairy farms are in Table 2. Recommended illumination levels for general areas associated with these facilities are in Table 3. These recommended levels are commensurate with the difficulty of the seeing tasks of each area and with the general cost of lighting

2.1.1.2 The illumination values shown in Tables 1, 2, and 3 are intended to be minimum on the task regardless of the plane in which they are located. Supplemental luminaires may be used in combination with general lighting to achieve those illumination levels on the work plane.

2.1.1.3 Recommended illumination levels should be maintained at all times when luminaires are in use. Initial values must be greater by a percentage sufficient to compensate for the normal depreciation of illumination expected in luminaire service.

2.1.2 Daylighting

2.1.2.1 The source of illumination is not limited to electric lighting. Illumination from daylight should also be considered. Many farm buildings where seeing tasks are not difficult can be adequately illuminated during daytime by the judicious placement of windows. In areas where there are difficult seeing tasks, windows should be located so glare from the direct

Table 1 – Recommended illumination for poultry farm industry tasks

Areas and visual tasks	Minimum light on task at any time		Explanation
	lx	fc	
Brooding, production, and laying houses			
Feeding, inspection, and cleaning	200	20	Provided by a lighting circuit separate from the circuit used to stimulate production and growth.
Charts and records	500	50	Localized lighting is needed where charts and records are kept
Thermometers, thermostats, and time clocks	500	50	Localized lighting is needed to accurately determine readings or setting.
Hatcheries			
General area and loading platform	200	20	Needed for operators to move about readily and safely. Needed for cleanliness of the general area.
Inside incubators	500	50	Portable or localized lighting is needed for inspection and cleaning inside incubators.
Dubbing station	2000	200	Needed to prevent excessive cuts and injury. Supplemental light in addition to general lighting should be used.
Sexing	10 000	1000	Needed for sex sorting of baby chicks. Supplemental light should be used in a closed area to prevent excessive brightness ratio between the task area and the immediate surrounding areas.
Egg handling, packing, and shipping			
General cleanliness	1000	100	General illumination is needed to keep area clean and to detect any unsanitary conditions.
Egg quality inspection	1000	100	Needed to examine and grade eggs. Candling and other special grading equipment are used as separate devices for examining and grading eggs.
Loading platform, egg storage area, etc.	200	20	Needed for operator to move about readily and safely, and for safe operation and mechanical and loading equipment.
Egg processing			
General lighting	1000	100	Must meet the requirements of cleanliness for food preparation area. Includes liquid processing, pasteurizing, and freezing of raw eggs.

Table 1 – Recommended illumination for poultry farm industry tasks (continued)

Areas and visual tasks	Minimum light on task at any time lx	fc	Explanation
Fowl processing plant			
General (excluding killing and unloading area)	1000	100	General lighting for cleanliness, inspection, and sanitation. Must meet requirements of food preparation areas
Government inspection station and grading stations	1000	100	Needed to detect diseases and blemishes. Vertical illumination is needed if birds are hanging.
Unloading and killing area	200	20	Needed to move about readily and safely.
Feed storage			
Grain, feed rations	200	20	Needed to read labels, scales and detect impurities and spoilage in feed.
Processing	200	20	Needed for operator to move about readily and safely, read labels, scales, and equipment dials. Supplemental light would be needed if machine repairs are necessary.
Charts and records	500	50	If detailed records or charts are kept in the feed room, localized lighting in this area would be needed.

Table 2 – Recommended illumination for dairy farms

Areas and visual tasks	Minimum light any time lx	fc	Explanation
Milking operation area (milking parlor & stall barn)			
General	200	20	Required to determine cleanliness of cow, detect undesirable milk, handle milking equipment readily, and to detect dirt and foreign objects on the floor Should be available at cow-edge of gutter, on floor.
Cow's udder	500	50	Supplemental, to determine cleanliness of udder, to clean udder, to examine udder.
Milk handling equipment and storage area (milk house or milk room)			Required for operator to move about readily and safely, and to determine floor cleanliness.
General	200	20	Required for operator to move about readily and safely, and to determine floor cleanliness.
Washing area	1000	100	Necessary to detect dirt and other impurities on the milk handling equipment. Suplementary, portable, ultra-violet fixture should be available in this area to aid in detecting milkstone on the equipment.

Table 2 – Recommended illumination for dairy farms (continued)

Areas and visual tasks	Minimum light any time lx	fc	Explanation
Bulk tank interior	1000	100	Necessary to adequately inspect tank for cleanliness. Additional spots may be required to illuminate dip-stick or scale.
Loading platform	200	20	Required for operator to move about readily and safely.
Feeding area (stall barn feed alley, pens, and loose housing feed area)	200	20	Required for detecting foreign objects in grain, hay, or silage.
Feed storage area, forage			
Haymow	50	5	Required for safety of the operator in moving about.
Hay inspection area	200	20	Required for detecting foreign objects in grain, hay, or silage.
Ladders and stairs	200	20	
Silo	50	5	Luminaries should be mounted at the top of the silo, near the ladder chute, for ease in cleaning and lamp replacement.
Silo room	200	20	Required for detecting foreign objects in grain, hay, or silage.
Feed storage area, grain and concentrate			
Grain bin	50	5	Required to inspect amount and condition of grain. When grain is suspected of being moldy, containing foreign objects or otherwise contaminated, samples should be inspected under higher illumination levels.
Concentrate storage area	100	10	Required to read labels. Higher illumination levels are required for critical inspection for impurities and spoilage.
Feed processing area	100	10	Required for operator to move about readily and read labels, scales, and equipment dials. Additional light must be supplied by portable luminaries or daylighting if machine repairs are necessary.
Livestock housing area (community, maternity, individual calf pens, and loose-housing holding and resting areas)	100	10	Required to observe the condition of the animals and to detect hazards to the livestock and operator. Portable, supplementary lighting units can be used to examine or treat individual animals when required.

sunlight will not likely cause a problem. Many poultry buildings must eliminate all daylighting where photo period is controlled for stimulation of poultry.

Table 3 – Recommended illumination for general areas associated with dairy and poultry facilities

Areas and visual tasks	Minimum light on task at any time lx	fc	Explanation
Machine storage			
Garage and machine shed	100	10	Needed to move machinery safely. Supplemental lighting is needed for minor equipment repair.
Farm shop			
Active storage area	100	10	Needed for operator to move about readily and safely.
General shop	500	50	Machinery repair, rough sawing.
Rough bench machine work	500	50	Painting, small parts, storage, ordinary sheet metal work, welding, medium bench work. May use localized lighting.
Miscellaneous			
Farm office	1000	100	
Restrooms	200	20	
Pumphouse	200	20	
Exterior			
General inactive areas	5	0.5	Recommended to discourage prowlers and predatory animals.
General active areas (paths, rough storage, barn lots)	50	5	Needed for operator to move about safely.
Service areas (fuel storage, shop, feed lots, building entrances)	30	3	Needed for servicing machinery.

2.1.2.2 Shielding should be provided on windows directly facing the sun and should be located in areas of difficult seeing tasks. Electric illumination is often preferred over daylight illumination in these areas because of difficulty in controlling daylight illumination and the variability of daylighting.

2.1.2.3 Efficient operations are often performed when only electric illumination is available. Therefore, these recommendations provide desirable amounts of electric illumination without dependence on daylight. For information on techniques for utilizing and controlling daylight, refer to IES Recommended Practice RP-5, Recommended Practice of Daylighting.

2.2 Quality of illumination. Specifying the quantity of light in no way establishes quality of a lighting installation. Important factors affecting lighting installation are uniformity, glare, color, and environment.

2.2.1 Uniformity

2.2.1.1 Uniformity of illumination is expressed as a ratio of a maximum lux (footcandle) value to the minimum lux (footcandle) value over an area. Satisfactory uniformity ratios vary from 1.5:1 for difficult seeing tasks to 5:1 for less difficult tasks. In general, better uniformity of illumination is achieved with greater mounting heights and closer spacing of luminaires.

2.2.1.2 Light sources should be located to minimize shadows cast on the work by workers and obstructions. Objects should receive illumination from more than one direction to minimize the density of shadows and to provide uniform illumination.

2.2.2 Glare. Glare is any brightness within the field of vision that causes discomfort, annoyance, interference with vision, or eye fatigue. It is usually caused by uncontrolled light which strikes the eyes directly from a luminaire, but it can also be caused by the reflection of bright light by glossy or mirror-like surfaces. Luminaires should be selected with sufficient shielding, as shown in Figure 1, and placed so glare can be held below an objectionable level. Luminaires should be mounted as far above the normal line of sight as possible and should be designed to limit both the brightness and the quantity of light emitted in the 45 to 85 deg zone since such light is likely to be well within the field of view and may interfere with vision. This precaution extends to the use of localized lighting equipment.

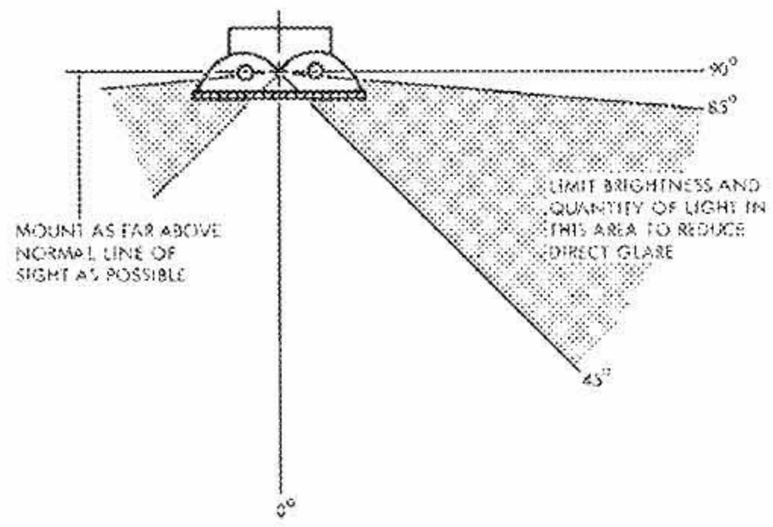


Figure 1 – Direct glare control for luminaires

2.2.3 Color. For performing some specialized seeing tasks, notably color discrimination processes and certain inspection work, light-source color may be an important factor of illumination quality. Color is also known to have certain psychological effects upon people and their emotions. These factors should be considered when selecting light sources to obtain quality lighting. For example, when grading or sorting eggs, fluorescent lamps are more effective than incandescent.

2.2.4 Environment. Certain environmental factors can greatly influence the quality of a lighting installation. Room surfaces should have high reflectance, matte finishes to help prevent excessive brightness ratios. The ceilings, walls, and floors can increase the utilization of light within a room by acting as a secondary large-area light source. Luminaires which direct some light upward toward a ceiling having a relatively high reflectance will help create a comfortable visual environment. Recommended reflectance values are presented in Table 4.

2.3 Lighting equipment

2.3.1 Lamps

2.3.1.1 Light sources available for farm lighting applications are incandescent, fluorescent, and high-intensity discharge (HID) (mercury, metal halide, high-pressure sodium, low-pressure sodium). The latter four sources are more efficient and generate 2 to 5 times as much light as the incandescent filament for the same amount of electrical energy. They also have a longer life. However, they require auxiliary electrical

Table 4 – Recommended matte reflectance values for lighting farm buildings

Surface	Reflectance, percent
Ceilings	80 to 90
Walls	40 to 60
Desk and bench tops, machines & equipment	25 to 45
Floors	20 minimum

equipment, such as ballasts. Refer to Section 9—Industrial Lighting, in the 1981 Applications Volume of the IES Lighting Handbook.

2.3.1.2 HID lamps will normally be used outdoors, but are also suitable indoors where 4 m (13 ft) or more mounting height is available. HID sources require 3 to 7 min warm-up time and may not be suited to applications where they may be turned off and on in less than an hour or two. HID lamps differ in color rendering ability, in general being lower than fluorescent or incandescent.

2.3.1.3 Incandescent-filament lamps require no auxiliary electrical control equipment, and are available in many different types and sizes. They are a high brightness source and should be used in appropriate luminaires to minimize glare. Various types of reflectorized incandescent-filaments may be used to spotlight or floodlight specific areas.

2.3.1.4 Fluorescent lamps provide a large light source. Even though surface brightness of fluorescent lamps is relatively low, fluorescent lamps should always be used in a suitable luminaire that will minimize glare. Fluorescent lamps are available in different sizes, types, and colors, which can provide color rendering, cool or warm colors. But they are temperature sensitive, and light output drops when used in either very high or extremely low ambient temperatures. Fluorescent lamps used in cold areas require a special ballast designed for low temperature starting, and an enclosure to maintain lamp temperature. High humidity causes moisture condensation on lamps in open luminaires and may prohibit fluorescent lamps from starting. Refer to Section 8—Light Sources, in the 1984 Reference Volume of the IES Lighting Handbook.

2.3.2 Luminaires

2.3.2.1 The light from most lamps is emitted in many directions. The purpose of a luminaire is to control the direction at which light is emitted so glare will be reduced and light used more effectively on the objects to be seen. In outdoor applications, luminaires should direct light downward to minimize losses, but in indoor applications, it is desirable to have a portion of the light directed toward the ceiling. Some of the light striking a light-colored ceiling is reflected back to the seeing tasks and provides a well-balanced visual environment.

2.3.2.2 Luminaires control light by reflectors (porcelain, enamel, aluminum, glass, or plastic), refractors (glass or plastic prismatic lenses), or by diffusers (glass or plastic diffusing shields). Often one or more of these principles are used in the same luminaire. Reflectors and refractors are used to direct the light for more efficient utilization. Refectors, refractors, and diffusing shields are used to prevent glare. Refer to Section 9 in the 1984 Reference Volume of the IES Lighting Handbook.

2.3.2.3 A luminaire prevents water from striking the hot lamps when they are used in damp or outdoor locations. There are some specifically constructed, reflectorized, incandescent filament lamps which can be exposed to the weather or water spray.

2.3.3 Codes

2.3.3.1 The use of lighting equipment is governed by many federal, state, and local codes. Some public health codes specify minimum illumination levels required in processing plants, egg handling areas, milking and milk handling areas to maintain health standards. Public health lighting requirements are normally below those shown in Tables 1 and 2 since they are concerned only with sanitation. The levels recommended were selected for efficient performance of visual tasks but with concern for proper sanitation.

2.3.3.2 The modern farm includes many types of occupancies which may be wet, damp, corrosive, dirty, surrounded by combustible materials, or saturated with gasoline fumes. Therefore, it is important to follow the National Fire Protection Association Standard No. 70, National Electrical Code, and any local regulation which may be in effect when installing the lighting equipment. Assistance may be obtained by contacting a local electric power supplier or by referring to the Agricultural Wiring Handbook published by the National Food and Energy Council.

2.3.4 Maintenance

2.3.4.1 Lighting systems should be inspected and serviced regularly to maintain illumination levels for which they are designed. The elements of maintenance are light sources, luminaires, and room surfaces.

2.3.4.2 The lighting output of most lamps diminishes with use. In many cases, it is economical to replace lamps before they fail. Saving can sometimes be realized by replacing groups of lamps near the end of their useful life, rather than replacing individual lamps as they burn out.

2.3.4.3 The rate of depreciation of lamps and lighting equipment caused by dirt accumulation is dependent upon the atmospheric conditions and the type of lighting system employed. Losses up to 50% have resulted from poor maintenance.

2.3.4.4 Wall surfaces should be cleaned and painted regularly to improve reflective characteristics of the surfaces and to provide the proper visual environment. It is also important to keep windows clean in areas where they contribute to daytime illumination.

3 Glossary of terms

3.1 diffuser: A device used to redirect the illumination by the process of diffuse transmission.

3.2 footcandle: The unit of illumination when the foot is the unit of length. It is the illumination on a surface one square foot in area on which is uniformly distributed a flux of one lumen. It equals one lumen per square foot.

3.3 general lighting: Lighting designed to provide a uniform level of illumination throughout the area involved.

3.4 glare: The effect of brightness or brightness differences within the visual field sufficiently high to cause annoyance, discomfort, or loss in visual performance.

3.5 illuminance: The density of the luminous flux incident on a surface; it is the quotient of the luminous flux by the area of the surface when the latter is uniformly illuminated.

3.6 local lighting: Illumination provided over a relatively small area or confined space without any surrounding general lighting.

3.7 louver: A series of baffles used to shield a source from direct view at certain angles or to absorb unwanted light.

3.8 lumen: The unit of the time rate of flow of light (luminous energy) equal to the energy emitted through a unit solid angle (one steradian) from a uniform point source of one candela.

3.9 luminaire: A complete lighting unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

3.10 lux: The unit of illumination when the meter is the unit of length. It is the illumination on a surface one square meter in area on which is uniformly distributed a flux of one lumen. It equals one lumen per square meter.

3.11 reflector: A device used to redirect the light from a source primarily by the process of reflection.

3.12 refractor: A device used to redirect the illumination primarily by the process of refraction. (The bending of a ray of light as it passes obliquely from one medium to another in which its velocity is different.)

3.13 shielding angle (of a luminaire): The angle between a horizontal line through the light center and the line of sight at which the base source first becomes visible.

3.14 supplemental lighting: Lighting used to provide a specific amount or quality of illumination which cannot be readily obtained by the general lighting system, and which supplements the general lighting system.

3.15 visual task: Conventionally designates those details and objects that must be seen for the performance of a given activity, and includes the immediate background of the details or objects.

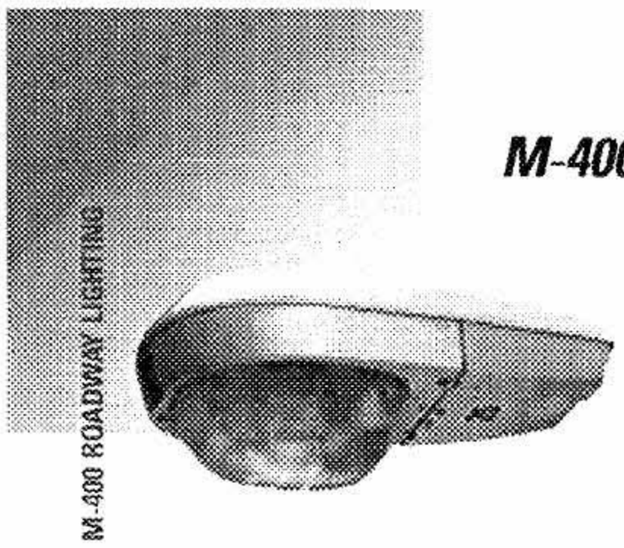
3.16 work plane: The plane at which work is done, and on which, illuminance is specified and measured. Unless otherwise indicated, this is assumed to be a horizontal plane 0.75 m (2.5 ft) above the floor.

References

Last printed in 1989 STANDARDS; list available from ASAE Headquarters.

Cited Standards:

IES RP-5, Recommended Practice of Daylighting
NFPA No. 70, National Electrical Code



M-400A POWR/DOOR® LUMINAIRE

APPLICATIONS
- For street and parking lot lighting

SPECIFICATION FEATURES
- Powr/Module ballast assembly
- Filtered optics
- Standardized reflector
- Universal two or four-bolt slipfitter
- Die-cast aluminum housing with electrocoat gray paint finish
- "Dead back" tunnel type, FRP terminal board
- 2 in. pipe mounting only with MDRA
- Adjustable mogul base socket (house side) -- E39 standard
- ALGLAS® finish on reflector
- No-tool PE receptacle
- Plug-in ignitor available
- External paddle type stainless steel bail latch
- Ⓤ /Ⓒ listed unit available—See Options
- Standard construction is IP55

ORDERING NUMBER LOGIC

MDRA	40	S	1	A	2	1	R	MS3	1	F
PRODUCT DESIGNATION	WATTAGE	LIGHT SOURCE	VOLTAGE	BALLAST TYPE	PE FUNCTION	IGNITOR/ MONITOR	LENS TYPE/ PRISMATIC REFRACTOR	IES DISTRIBUTION TYPE	FILTER	OPTIONS
XXX	XX	X	X	X	X	X	X	XXX	X	XXX
MDRA = M-400A 4-Bolt Slipfitter MDRL = M-400A 2-Bolt Slipfitter	10 = 100 15 = 150 (55V) 17 = 175 20 = 200 24 = 250/400 25 = 250 31 = 310 40 = 400 NOTE: Dual wattage connected for lower wattage only	S = HPS M = MH C = Merc Standard: Lamp not included.	60Hz 0 = 120/208/240/277 Multi-volt 1 = 120 2 = 208 3 = 240 4 = 277 5 = 480 7 = 120X240 8 = 240V Ballast 120V PE Receptacle not reconnectable D = 347 F = 120X347 T = 220 W = 230 50Hz 6 = 220 R = 230 Y = 240 NOTE: Dual voltage connected for lower voltage	See Ballast Selection Table A = Autoreg C = Merc-Reg H = HPF Reactor or Lag M = May-reg N = NPF Reactor or Lag P = CWI with Grounded Socket Shell	1 = None 2 = PE Receptacle NOTE: Receptacle connected same voltage as unit except as noted. Order PE Control separately.	1 = Non Plug-in/ None 2 = Plug-in base and ignitor	See Photometric Selection Table R = Prismatic Glass Refractor P = Lexan SLX Prismatic Refractor	See Photometric Selection Table S = Short M = Medium S = Semi-cutoff C = Cutoff 2 = Type II 3 = Type III	1 = Fiber gasket 2 = Charcoal with elastomer gasket	F = Fusing (Not available with multivolt or dual voltage) J = Line Surge Protector, Expulsion Type N = Meets proposed ANSI C136.31 requirements for Bridge and Underpass Vibration U = UL Listed (60Hz only)

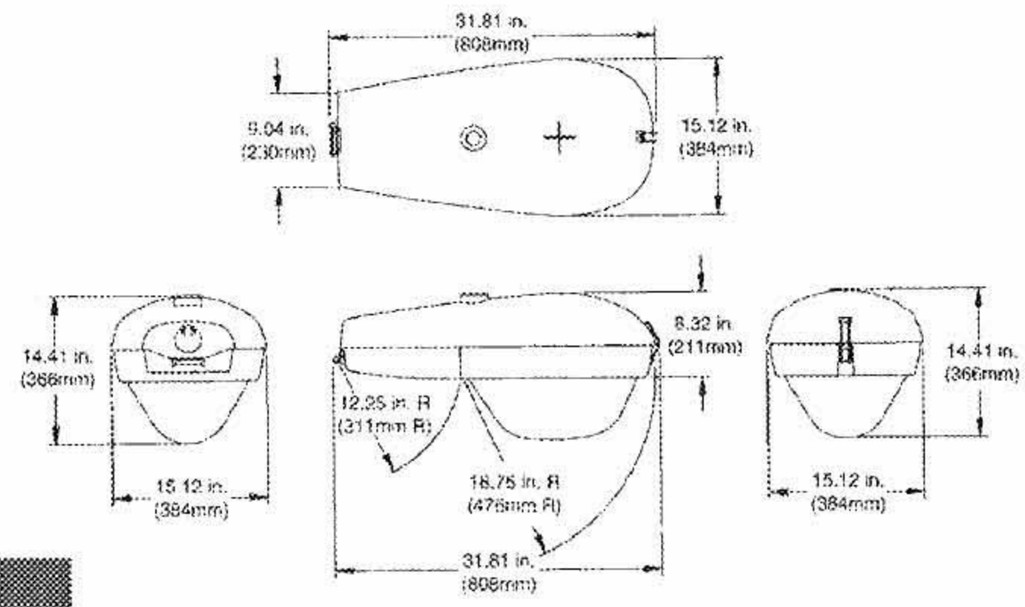
PHOTOMETRIC SELECTION TABLE

GLASS PRISMATIC REFRACTOR
All light sources are clear unless otherwise indicated.

Wattage	Light Source	IES Distribution Type Photometric Curve Number 35-45xxxx					
		Semi-Cutoff		Cutoff			
		MS2	MS3	MC2	MC3	SC2	SC3
150 (55V)	HPS	0390	0389	N/A	0388	N/A	N/A
200-400	HPS	1007	1008	1009	1010	N/A	1011
175 & 250	MH	0346	0344	N/A	N/A	N/A	0345
400	MH	0279	0278	N/A	N/A	N/A	N/A
400	Merc	0374	0373	N/A	N/A	0396	N/A
400 (Coated)	Merc	N/A	N/A	N/A	N/A	0356	0355

NOTE: N/A = Not Available C/F = Contact Factory
*Lexan® SLX polycarbonate reduce light levels by 10%

FIXTURE DIMENSIONS



DATA

Approximate Net Weight	30-39 lbs	15-18 kgs
Effective Projected Area	1.4 sq. ft. max	.13 sq. M max
Suggested Mounting Height	30-50 ft.	9-15 M

REFERENCES

See Page R-44 for start of Accessories.
See Page R-48 for Explanation of Options and Other Terms Used.
See Pole and Bracket Section Page P-2 for pole selection.

BALLAST SELECTION TABLE

Wattage	Light Source	Multi-volt	Ballast Type/Voltage 60Hz 120	208	240	277	480	120X 240	347, 120X347	240/120 PE R	220	230	50Hz 220	230	240
150 (BSV)	HPS	H,N	G,H,M,N	G,M	G,M	G,M	G,M	G,H,M,N	G*,H,M*,N	G,M	N/A	N/A	N/A	N/A	N/A
200	HPS	A,M,P	A,G,H,M,N,P	A,G,H,M,N,P	A,G,H,M,N,P	A,G,M,P	A,G,M,P	A,G,M,P	N/A	A,G,H,M,N	N/A	H	N/A	N/A	N/A
250	HPS	A,M,P	A,G,H,M,N,P	A,G,H,M,N,P	A,G,H,M,N,P	A,G,L,M,P	A,G,M,P	A,G,M,P	A,M,P	A,G,H,M,N	A,H	H	A,H,M,N	H	M
250/400	HPS	A	A	A	A	A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
310	HPS	A,M	A,G,M	A,G,H,M,N	A,G,H,M,N	A,G,M	A,G,M	A,G,M	N/A	A,G,H,M,N	N/A	H	N/A	N/A	N/A
400	HPS	A,M	A,G,M	A,G,H,M,N	A,G,H,M,N	A,G,M	A,G,M	A,G,M	A,G,M	A,G,H,M,N	H,A,N	H	A,H,M,N	N/A	A,H,M
70, 100,150	MH	H,N	H,N	H,N	H,N	H,N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
175	MH	A	A	A	A	A	A	A	A	A	N/A	N/A	N/A	N/A	N/A
250	MH	A	A	A	A	A	A	A	A	A	A	N/A	N/A	N/A	N/A
400	MH	A	A,P	A,P	A,P	A,P	A,P	A,P	A,P	A	A	N/A	N/A	N/A	A
400	Merc	C	C,N	C	C,H,N	C,H,N	C	C	N/A	C,H,N	N/A	N/A	C/F	N/A	H

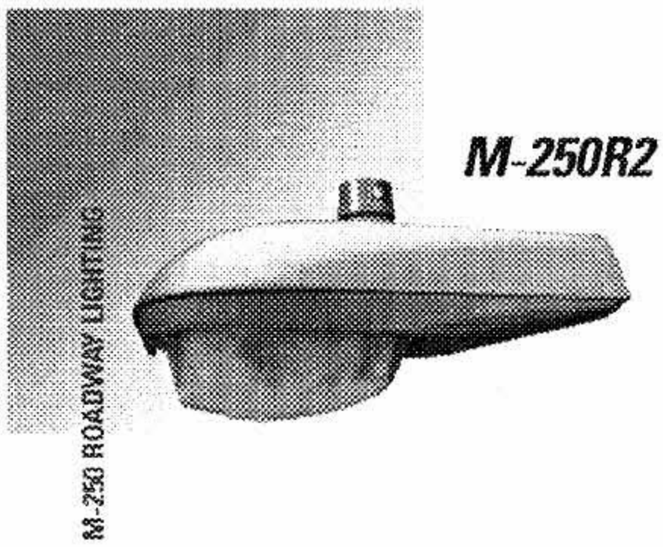
NOTE: N/A = Not Available
*Not available in 120X347 volt
C/F = Contact factory

MDRA — SUGGESTED CATALOG ORDERING NUMBERS

Catalog Number	Wattage	Light Source	Voltage (60 Hz)	Ballast Type	Refractor Type	Photometric Distribution
MDRA25S0A22RMS31	250	HPS	Multivolt	Auto-Regulator	Glass	MS3
MDRA40S0A22RMS31	400	HPS	Multivolt	Auto-Regulator	Glass	MS3

All GE suggested catalog ordering numbers come with PE receptacle. PE control must be ordered separately. Order and install SCCL-PECTL if no PE is desired.

Multivolt ballasts can be for either 120, 208, 240, or 277 volt incoming power supply.



M-250R2 LUMINAIRE

APPLICATIONS
- For lower wattage roadway applications including residential streets, parking lots and other long, narrow areas

SPECIFICATION FEATURES
- Universal two-bolt slipfitter
- Die-cast aluminum housing with electrocoat gray paint finish
- Adjustable mogul base socket (street side) -- E39 standard
- No-tool PE receptacle
- Plug-in ignitor
- External stainless steel bail latch
- Standard construction is IP55
- Plastic pest guard standard (not required for 2 in. pipe)
- ® /® listed for wet location available as an option

ORDERING NUMBER LOGIC

M2RR	15	S	1	N	2	A	MS3	F
PRODUCT SELECT	WATTAGE	LIGHT SOURCE	VOLTAGE	BALLAST TYPE	PE FUNCTION	LENS TYPE (PRISMATIC) REFRACTOR	IES DISTRIBUTION TYPE	OPTIONS
XXX	XX	X	X	X	X	X	XXX	XXX
M2RR = M-250R2	05 = 50 07 = 70 10 = 100 15 = 150 (55V) 17 = 175 20 = 200 21 = 100/150 (55V) 25 = 250 NOTE: Dual wattage connected for lower wattage	S = HPS C = Merc Standard. Lamp not included.	60Hz 0 = 120/208/240/277 Multivolt 1 = 120 2 = 208 3 = 240 4 = 277 5 = 480 7 = 120X240 8 = 240V Ballast 120V PE Receptacle not reconnectable D = 347 F = 120X347 T = 220 50Hz 6 = 220 H = 230 Y = 240 NOTE: Dual voltage connected for lower voltage	See Ballast Selection Table A = Autoreg C = Merc-Reg G = Mag-Reg with Grounded Socket Shell H = HPF Reactor or Lag M = Mag-Reg N = NPF Reactor or Lag P = CWI with Grounded Socket Shell	1 = None 2 = PE Receptacle NOTE: Receptacle connected same voltage as unit except as noted. Order PE Control separately.	See Photometric Selection Table A = Acrylic G = Glass L = Polycarbonate NOTE: 150 watt Maximum with Acrylic or Polycarbonate Refractors.	See Photometric Selection Table M = Medium L = Long S = Semi-cutoff N = Non-cutoff 2 = Type II 3 = Type III 4 = Type IV	C = Charcoal filter F = Fusing (Not available with multivolt or dual voltage) J = Line Surge Protector, Expulsion Type N = Meets proposed ANSI C136.31 requirements for Bridge and Underpass Vibration U = (UL) /(cUL) listed with glass only

PHOTOMETRIC SELECTION TABLE

All light sources are clear unless otherwise indicated.

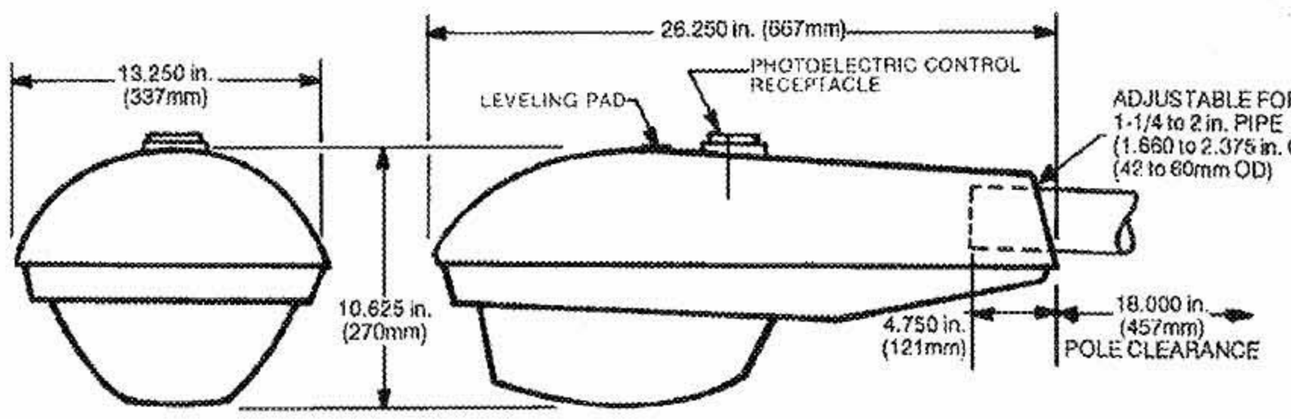
Wattage	Light Source	Lens Type (Prismatic Refractor)	IES Distribution Type Photometric Curve Number 35-17 - - - - (Socket Position)					
			LN3	LN4	MN2	MN3	MS2	MS3
50,70,100,150 (55 V)	HPS	Acrylic	N/A	N/A	7246(1A)	7247(2A)	7244(2B)	7245(2.5B)
50,70,100,150 (55 V)	HPS	Glass	N/A	N/A	7250(1A)	7251(2A)	7248(1.5B)	7249(2.5B)
50,70,100,150 (55 V)	HPS	Polycarb.	7258(1A)	7259(2A)	N/A	7256(2B)	N/A	N/A
200, 250	HPS	Glass	N/A	N/A	N/A	N/A	7261(2DH)	7260(1DH)
100, 175, 250	Merc	Glass	N/A	N/A	7284(1A)	7279(2A)	7280((1B)	7281(2B)

NOTE: N/A = Not available
Lexan SLX polycarbonate reduce light levels by 10%

GE Lighting Systems, Inc.
www.gelightingsystems.com

M-250R2 LUMINAIRE

FIXTURE DIMENSIONS



DATA

Approximate Net Weight	20-30 lbs	9-14 kgs
Effective Projected Area	0.7 sq. ft. max	0.07 sq. M max
Suggested Mounting Height	20-40 ft	6-12 M

REFERENCES

See Page R-44 for start of Accessories.
See Page R-48 for Explanation of Options and Other Terms Used.
See Pole and Bracket Section Page P-2 for pole selection.

BALLAST SELECTION TABLE

Wattage	Light Source	Ballast Type/Voltage 60Hz: Multi-volt	120	208	240	277	480	120X240	347, 120X347	240/120 PE R	220	230	50Hz: 220	230	240
50	HPS	H,N	H,N	H,N	H,N	H,N	H,N	H,N	H,N	H,N	N/A	N/A	N/A	N/A	N/A
70,100,150 (55V)	HPS	A,H,N	A,G,H,M,N,P	A,G,H,M,N	A,G,H,M,N,P	A,G,H,M,N	G,M	G,H,M,N,P	G*,H,M*,N	G,H,M,N	H,M,N	N/A	H,M,N	H	N/A
100/150 (55V)	HPS	N/A	H,N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200, 250	HPS	A,P	A,H,N,P	A,H,N,P	A,H,N,P	A,P	A,P	A,P	A**,P	A,H,N	H	H	A,H,N	H	H
100, 175	Merc	C	C,N	C	C,H,N	C	C	C	N/A	C,H,N	N/A	N/A	N/A	N/A	N/A
250	Merc	C	C,N	C	C,H,N	C	C	C	N/A	C,H,N	N/A	N/A	H	N/A	H

NOTE: N/A = Not available
NOTE: *Not available in 120X347 volt
NOTE: **Not available in 200 watt

M2AC — SUGGESTED CATALOG ORDERING NUMBERS

Catalog Number	Wattage	Light Source	Voltage (60 Hz)	Ballast Type	Refractor Type	Photometric Distribution
M2RR10S1N2AMS2	100	HPS	120	NPF Reactor	Acrylic	MS2
M2RR15S1N2AMS3	150	HPS	120	NPF Reactor	Acrylic	MS3
M2RR25S0A2GMS3	250	HPS	Multivolt	Auto-Regulator	Glass	MS3

All GE suggested catalog ordering numbers come with PE receptacle. PE control must be ordered separately. Order and install SCCL-PECTL if no PE is desired.

Multivolt ballasts can be for either 120, 208, 240, or 277 volt incoming power supply.

TURNPIKE ROADWAY LIGHTING

TURNPIKE™ LUMINAIRE

APPLICATIONS
- For roadways and parking lots

SPECIFICATION FEATURES
- Charcoal filtering
- ALGLAS® finish on aluminum reflector
- Front access via hinged/ removable door
- Heavy-duty die-cast aluminum housing
- Electrocoat epoxidized acrylic dark bronze or gray paint finish on housing
- Steel trunnion with aiming degree marker
- Built-in aiming indicator
- Borosilicate glass lens
- Tray mounted ballast available
- Environment protected external hardware
- Terminal board
- Mogul base socket -E39 standard
- Slipfitter mounting available
- Standard construction is IP55
- Ⓤ /Ⓒ Listed for wet location available as an option

ORDERING NUMBER LOGIC

RPFS	40	S	5	A	1	G	LN3	GR	K
PRODUCT CODE	WATTAGE	LIGHT SOURCE	VOLTAGE	BALLAST CODE	PE FUNCTION	LENS CODE	IES DISTRIBUTION CODE	COLOR	OPTIONS
XXXX	XX	X	X	X	X	X	XXX	XX	XXX
RPFS = Turnpike Luminaire Standard RPFT = Turnpike Luminaire with Tray Mounted Ballast NOTE: Not available with MH or Merc or Mag-Reg	07 = 70 10 = 100 15 = 150 (55V) 20 = 200 24 = 250/400 25 = 250 40 = 400	S = HPS M = MH or Merc Standard: Lamp not included.	60Hz 0 = 120/208/240/277 Multivolt 1 = 120 2 = 208 3 = 240 4 = 277 5 = 480 8 = 240V Ballast 120V PE Receptical not recon-nectable D = 347 F = 120X347 T = 220 50Hz 6 = 220 R = 230 Y = 240 NOTE: 120X347 connected for 120V	See Ballast and Photometric Selection Table A = Autoreg G = Mag-Reg with Grounded Socket Shell H = HPF Reactor or Lag K = Hot Restart M = Mag-Reg N = HPF Reactor or Lag P = CWI with Grounded Socket Shell	1 = None 2 = PE Receptacle NOTE: Receptacle connected same voltage as unit except as noted. Order PE Control separately.	G = Glass Clear	See Ballast and Photometric Selection Table L = Long M = Medium N = Non-cutoff 2 = Type II 3 = Type III 4 = Type IV	DR = Dark Bronze Standard GR = Gray	B = Time Delay Automatically Switched Quartz F = Fusing (Not available with multivolt or dual voltage) G = Top Trunnion J = Line Surge Protection, Expulsion Type K = Knuckle Slipfitter for 1.9-in. to 2.38-in. (48 to 60 mm) OD Tenon L = Latch for door P = Prewired with 6 ft (1.8 meters) #14/3 Q = Non-Time Delay Automatically Switched Quartz S = Knuckle Slipfitter for 1.9-in. to 3.0-in. (48 to 76 mm) OD Tenon U = Ⓤ /Ⓒ listed for wet location available as an option V = Knuckle Wall Mount

PHOTOMETRIC SELECTION TABLE

Wattage	Light Source	IES Distribution	Photometric Curve Number 35------
70, 100, 150 (55V)	HPS	MN3	178034
200	HPS	LN4	452594
250	HPS	LN4	452592
310	HPS	LN4	452593
400	HPS	LN4	452580
400	MH or Merc	MN2	178038

NOTE: All light sources are clear unless otherwise indicated.
All with clear borosilicate lens.

GE Lighting Systems, Inc.
www.gelightingsystems.com

Table 18
COMPATIBILITY OF LAND USES TO NOISE ENVIRONMENTS

LAND USE RECEPTORS	EXTERIOR NOISE EXPOSURE ALLOWANCES (in decibels (Ldn))	INTERIOR NOISE EXPOSURE ALLOWANCES (in decibels (Ldn))
AGRICULTURAL: Agricultural & Intensive Agricultural Uses	< 70	
	70-75	
	> 75	
COMMERCIAL: Retail sales, Office buildings, Professional services, Commercial business	< 70	
	70-75	
	> 75	
INDUSTRIAL: Industrial, Manufacturing, Utility, and Waste Disposal Facilities	< 70	
	70-75	
	> 75	
INSTITUTIONAL - NOISE SENSITIVE: Schools, Hospitals, Nursing homes, Libraries, Churches	< 65	< 45
	65-70	
	> 70	> 45
INSTITUTIONAL - NON-NOISE SENSITIVE: Auditoriums, Theaters		
	< 70	
	> 70	
OUTDOOR ACTIVITIES: Golf courses, Riding stables, Water recreation, Cemeteries	< 70	
	> 70	
OUTDOOR RECREATION: Playgrounds, Neighborhood parks	< 70	
	> 70	
RECREATIONAL: Outdoor spectator sports activities, Sports arenas/stadiums		
	> 70	
RESIDENTIAL - MULTIPLE FAMILY	< 65	< 45
	65-70	
	> 70	> 45
RESIDENTIAL - SINGLE FAMILY	< 60	< 45
	60-70	
	> 70	> 45
RESIDENTIAL - RURAL RESIDENTIAL	< 65	< 45
	65-70	
	> 70	> 45
TRANSIENT LODGING - MOTELS, HOTELS, RV PARKS	< 65	< 45
	65-70	
	> 70	> 45

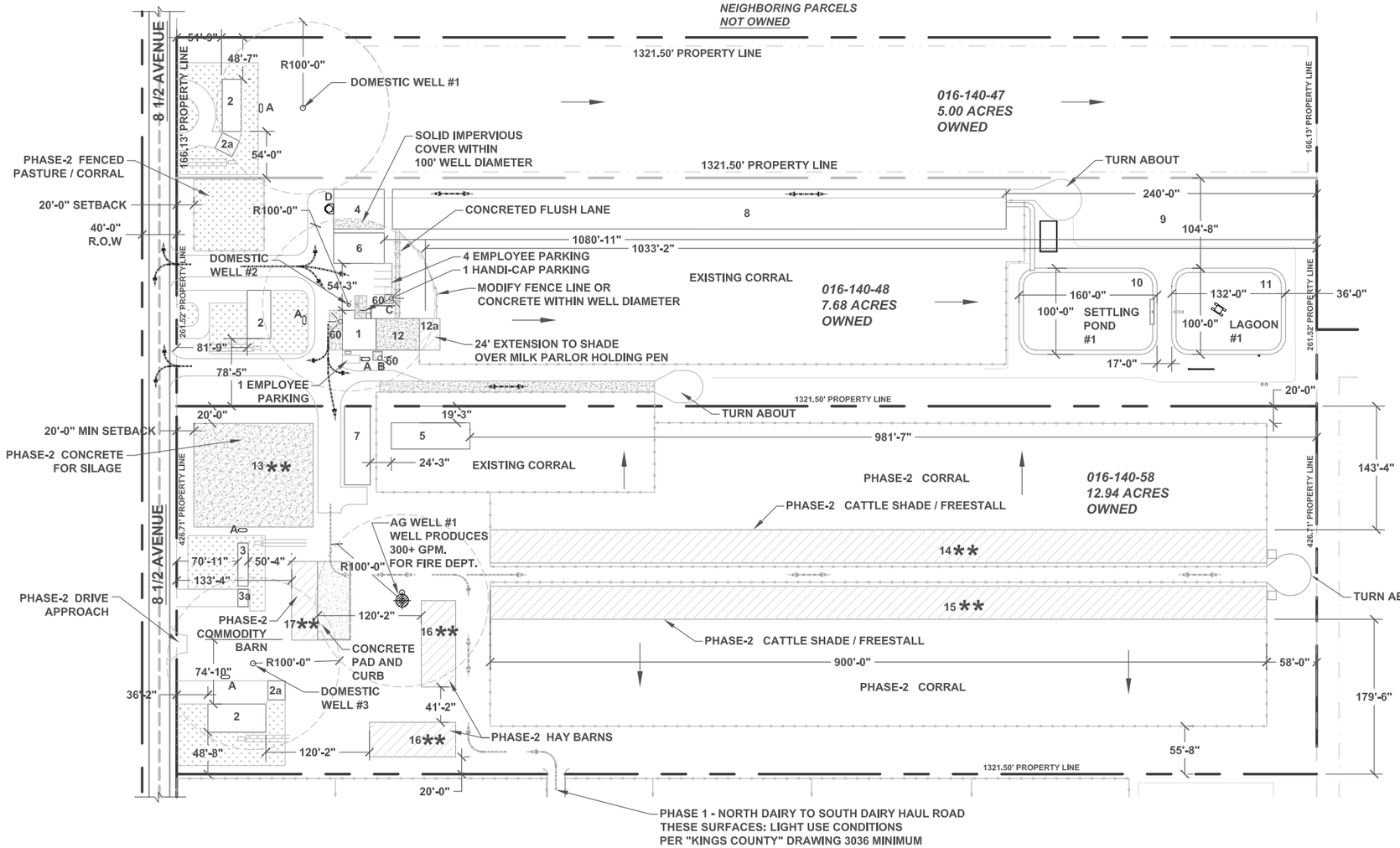
LEGEND

Acceptable
Conditionally Acceptable
Unacceptable
< Less than
> Greater than

*Note. The above table applies both to encroachment on new land uses by existing noise sources, and to encroach noise sources on existing land uses.
When noise is measured in hourly Leq, 50 Leq shall be the equivalent standard for 60 Ldn or CNEL.

ATTACHMENT 11

Site Plans



NORTH FACILITY SITE PLAN

0 37.5 75 150

BAR SCALE (1" = 150')

NOTE:

THERE ARE NO TRUCK SCALES ON THIS DAIRY SITE

DAIRY AREA LEGEND

- 1- MILK PARLOR 58'W x 66'L x 17'H
- 2- RESIDENCE
- 2a- GARAGE
- 3- MOBILE HOME
- 3a- CARPORT
- 4- SHADE BARN 46'W x 100'L x 12'H
- 5- SHADE BARN 30'W x 91'L x 12'H
- 6- SHOP 26'W x 80'L x 14'H
- 7- COMMODITY BARN 60'W x 105'L x 16'H
- 8- SHADE BARN 46'W x 600'L x 12'H
- 9- SCRAPE MANURE STORAGE
- 10- SETTLING POND #1 150' x 100'
- 11- LAGOON #1 160' x 100'
- 12- SHADE OVER MB HOLDING PEN 35'-10"W x 50'L x 15'-9"H
- 12a- 24' EXTENSION TO SHADE
- ** 13- PHASE-2 CONCRETE FOR SILAGE
- ** 14- PHASE-2 CATTLE SHADE BARN 40'W x900'L x16'H
- ** 15- PHASE-2 CATTLE SHADE BARN 40'W x900'L x16'H
- ** 16- PHASE-2 HAY BARNS 40'W x100'L x30'H
- ** 17- PHASE-2 COMMODITY BARN 40'W x100'L x20'H

* 60- PHASE-1 EXISTING LIGHTS WILL BE REPLACED WITH GE M400A OR M-250 R2 FIXTURES OR EQUAL AS PER TECH REPORT SECTION 10. THE LIGHTS SHALL BE SHROUDED AND THE LIGHT SHALL BE DIRECTED ONLY ON-SITE.

- A- PROPANE TANK
- B- WATER STORAGE TANK W/ LIGHT
- C- WATER STORAGE TANK W/ LIGHT
- D- FLUSH TANK

* = PHASE-1 NONE
** = PHASE-2 PLANS FOR FUTURE CONSTRUCTION

LEGEND

- PROPERTY LINE
- CROPABLE FIELD
- INGRESS / EGRESS
- DRAINAGE FLOW DIRECTION
- EXTERIOR LIGHT OMNI DIRECTIONAL
- EXTERIOR LIGHT ONE DIRECTIONAL
- A 2 1/2 NATIONAL STANDARD HOSE THREAD (MALE FITTING) WILL BE ATTACHED TO THE WELL FOR FIRE DEPARTMENT CONNECTION. THE MALE FITTING WILL HAVE A CAP TO PROTECT THE THREADS WHEN NOT IN USE.
- EXISTING GRASS

VICINITY MAP

SHEET REV:	DESCRIPTION	DATE
A	INITIAL RELEASE	8-21-2009 ORIGINAL @ REVISION "A"
B	DRAWING: CUP 09-07 CORRECTIONS BASED ON LETTER DATED OCT 16th , 2009 FROM MARK SHERMAN	10-03-2009 SHEET @ REVISION "B"
C	DRAWING: CUP 09-07 CORRECTIONS BASED ON LETTER DATED NOV 19th , 2009 FROM MARK SHERMAN	11-30-2009 SHEET @ REVISION "C"
D	DRAWING: CUP 09-07 CORRECTIONS BASED ON LETTER DATED JAN 7th , 2010	01-25-2010 SHEET @ REVISION "D"
E	DRAWING: CUP 09-07 CORRECTIONS BASED ON VERBAL COMMENTS FROM MEETING ON FEB 17th , 2010	01-25-2010 SHEET @ REVISION "D"

TITLE PG REV: E

NORTH FACILITY SITE PLAN
CUP 09-07
SOZINHO DAIRY

SITE:
11235 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-48

OWNER:
SOZINHO DAIRY
11447 8-1/2 AVE.
HANFORD, CA 93230

CONTACT
DANNY SOZINHO

CELL: 559-381-5485

Western Dairy Design Associates, Inc.
316 West F Street, Ste 100
Oakdale, CA 95361
(209) 848-8674
www.dairydesigners.com

Dwg. Date:	01-21-2010
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-16
Sheet #	1C of 3 Sheets
	E Rev Level

VICINITY MAP

DAIRY SITE

DAIRY AREA LEGEND

- 20- MILK PARLOR 24'W x 51'L x 17'H
- 21- RESIDENCE W/ GARAGE
- 22- MOBILE HOME 12'W x 50'L x 11'H
- 23- SHOP 26'W x 80'L x 14'H
- 24- OFFICE 30'W x 40'L x 13'H
- 25- HAY BARN 40'W x 100'L x 30'H
- 26- COMMODITY BARN 60'W x 105'L x 16'H
- 27- DEAD ANIMAL STORAGE 30'W x 30'L x 15'H
- * 28- PHASE-1 EQUIPMENT STORAGE 50'W x 90'L x 11'H
- 29- GARAGE 50'W x 142'L x 12'H
- 30- HAY BARN 70'W x 140'L x 30'H
- 31- MATERNITY BARN 61'W x 220'L x 22'H
- 32- FREESTALL BARN 98'W x 320'L x 26'H
- 33- FREESTALL BARN 98'W x 580'L x 26'H
- 34- SHADE BARN 26'W x 80'L x 12'H
- 34a- SHADE 20'Lx 30'W x12'H
- 35- SHOP 26'W x 80'L x 14'H
- 36- SCRAPE MANURE STORAGE
- * 37- PHASE-1 LAGOON & SETTLING POND #2
- 38- CONCRETE MANURE STORAGE AREA
- 39- SOLID SEPARATOR
- 40- LAGOON #3 140'W x 400'L
- 41- FLUSHED MANURE EFFLUENT CATCH BASIN 60'W x 150'L
- 42- BORROW PIT
- 43- SHADE BARN 26'W x 80'L x 12'H
- * 44- PHASE-1 SHADE BARN 28'W x 160'L x 13'-8"H
- * 45- PHASE-1 SHADE BARN 28'W x 280'L x 13'-8"H
- * 46- CALF SHADE BARN 20'-8"W x 580'L x 12'H
- * 47- PHASE-1 CALF SHADE BARN 21'W x 300'L x 12'H
- * 48- PHASE-1 CALF PENS OVER CONCRETE FLUSH LANES
- ** 49- PHASE-2 CALF PENS OVER CONCRETE FLUSH LANES
- 50- EMERGENCY MILK TANK ROOM 17'-4" W x 24'L x 12'H
- ** 51- PHASE-2 SHADE BARN 40'W x120'L x16'H
- ** 52- PHASE-2 SHADE BARN 40'W x400'L x16'H
- ** 53- PHASE-2 SHADE BARN 40'W x640'L x16'H
- ** 54- PHASE-2 SHADE BARN 40'W x360'L x16'H
- 55- CONCRETE FEED & SILAGE PAD
- 56- DRIED MANURE STORAGE AREA

*60- PHASE-1 EXISTING LIGHTS WILL BE REPLACED WITH GE M400A OR M-250 R2 FIXTURES OR EQUAL AS PER TECH REPORT SECTION 10. THE LIGHTS SHALL BE SHROUDED AND THE LIGHT SHALL BE DIRECTED ONLY ON-SITE.

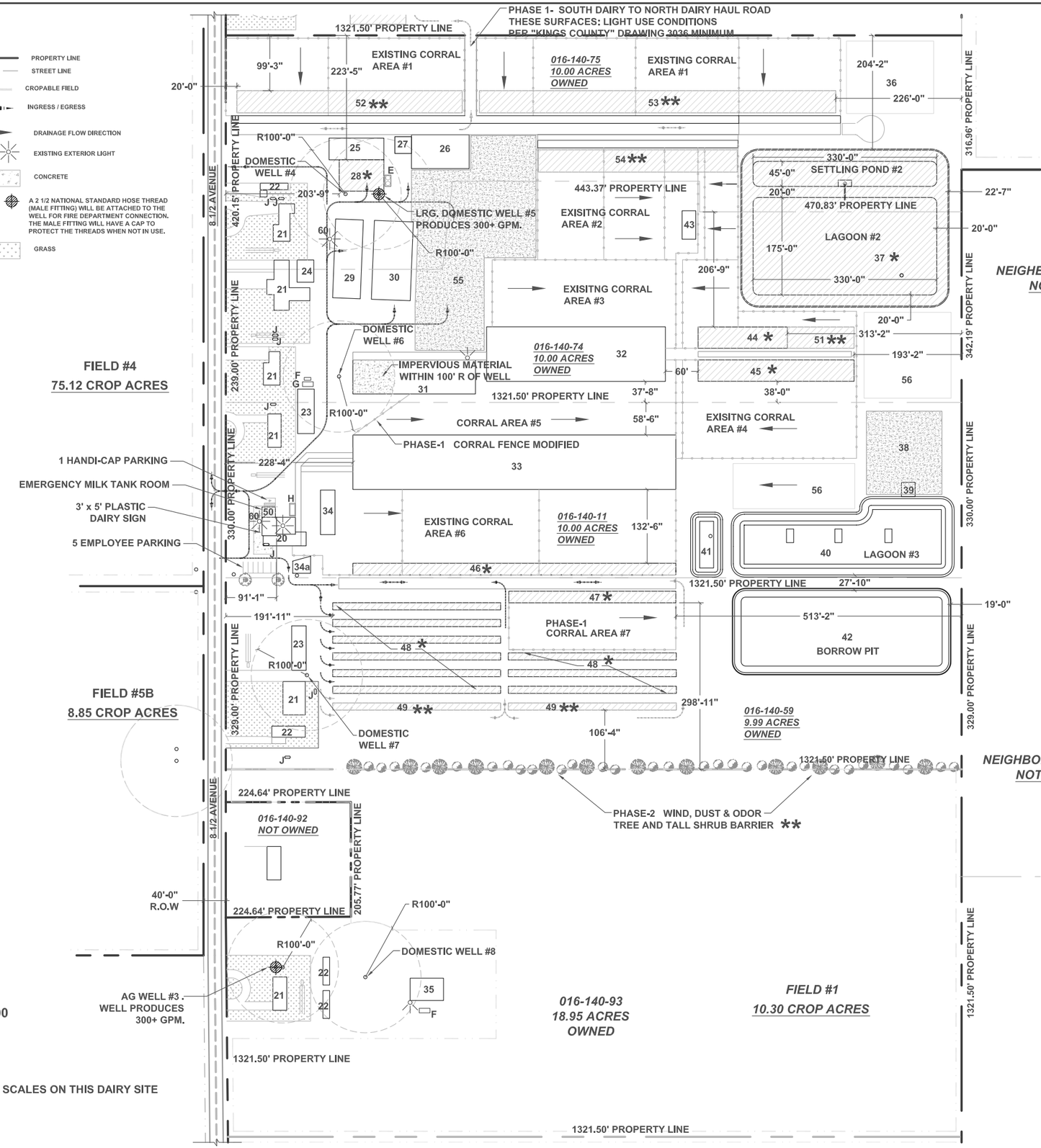
- E- 2 - 10,000 GAL LIQUID STORAGE TANKS
- F- 250 GAL ABOVE GROUND FUEL TANK
- G- 500 GAL ABOVE GROUND DIESEL TANK
- H- WATER STORAGE TANK
- J- PROPANE TANK

* = PHASE-1 NEW CONSTRUCTION
** = PHASE-2 PLANS FOR FUTURE CONSTRUCTION

0 50 100 200
BAR SCALE

NOTE:
THERE ARE NO TRUCK SCALES ON THIS DAIRY SITE

LEGEND
- PROPERTY LINE
- STREET LINE
- CROPABLE FIELD
- INGRESS / EGRESS
- DRAINAGE FLOW DIRECTION
- EXISTING EXTERIOR LIGHT
- CONCRETE
- A 2 1/2 NATIONAL STANDARD HOSE THREAD (MALE FITTING) WILL BE ATTACHED TO THE WELL FOR FIRE DEPARTMENT CONNECTION. THE MALE FITTING WILL HAVE A CAP TO PROTECT THE THREADS WHEN NOT IN USE.
- GRASS



SOUTH FACILITY SITE PLAN

SOUTH FACILITY SITE PLAN
CUP 09-07
SOZINHO DAIRY

SITE:
11447 8-1/2 AVE.
HANFORD, CA 93230
APN# 016-140-74

OWNER:
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Dwg. Date:	01-21-2010
Scale:	As Shown
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Job:	412-16
Sheet #	2C of 3 Sheets
	E Rev Level

SITE PLAN

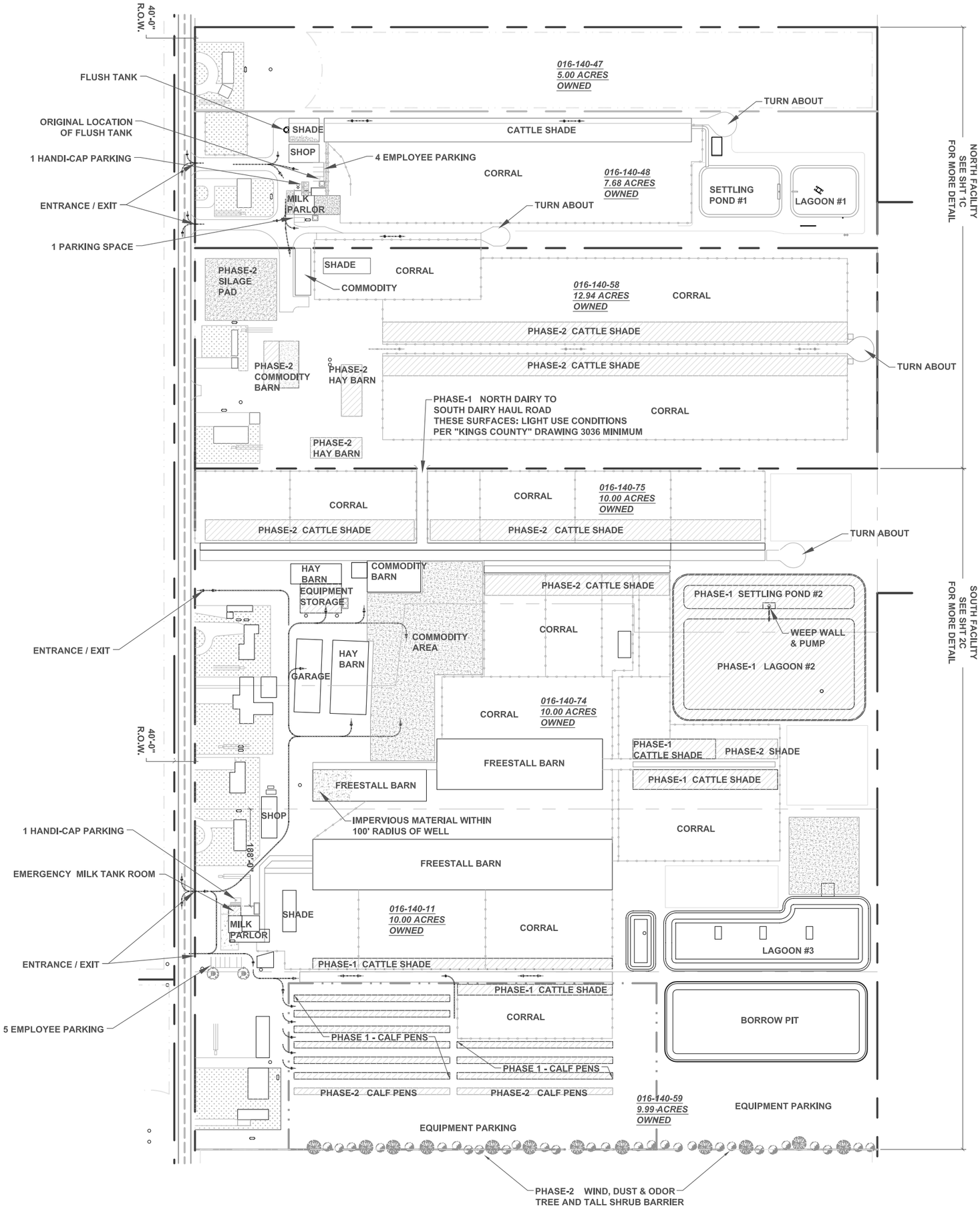
SCALE: 1" = 200'-0"

(SEE SHEETS 1C AND 2C FOR MORE DETAIL ON NORTH AND SOUTH FACILITIES)

LEGEND

- PROPERTY LINE
- STREET LINE
- CROPABLE FIELD
- INGRESS / EGRESS
- DRAINAGE FLOW DIRECTION
- EXISTING EXTERIOR LIGHT
- CONCRETE
- A 2 1/2 NATIONAL STANDARD HOSE THREAD (MALE FITTING) WILL BE ATTACHED TO THE WELL FOR FIRE DEPARTMENT CONNECTION. THE MALE FITTING WILL HAVE A CAP TO PROTECT THE THREADS WHEN NOT IN USE.
- GRASS

LIGHTING - PHASE-2 EXISTING LIGHTS WILL BE REPLACED WITH GE M400A OR M-250 R2 FIXTURES OR EQUAL AS PER TECH REPORT SECTION 10. THE LIGHTS SHALL BE SHROUDED AND THE LIGHT SHALL BE DIRECTED ONLY ON-SITE.



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SITE:
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HANFORD, CA 93230
APN# 016-140-74

LEGAL OWNER:
JOE & MARY SOZINHO
11447 8 1/2 AVE
HANFORD, CA 93230

COMBINED FACILITY SITE PLAN
CUP 09-07
SOZINHO DAIRY

Dwg. Date:	01-21-2010
Scale:	As Shown
Drawn:	D. Hastert
Job:	412-16
Sheet #	3C
of	1
Sheets	
Rev Level	E

Fact Sheet

Using Windbreaks to Manage Odor from Livestock Facilities

Purpose

The purpose of this fact sheet is to help raise awareness of the opportunity to include windbreaks in the management of animal production facility odors. Also discussed are factors important to deciding if a windbreak is appropriate, as well as considerations for design.

Introduction

Over the past few decades, odor management has become an increasingly important issue in the livestock and poultry industries nationwide. The face of rural America has changed as production trends have shifted from small, diverse operations throughout the country to greater concentrations of large scale confined animal operations resulting in larger animal production facilities producing greater quantities of manure. The increased quantity of manure has the potential to produce more intense odor, more frequently and for longer duration.

At the same time, more people from urban areas have moved further out into rural areas. Numerous conflicts and legal actions have arisen throughout the country as a result of concerns about the impact these facilities have on quality of life, health, the environment, real estate values, communities and neighbor relations. The increased potential for litigation and conflict has resulted in a greater effort to manage odor emissions from livestock production facilities.

About Windbreaks

A windbreak is a planting of trees or shrubs designed to modify wind flow. NRCS has promoted windbreaks for the better part of the last century for a number of purposes that range from reducing soil erosion from wind, to managing snow, to protecting farmsteads, to storing carbon. Today people are beginning to explore the potential benefits windbreaks have for managing odor.

USDA NRCS Photo Gallery

Windbreaks serve many purposes. They have commonly been used to protect farmsteads and operations from harsh winter winds.

What is a windbreak?

A windbreak is a planting of trees or shrubs made up of either single or multiple rows of vegetation grown to form a wind barrier.

Windbreaks can…

- *reduce wind erosion*
- *manage snow*
- *protect farmsteads*
- *store carbon*
- *reduce odors*
- *increase habitat*

Stand downwind from a windbreak on a windy day and their benefits are immediately apparent. A windbreak creates a protected zone on the downwind side that extends from 2 to 5 times the height of the vegetation. Reduction in wind speed, to some degree, can extend up to 10 times the height of the vegetation.

About Livestock Odor

In livestock production, odors come primarily from land application areas, livestock operations with buildings or open lots, manure treatment/storage facilities or manure transport systems (Auvermann, 2002). Of these sources, surface application of hog manure is often cited as the biggest offender, followed by poultry and cattle feeding operations.

As the manure breaks down, hundreds of chemicals and chemical compounds are produced that combine to create that familiar manure smell. There is a general consensus that once these gases are emitted, if they travel any distance, they are primarily transported as attachments to dust particles.

'Large quantities of airborne dust are often found in and around animal confinement buildings' (Tyndall, 2000). The dust originates from a number of sources including feed, bedding materials and the animals themselves. Windbreaks have the potential to filter dust and reduce the movement of odor. While the limitations and benefits of using windbreaks to manage odor have yet to be fully evaluated, limited research and anecdotal evidence suggest that windbreaks can be effective tools in managing odors from livestock and poultry operations.

Odor Management Techniques

The animal production industry employs a variety of techniques to manage odor emissions from livestock and poultry facilities. The three main strategies for controlling livestock and poultry odor are:

1. *Prevention of odor through feed and manure additives, solid liquid separation, manure aeration and general good housekeeping*
2. *Capture and destruction of odorous chemicals using chemical scrubbers and biofilters*
3. *Collection, dispersion & dilution of odorous chemicals using windbreaks and shelterbelts (Tyndall, 2000)*

Windbreaks and Odor Management

As wind blows across a windbreak, a number of interactions occur that are beneficial not only for the management of wind and snow, but also for the management of odors. (Figure 1) These **interactions** include:

1. **Creation of zones of protection**
2. **Creation of an area of turbulence**
3. **Filtration**
4. **Redirection of the wind**

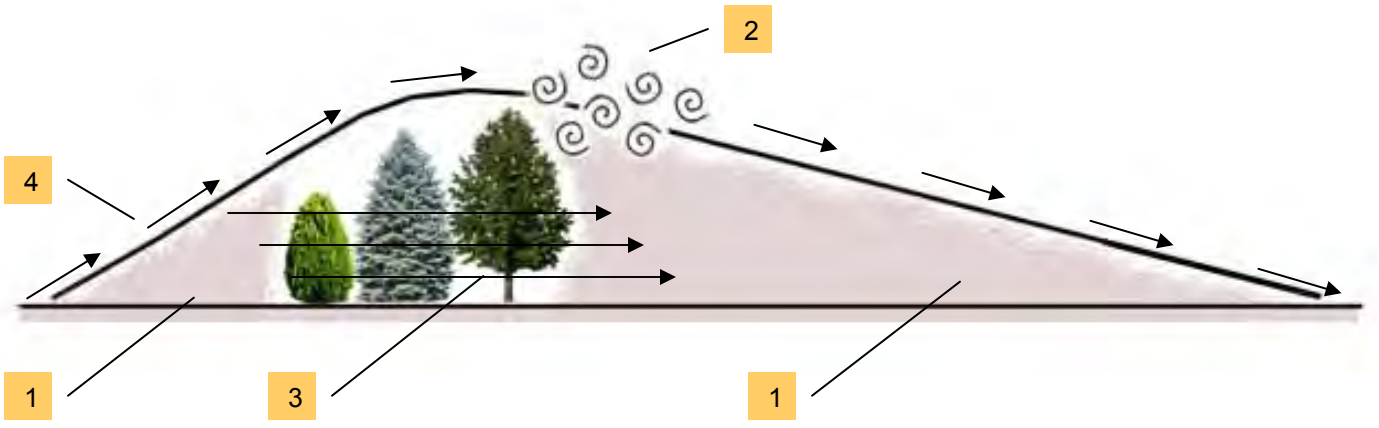

Figure 1 - Wind interacts with a windbreak in a number of ways.

These interactions can be used to manage dust and odors by designing and constructing windbreaks to:

1. Prevent odors and dust particles from being picked up by wind
2. Encourage deposition of dust particles that transport odors
3. Intercept and filter odors and dust particles already airborne
4. Disperse and dilute odors

Zone of Protection

The areas of still air or **zones of protection** created on the leeward side of a windbreak and a small zone of protection on the windward side are the most commonly recognized attributes of a windbreak. On the leeward side, the side downwind of a windbreak, an effective zone of protection extends for a distance of 2 to 5 times the height of the windbreak. A less effective but still significant reduction of wind speeds will exist up to 10 times the height of the windbreak. The zone of protection is most often used to protect farmsteads from strong winter winds. For managing odors, the zone of protection can be used to both **prevent odors from being picked up by the wind** and to encourage **deposition of dust particles** already carrying odors. (Figure 1)

Wind borne dust moving past odor sources such as open manure storage tanks, lagoons, open lots or fields where manure has recently been applied can pick up and transport odorous gases from these surfaces. Windbreaks located upwind of these odor sources would create a zone of protection to help prevent the dust and odors from being picked up and transported. (Figures 2 & 3)

Figure 2 – Open lots can be a source of particulates and odor.

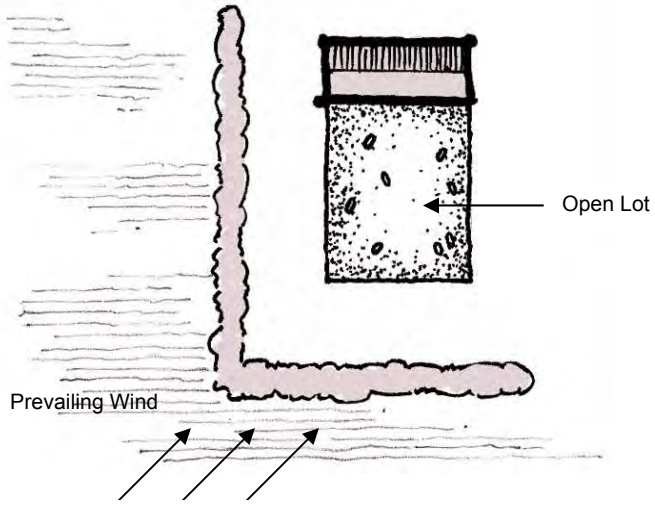

Figure 3 – A windbreak planted upwind of an open lot can reduce the movement of particulates and odor.

The decreased wind speed in the **zone of protection** can also be used to encourage **deposition** of dust particles carrying odors in the same way that windbreaks encourage the deposition of snow. The zone of protection created by a windbreak located downwind of an odor source promotes deposition of dust particles carrying odors. Deposition occurs when heavy dust particles drop out in the slower moving air.

Windbreak as Filter

When wind moves through a windbreak, the windbreak acts as a filter, trapping particulates. The leaves, branches and trunks of the vegetation **intercept and filter** dust and odor. Research suggests that vegetation such as conifers with complex leaf shapes and greater surface area collect particles more efficiently than deciduous vegetation.

Air that passes over dust and odor sources such as solid manure storage or fields where manure has recently been applied, or air that has been exhausted from mechanically vented livestock confinement buildings, will likely pick up dust and odors. Windbreaks can be located downwind of these odor sources and exhaust systems to **intercept** odor particles, **filtering** the air. (Figures 4 & 5)

Figure 4 – A windbreak in central Illinois is planted to filter particulates and odor exhausting from fans.

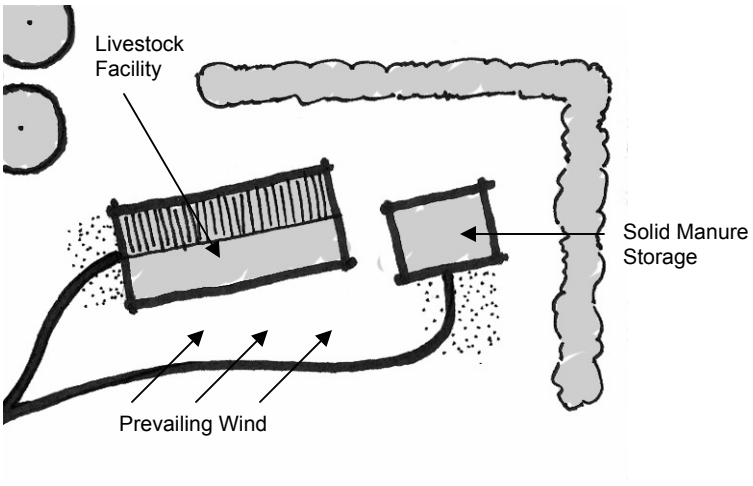

Figure 5 – Windbreak planned to filter and promote deposition of particulates coming from solid manure storage.

In addition, **filtration** can be used to **intercept** dust particles before they pass over a field where manure has been applied. Dust particles that adhere to the surface of leaves and branches are then not available to pick up or transport odors from fields where manure has been applied. At the same time the windbreak filters out dust particles about to blow across a field, a zone of protection is also created on the downwind side where deposition can occur and where reduced wind speeds will not pick up additional odor particles. (Figures 6 & 7)

Figure 6 – Windbreaks can act as filters for wind carrying particulates and odor. In addition, the zone of protection created by the windbreak prevents odors from being picked up and encourages dust particles to drop out downwind of the windbreak.

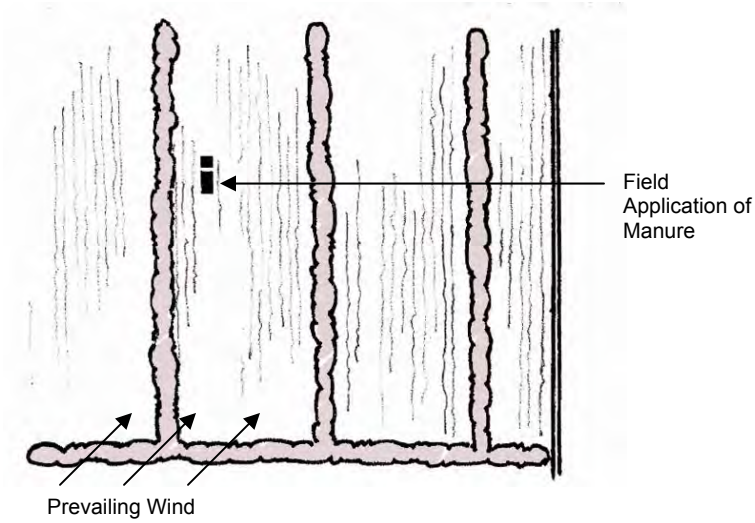

Figure 7 – Windbreak installed to prevent wind erosion. The windbreak also filters air as it moves through the windbreak, encourages deposition of particulates and prevents particulates from being picked up.

Turbulent Zone

In addition to the zone of protection, a turbulent zone is created at the top of a windbreak.

Once odors have been picked up from sources such as a production building or an open manure storage tank, a windbreak can redirect the wind up and over the trees, lifting dust and odors up into the lower atmosphere above people and residences where they would be regarded as offensive. At the same time, the turbulent zone at the peak of the windbreak has the potential to **dilute** and **disperse** odors, reducing their intensity and concentration. (Figure 8)

As wind is pushed up over the windbreak, air compresses and then expands while passing the crest of the windbreak creating an area of turbulent air. (Figure 1) Although not conclusive, the turbulence causes some of the air stream to mix into adjacent layers of air in the lower atmosphere allowing for some odor dispersion. Engineering models have shown that the turbulence contributes to a slower release of particulates into the downwind air stream diluting the odor plume.

Figure 8 – The turbulent zone of a windbreak has the potential to dilute and disperse odors picked up from sources such as manure storage tanks.

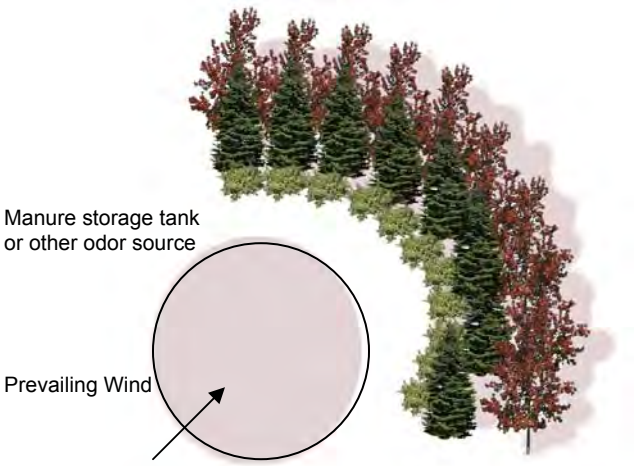

Figure 9 – Windbreak directs air stream into lower atmosphere and turbulent zone, diluting and dispersing odors.

Wedge Shaped Windbreak

Some research has indicated that wedge shaped windbreaks, with the tip of the wedge facing into the prevailing wind, can push airstreams higher into the atmosphere. (Tyndall, 2000)

A row or rows of shrubs, conifers and deciduous trees planted in combination would create a wedge shaped windbreak that would grow quickly, have branches and leaves at ground level and reach great heights.

Key Considerations for Windbreak Design

Understanding the benefits and limitations of using windbreaks to manage odor from animal manure is necessary to determine whether or not a windbreak is appropriate for a given odor management need or management style.

Benefits
For many, windbreaks are a familiar technology. For years NRCS has promoted and landowners have grown windbreaks. People know what they are. Many know how to establish and how to maintain them. Once established, they require regular maintenance to manage grass and weeds, monitor plant health and perform renovation when necessary. However, maintenance is generally minimal.

In addition, one windbreak has the potential to offer multiple benefits. At the same time a windbreak is working to manage odor from livestock facilities, the windbreak can also be working to conserve energy, reduce soil erosion, manage snow, provide shelter for livestock, habitat for wildlife and create visual screens.

As a windbreak screens unsightly facilities, appearance of the operation can be improved by softening buildings and visually breaking up the operation. The aesthetic benefit can be one of the most important benefits of a windbreak. Improved appearance has the potential to help maintain and improve relations with nearby residents.

Finally, compared to other technologies, windbreaks can be a low cost component of an odor management plan.

Limitations
Windbreaks alone will not completely prevent odor problems associated with animal manure. Depending on the odor management needs of a particular site, a windbreak may need to be used in conjunction with other odor management tools such as good housekeeping, food & manure additives, chemical scrubbers and bio-filters.

Another limitation of windbreaks is the time required for a windbreak to become fully functional. Windbreaks designed according to NRCS standards are considered to be at a fully functional height at 20 years. However, partial closure is achieved earlier and some benefit is realized before that point. Windbreaks that include fast growing deciduous trees can be functioning within as little as 5-10 years and reap aesthetic and screening benefits within just a few years. The public relations benefit of these windbreaks can occur immediately.

Planning Considerations

Once the decision has been made to use windbreaks, the following considerations will help determine where windbreaks could be located to effectively manage odor.

- Where are odors coming from?
- When are odors most likely to occur?
- Where are people located for whom odor would be a concern?
- What is the prevailing wind direction?
- From what direction does the wind blow during time(s) of year when odors are likely to be an issue?

The information is then used to identify locations where windbreaks could be located.

Potential locations should then be evaluated against other criteria such as snow deposition, location of utilities and other on-site infrastructure, ventilation requirements, movement of vehicles, aesthetics and possible future development.

The following section outlines design considerations important for locating a windbreak for odor management and selecting vegetation, as well as other general considerations.

Design Considerations

Prevailing Wind Direction

Prevailing wind direction is important in the design of any windbreak. Not only necessary to understanding the movement of odors, knowledge of the prevailing wind direction is also important for managing snow deposition and building ventilation. For accurate local information on prevailing winds in Illinois, refer to the Illinois State Climatologist Office's website - www.sws.uiuc.edu/atmos/statecli/Roses/wind_climatology.htm.

Snow Deposition and Roadways

Windbreaks should be located so snow deposited near them does not interfere with nearby roadways or buildings, inhibit onsite movement of vehicles, nor pose health or safety problems.

Identifying where snow will accumulate is important. Most of the snow deposited near a windbreak is deposited on the leeward side, within a distance that is 1 to 4 times the height of the windbreak. Snow also accumulates on the windward side for a distance of 1 to 2 times the height of the windbreak.

In addition, deep snowdrifts form closer to dense windbreaks. As windbreaks become less dense, snow settles progressively farther away and is distributed more evenly.

Drainage patterns of snowmelt must be taken into consideration. Drainage of snowmelt from the windbreak should not flow into the livestock area or cause erosion.

Building Ventilation

Air movement around buildings should be maintained for animal and worker health and to allow ventilation systems to work properly.

For mechanically ventilated systems, trees can be planted relatively close. The closer the vegetation is to the odor source the more effectively it reduces odors. However, the health of the trees, prevention of back pressure on fans and snow deposition must all be taken into consideration when determining the distance between the ventilation system and the windbreak.

With mechanically ventilated systems, the health of the trees is generally of primary concern. Exhaust from fans increases transpiration in vegetation making them vulnerable to desiccation. In addition, accumulation of debris and the gases exhausted by fans creates a harsh environment for vegetation to grow.

For naturally ventilated systems, the concern is typically with prevailing summer winds. Trees planted in the path of prevailing summer winds may interfere with needed summer air flows. Many producers prefer no vegetation on the side of the building from which prevailing summer winds come.

Root Systems

There is some concern that root systems of vegetation may damage artificial or natural liners of earthen pits or lagoons, resulting in leakage into the surrounding soil and waterways. If planting near such structures, the rooting habits of the species should be considered.

Likewise, location of subsurface drains should be considered during planning. If planting near subsurface drains is unavoidable, non-perforated conduit should be installed in the area where tree planting is planned.

Where concerns exist about competition between a windbreak and an adjacent field for water and nutrients a root plow can be used to sever roots and reduce competition. Root pruning will impact tree growth and must be done with care. Root pruning should be done at the drip line to minimize negative impacts and only one side should be pruned in a given year. Wait until the tree has reached the desired height before root pruning.

Vegetation

Field and farm windbreaks most commonly use conifers. Conifers are trees and shrubs bearing needles and cones and are mostly evergreen. Conifers have a large leaf surface area and generally maintain their branches all the way to the ground. Conifers create the densest windbreaks for blocking winds. These characteristics are useful for capturing particulates and for blocking winds that can pick up odors. However as a group, conifers tend to be slower growing than deciduous trees. The species favored by producers using windbreaks to manage odor are often fast growing deciduous trees such as hybrid willows, poplars and maples.

Deciduous trees, trees that lose their leaves in the winter, tend to grow faster and reach greater heights than conifers. To capture the benefits of conifers, deciduous trees and shrubs, both types of trees as well as shrubs may be planted in combination. Shrubs also tend to grow quickly.

- Tree and shrub species selected must be adapted to the soils, climate and site conditions. For information on species selection refer to the Conservation Tree/Shrub Suitability Index in the Natural Resources Conservation Service electronic Field Office Technical Guide - http://efotg.nrcs.usda.gov/treemenuFS.aspx. For additional information on vegetation characteristics refer to USDA's PLANTS Database at http://plants.usda.gov.

- Diversity of species in a windbreak lessens the negative impact of potential disease or pest outbreaks - problems which can devastate a windbreak composed of only one species. However, trees should be spaced so deciduous trees don't overtop conifers. Deciduous and coniferous trees should not be planted in the same row.

- Maximize particulate trapping by selecting species with high leaf surface roughness (leaf hairs, leaf veins, and small leaf size), complex leaf shapes, large leaf circumference to area ratios and medium to rapid growth rates.

Techniques are available to reduce the amount of time needed to establish a functioning windbreak.

- Supplemental watering and control of competition from grasses and weeds are critical for fast establishment and growth. Mulch, such as landscape fabric, herbicides and mowing are commonly used to control grass and weeds. Mowers can cause considerable damage and mortality to seedlings. Care should be taken if mowing is used.

- Fast growing species may be selected, such as hybrid poplars, willow and some maples. However, producers planting fast growing species need to be aware that their windbreaks will likely require replacement or renovation in 10-20 years. Faster growing tree species are often shorter lived.

- Trees within a row can be planted on a tighter spacing to achieve quicker results. However, thinning and removal of trees will be necessary as the windbreak matures, to prevent trees from dropping their lower limbs and creating holes in the windbreak.

- Larger stock can be used, such as air-root pruned potted planting stock. For more information on air-root pruned potted stock, see "Container grown" planting stock in NRCS practice standard TREE/SHRUB ESTABLISHMENT (612). A complete copy of the standard can be found at http://efotg.nrcs.usda.gov/treemenuFS.aspx.

- Poultry facilities using windbreaks to filter exhaust from fans commonly plant larger stock (8-10') to improve success rates. Seedlings often succumb to desiccation and the accumulation of debris & ammonia exhausted from buildings.

- Staggering tree spacing, so the trees of one row will be planted opposite the openings in the adjacent row, will decrease the time needed for a windbreak to be effective.

Density

All windbreaks impact airflow. Windbreaks promote deposition of dust particles, uplifting and dispersion of odors and filtering of wind. Higher density windbreaks are planted to encourage uplift as well as dispersion and deposition of dust particles. Lower density windbreaks are planted to encourage filtering by allowing more wind to pass through.

Factors that determine density include:

- Tree species
- Growth rates
- Spacing between trees
- Number of rows planted
- Rows that are staggered or are not staggered
- Time of year (Deciduous vegetation)

All of these factors can be manipulated to make a windbreak more or less dense.

Enhancing Aesthetics

Improved aesthetics and improved neighbor relations are often some of the most important benefits windbreaks provide. Windbreaks visually impact the overall rural landscape in addition to improving the appearance of the individual farmstead.

Trees add diversity and visual interest to the landscape and become part of the overall landscape pattern or structure. Vegetation can help soften and visually break up buildings, making them appear smaller and less industrial, as well as screen them from view.

Closer up, characteristics such as the form, color, texture and layout shape the windbreaks appearance and aesthetic. A curvilinear layout can help to blend a windbreak into the landscape. Deciduous trees, coniferous trees, and shrubs planted in the same planting have a different appearance and different texture than a windbreak planted with only coniferous trees or deciduous trees. Showy flowers and brilliant fall foliage add interest during the spring, summer and fall. Colorful fruit and the green of coniferous trees add color to the winter landscape.

Habitat Considerations

Windbreaks enhance wildlife habitat by providing shelter and food. If transfer of disease between wildlife and confined livestock, particularly poultry, is a concern, the risks and benefits of the windbreak need to be evaluated.

An argument exists that windbreaks have the potential to reduce airborne transmission of disease from one facility to another by capturing and preventing pathogens from moving downwind. In addition, there have been instances where raptors have taken up residence in windbreaks helping to keep down rodent populations.

Selecting vegetation that does not provide food or shelter preferred by wildlife may be one way to minimize the potential of disease transfer while realizing the benefits of a windbreak.

NRCS Windbreak Standard 380

For more detailed information on windbreak design refer to NRCS Windbreak/Shelterbelt Establishment Standard (380) and the NRCS Illinois Windbreak Manual. Many of the design considerations mentioned above are discussed in more detail in the standard. All standards referenced in the document are available at http://efotg.nrcs.usda.gov/treemenuFS.aspx.

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FINAL
ENVIRONMENTAL IMPACT REPORT

for the

SOZINHO DAIRY EXPANSION

SCH #20100307
CUP 09-07

Kings County Community Development Agency
1400 West Lacey Boulevard
Hanford, California 93230

FINAL ENVIRONMENTAL IMPACT REPORT
SOZINHO DAIRY EXPANSION

SCH #20100307
Cup 09-07

Prepared for:

Kings County Community Development Agency
1400 West Lacey Boulevard
Hanford, California 93230
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Quad Knopf
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July 2012

090249

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FINAL ENVIRONMENTAL IMPACT REPORT SOZINHO DAIRY EXPANSION

SECTION ONE

INTRODUCTION

SECTION ONE – INTRODUCTION

CEQA Process

A Notice of Preparation (NOP) for the subject project was circulated on May 6, 2010. The NOP informed agencies of the County's intent to prepare an environmental impact report (EIR). The 30-day review period for the NOP ended on June 4, 2010.

A Draft EIR and a Notice of Intent to Adopt an Environmental Impact Report (NOI) for Conditional Use Permit No. 09-07 was delivered to the State Clearinghouse and the Kings County Clerk-Recorder's Office on May 4, 2012. The NOI was mailed and emailed to agencies, organizations and interested individuals on May 4, 2012 for a 45-day public review period. The NOI was published in the Hanford Sentinel newspaper on May 4, 2012, notifying the public of the availability of the Draft EIR and soliciting comments thereon. The 45-day public review period for the Draft EIR ended on June 18, 2012.

The Final EIR consists of (1) the Draft EIR and appendices; (2) any comments received concerning the Draft EIR; and (3) responses to these comments.

Responses to comments are directed to the disposition of significant environmental issues that are raised in the comments, as set forth in Section 15088(b) of the State Guidelines. When reviewing the comments and in developing responses thereto, every effort is made to compare the comment to the information contained in the Draft EIR. In most instances, responses are not provided to comments on non-environmental aspects of the proposed project. For comments not directed to significant environmental issues or in which the commenter simply notes agreement with the EIR, the responses indicate that the comment has been "noted and incorporated into the EIR".

CEQA requires that a Final EIR be prepared, certified and independently considered by the decision-making body of the County prior to taking action on the project. The Final EIR provides the County with an opportunity to respond to comments on the Draft EIR and to incorporate any changes necessary to clarify and/or amplify information contained in the Draft EIR. This Final EIR will be available to any commenters for at least ten (10) days prior to its certification.

SECTION TWO

SUMMARY OF DRAFT EIR

SECTION TWO - SUMMARY OF DRAFT ENVIRONMENTAL IMPACT REPORT

Project Description

The existing Sozinho Dairy is currently milking 940 Holstein milk cows with a support stock of 710 for a total herd size of 1,650 head. The owner/applicant has applied for a conditional use permit (CUP) to increase the dairy to 1,650 Holstein milk cows and 3,466 support stock for a total herd size of 5,116 head. To accommodate the increased number of cows the dairy facility site will be expanded from 46.8 acres to 60.6 acres. The project site is located at 11447 8 ½ Avenue between Hanford-Armona Road and Houston Avenue (see Figures ES-1 and ES-2).

The proposed actions for which this Environmental Impact Report (EIR) is being prepared include:

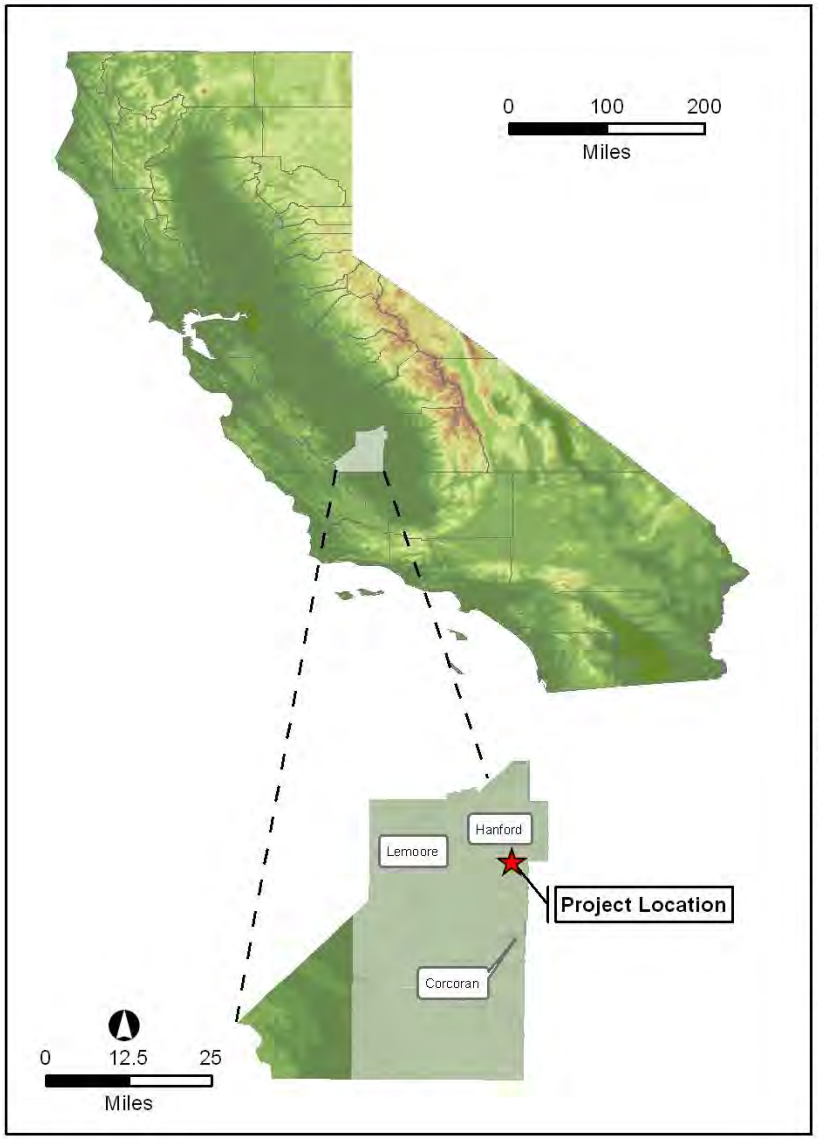
- Approval by Kings County of a Conditional Use Permit (CUP 09-07);
- Acceptance by the California Regional Water Quality Control Board, Central Valley Region of a Report of Waste Discharge;
- Issuance of an Authority to Construct (ATC) and Permit to Operate (PTO) by the San Joaquin Valley Air Pollution Control District; and,
- Issuance of a Dairy Permit by the California Department of Food and Agriculture (CDFA).

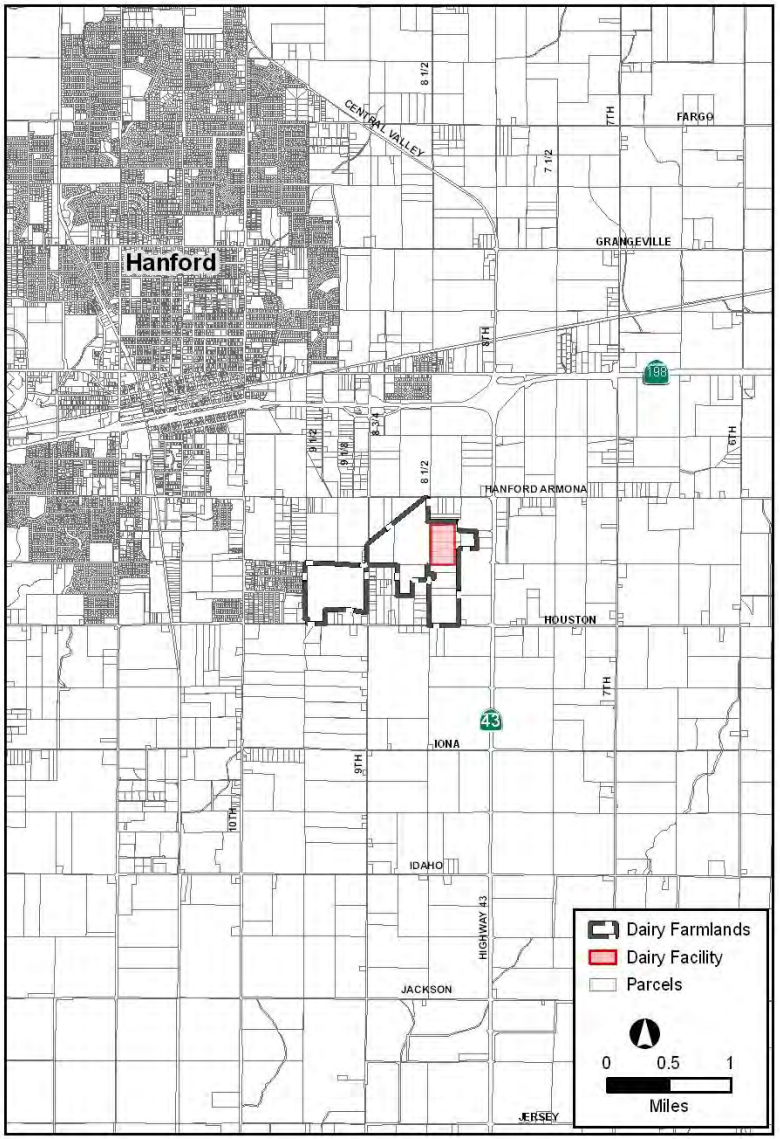
Project Objective

It is the objective of the project to expand and operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA.

Summary of Impacts and Mitigation Measures

Section 15123(b)(1) of the *Guidelines for Implementation of the California Environmental Quality Act* (State CEQA Guidelines) provides that the summary shall identify each potentially significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Table ES-1, Summary of Potentially Significant Impacts, Mitigation Measures, and Mitigation Monitoring Agencies, at the end of this Executive Summary, and in Table ES-2, Summary of Impacts Which Remain Significant After Mitigation.

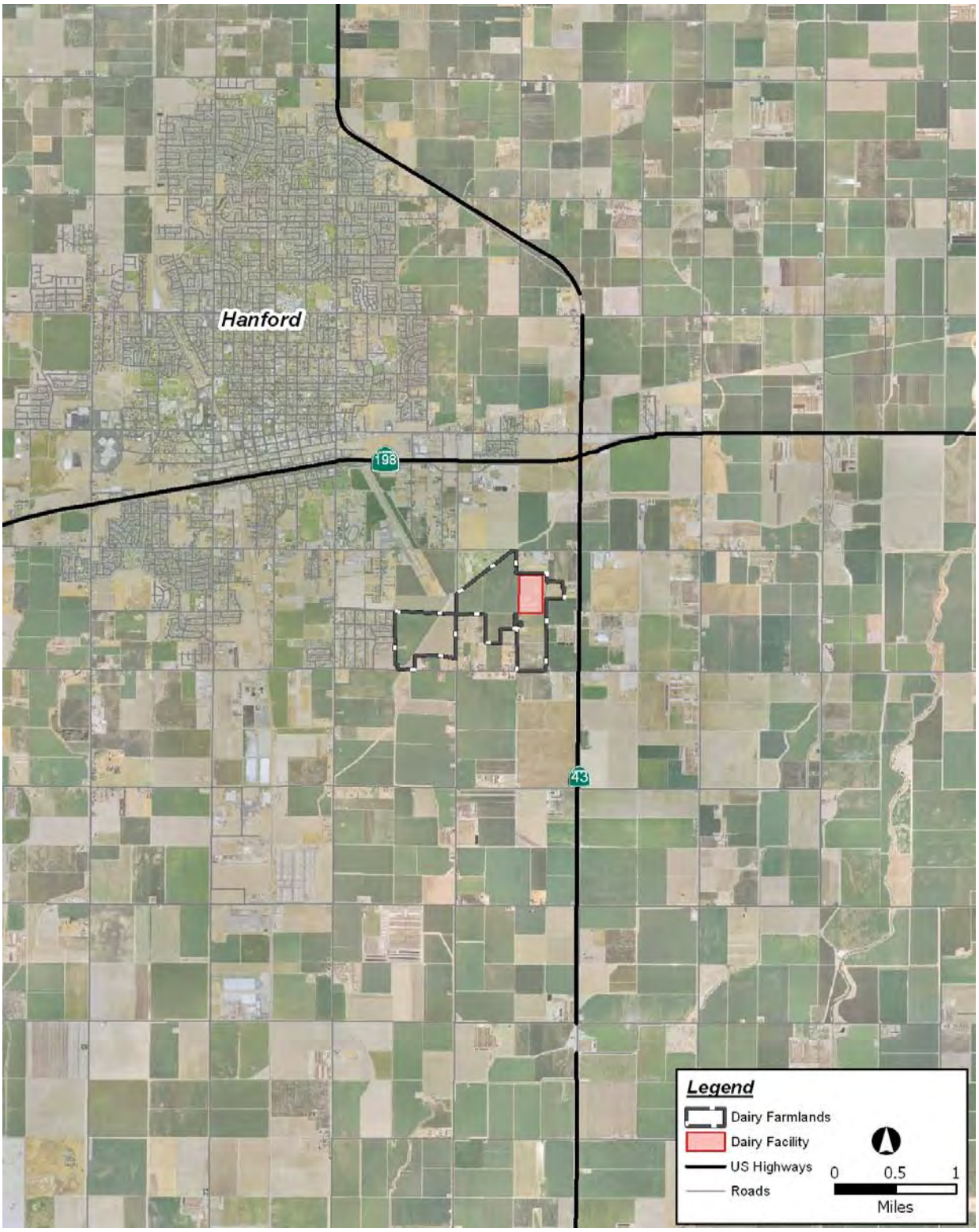




Quad Knopf

SOZINHO DAIRY REGIONAL LOCATION

FIGURE
ES – 1



Quad Knopf	SOZINHO DAIRY PROJECT LOCATION	Figure ES – 2

Potential Areas of Controversy and Issues to be Resolved

The following issues are most likely to produce controversy in reviewing and considering the proposed project:

- Air Quality/Health Risks
- Greenhouse Gases
- Land Use and Planning
- Alternatives Analysis
- Cumulative Impacts

Alternatives to the Proposed Project

Section 15126.6 of the *State CEQA Guidelines* requires the EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the project, and to evaluate the comparative merits of the alternatives. Alternatives that would reduce or avoid significant impacts represent environmentally superior alternatives to the proposed project. However, if the environmentally superior alternative is the "no project" alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.

The EIR evaluates the following alternatives:

- No Project – With this alternative the existing dairy facilities would not be expanded. This alternative does not achieve the basic project objective, although there would be no increase in dairy-related air quality, health risks, and greenhouse gases and water quality and land use impacts would be reduced. Impacts associated with contamination of row-crop or other agriculture would continue;

- Reduced Herd Size Alternative – Reduction of herd size and corresponding dairy facilities would effect roughly proportional reduction in air quality and health risks, although not to a less than significant level. This alternative would also decrease greenhouse gas emissions, lower the potential for groundwater degradation, and eliminate some of the land use violations.

Based upon the analysis contained and documented in this EIR, the No-Project Alternative is environmentally superior. Apart from this alternative, an assumed Reduced Herd Size Alternative (1,366 milk cows and 2,364 support stock) is, based upon the analysis contained and documented in this EIR, determined to be environmentally superior, although it only partially achieves the project objective and does not eliminate all significant impacts.

Impacts Summarization

Table ES-1 is a summary of impacts deemed not to be significant and of impacts that can be mitigated to less than significant along with the mitigation measures. Table ES-1 also notes the level of significance after mitigation, and the mitigation monitoring agency. Table ES-2 summarizes the impacts which remain significant after mitigation.

Chapter 7 presents the mitigation monitoring and reporting program. The mitigation monitoring and reporting program, to be considered by the Kings County Planning Commission at the time the EIR is certified, summarizes the environmental issues identified in the EIR, the mitigation measures required to reduce each potentially significant impact to less than significant, the person or agency responsible for implementing the measures and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.

Table ES-1
Summary of Potentially Significant Impacts and Mitigation Measures
Mitigation Monitoring and Reporting Program

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
AIR QUALITY						
3.1.1	**Toxic Air Emissions Health Risk**	**3-29 to 3-31**	**3.1.1**	The owner/applicant shall implement the following measures: ▪ Cattle Housing Dust ($PM_{2.5}$) 1. Paved feedlanes, where present shall be a width of at least 8 feet along the corral side of the feedlane fence for milk and dry cows and at least 6 feet along the corral side of the feedlane for heifers; and 2. Scrape, vacuum, or flush concrete lanes in corrals at least once every day for mature cows and every 7 days for support stock. ▪ Dairy Equipment and Truck Exhaust Emissions - Nitrogen Oxide (NOx) 1. The idling time of all equipment used at the site shall not exceed five minutes; 2. As much as possible, alternative fueled or catalyst-equipped diesel equipment shall be used at the dairy site; 3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when	**Significant**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				available provided they are not run via a portable generator; and 4. Employees shall be encouraged to carpool-travel to and from the dairy site. ▪ Volatile Organic Compounds (VOC), Ammonia (NH_3) and Hydrogen Sulfide (H_2S) Emissions: 1. Remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every seven days.		
3.1.2	**Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts**	**3-31 to 3-32**	**None**	None are required; all feasible mitigation measures have been incorporated in Sozinho Dairy Fugitive Dust Emission Control Plan.	**Less than Significant**	**None**
3.1.3	**Construction Emissions Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Nitrogen Oxide (NOx), Sulfur Dioxide (SO_2)**	**3-32**	**None**	None are required; the project related emissions are less than significant.	**Less than Significant**	**None**
3.1.4	**Operational Emission of Criteria Pollutants, Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)**	**3-33 to 3-35**	**None**	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on pages 3-58 - 3-60.	**Significant**	**None**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
3.1.5	**Operational Emission of Criteria Pollutants, Volatile Organic Compound (VOC)**	**3-35 to 3-36**	**3.1.5**	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on pages 3-58 - 3-60.	**Significant**	**None**
3.1.6	**Operational Emission of Criteria Pollutants, Nitrogen Oxide (NOx)**	**3-36 to 3-37**	**3.1.6**	The following mitigation measures are required to further reduce NOx emissions: 1. The idling time of all equipment used at the site shall not exceed five minutes; 2. As much as possible, alternative fueled or catalyst-equipped diesel construction equipment shall be used at the dairy site; 3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when available provided they are not run via a portable generator; and 4. Employees will be encouraged to carpool-travel to and from the dairy site.	***Project level:*** **Less than Significant** ***Regional level:*** **Cumulatively Significant, Considerable and Unavoidable**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**
3.1.7	**Methane (CH_4) Emissions**	**3-38**	**None**	No additional measures are required; all feasible control measures have been incorporated in SJVAPCD's Rule 4570 (see Appendix D), and in Dairy Element Policies DE 4.1s through DE 4.2b (see Appendix F).	**Significant**	**None**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
3.1.8	**Ammonia (NH_3) Emissions**	**3-38 to 3-39**	**None**	No additional measures are required; all feasible control measures have been incorporated in SJVAPCD's Rule 4570 (see Appendix D), and in Dairy Element Policies DE 4.1a through DE 4.2b (see Appendix F).	**Significant**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**
3.1.9	**Odor Emissions**	**3-39 to 3-42**	**3.1.9**	No additional measures are required; all feasible control measures have been incorporated in the Dairy Element Policies DE 4.1a, DE 4.1b, DE 4.1d and DE 5.1b(see Appendix D), in the SJVAPCD's Rule 4550 and 4570 (see Appendix F).	**Significant**	**None**
3.1.10	**Local Carbon Monoxide (CO) Concentrations**	**3-43**	**None**	None are required.	**Less than Significant**	**None**
3.1.11	**Ambient Air Quality**	**3-43 to 3-44**	**None**	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on page 3-58 - 3-60.	**Significant**	**None**
GREENHOUSE GASES						
3.2.1	**Greenhouse Gases**	**3-48 to 3-52**	**None**	No project level mitigation measures are required.	**Less than Significant**	**None**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
LAND USE AND PLANNING						
3.3.1	**Separation of Dairy Facilities by ¼ Mile**	**3-54**	**3.3.1**	No additional measures are required; all feasible control measures have been included in Mitigation Measure #3.3.2 and the compliance with the required mitigation measures required in the Kings County Dairy Element.	**Less than Significant**	▪ **None**
3.3.2	**Residences Within ¼ Mile of Dairy Facility**	**3-55 to 3-56**	**3.3.2**	The owner/operator shall install and maintain a downwind windbreak shelterbelt along the east and south boundary of the project site. This windbreak consisting of evergreen shrubs and trees, to meet the USDA National Research Conservation Service (NRCS) Windbreak Shelterbelt Establishment Standard (380)	**Significant**	▪ **Community Development Agency**
GREENHOUSE GASES						
5.2	**Greenhouse Gases**	**5-7 to 5-11**	**5.2**	The State of California Climate Action Team has listed various measures which will impact GHG emissions; other measures have been suggested by the SJVAPCD. The following mitigation measures, commonly recommended to reduce VOC's, are suggested, although there is no available data on which to base an analysis of the efficiency of their implementation in greenhouse gas emissions reduction: 1. Convert the milking barn facilities to be energy efficient with respect to space heating/cooling and building insulation, install energy efficient heating/cooling equipment there, and use fluorescent and/or LED lighting throughout the facility;	**Cumulatively Significant, Considerable and Unavoidable**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				2. Maintain an impervious covering on silage and manure piles year-round; 3. Include dietary aids (e.g., cottonseed) in feed rations; 4. Incorporate solid manure into fields within two hours after application; 5. Feed according to National Research Council (NRC) guidelines; 6. Remove feed at least once every 14 days from areas where animals stand to eat; 7. Feed or dispose of rations within 48 hours of grinding and mixing; 8. Store grain in a weatherproof storage structure from October through May; 9. Cover horizontal surfaces of silage piles, except areas where feed is being removed; 10. Flush or hose the milk parlor immediately prior to, immediately after, or during each milking; 11. Flush freestalls more frequently than the milking schedule; 12. Inspect water pipes and troughs and repair leaks at least once every 14 days;		

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				13. Clean corrals at least once between April and July and at least once between October the December; 14. Manage corrals such that animal waste depth in corrals does not exceed 12 inches, except for in-corral mounding; 15. Maintain surfaces of corrals and dry lots so that puddles do not form and remain more than 48 hours; 16. Harrow, rake, or scrape pens sufficiently to maintain a dry surface; 17. Install corral shade structures uphill of any slope; 18. Not allow liquid animal waste to stand in the field more than 24 hours after irrigation; 19. Apply no solid animal waste with a moisture content of 50% or more; 20. Remove animal waste from the dairy facility within seventy-two (72) hours of removal from the pens or corrals; 21. Cover dry animal waste piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed 24 hours per event, when wind events remove the covering;		

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				22. Remove solids from the waste system with a solid separator system prior to the waste entering the lagoon; 23. Choose, to the extent feasible and practical, recycled, low-carbon and otherwise climate-friendly building materials such as salvaged and recycled-content materials for buildings, hard surfaces and non-plant landscaping; and 24. Minimize, reuse and recycle construction-related waste.		

Table ES-2
Summary of Impacts Which Remain Significant After Mitigation

Air Quality		
3.1.1	Toxic Air Emissions Health Risk	Significant
3.1.4	Operational Emission of Criteria Pollutants, $PM_{2.5}$	Significant
3.1.5	Operational Emission of Criteria Pollutants, Volatile Organic Compounds (VOCs)	Significant
3.1.6	Operational Emission of Criteria Pollutants, Nitrogen Oxide (NOx)	Cumulatively Significant, Considerable and Unavoidable
3.1.7	Methane Emissions	Significant
3.1.8	Ammonia Emissions	Significant
3.1.9	Odor Emissions	Significant
3.1.11	Ambient Air Quality	Significant
Greenhouse Gases		
5.2	Greenhouse Gases	Cumulatively Significant, Considerable and Unavoidable

SECTION THREE

COMMENTS, RESPONSES, AND CORRECTIONS TO DEIR

SECTION THREE – COMMENTS, RESPONSES, AND CORRECTIONS TO THE DRAFT EIR

The Draft EIR was mailed to agencies, organizations and interested individuals on May 4, 2012 to begin the 45-day review period.

On May 25, 2012 the Kings County Community Development Agency (CDA) received a comment on the Sozinho Dairy Expansion Draft EIR from the Native American Heritage Commission, dated May 21, 2012. A copy of this letter was also filed with the State of California Governor's Office of Planning and Research, State Clearinghouse and Planning (State Clearinghouse) on May 29, 2012.

The following pages contain copies of the State Clearinghouse letter acknowledging that the CDA has complied with California Environmental Quality Act (CEQA) review requirements for the Sozinho Dairy Expansion Draft EIR (page 3-2), a copy of the Native American Heritage Commission's comment letter on the Draft EIR (Page 3-4), and the response to comments prepared by CDA (page 3-8)

The Project Description on Page ES-1 of the Draft EIR contained a bulleted list of the proposed actions for which the Environmental Impact Report (EIR) was being prepared. The last bullet erroneously listed the issuance of a Kings County Health "Permit to Operate". The Environmental Health Services (EHS) Division of the Kings County Health Department confirmed on June 28, 2012, that EHS does not issue a "Permit to Operate" in relation to an expansion of an existing dairy. In order to correct this error the following correction is being made to the bulleted list (of the proposed actions for which the Environmental Impact Report (EIR) was being prepared) on Page ES-1 of the Draft EIR:

"The proposed actions for which this Environmental Impact Report (EIR) is being prepared include:

- Approval by Kings County of a Conditional Use Permit (CUP 09-07);
- Acceptance by the California Regional Water Quality Control Board, Central Valley Region of a Report of Waste Discharge;
- Issuance of an Authority to Construct (ATC) and Permit to Operate (PTO) by the San Joaquin Valley Air Pollution Control District;
- Issuance of a Dairy Permit by the California Department of Food and Agriculture (CDFA); and
- ~~Issuance of a Kings County Environmental Health "Permit to Operate".~~"

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

June 18, 2012

RECEIVED
JUN 20 2012
KINGS COUNTY COMMUNITY
DEVELOPMENT AGENCY

Sandy Roper
Kings County Community Development Agency
1400 W. Lacey Boulevard
Hanford, CA 93230

Subject: Conditional Use Permit No. 09-07 (Sozinho)
SCH#: 2010051016

Dear Sandy Roper:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 15, 2012, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

SCH#	2010051016
Project Title	Conditional Use Permit No. 09-07 (Sozinho)
Lead Agency	Kings County
Type	EIR Draft EIR
Description	The proposed project consists of expanding and operating an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA. The owner/operator of the Sozinho Dairy is currently permitted for a 940 Holstein milk cow dairy and has applied to Kings County for CUP No. 09-07 to expand the number of Holstein milk cows to 1,650 head. The expansion involves two phases. The first phase includes shade barns, calf pens, calf shade barns, a lagoon, a settling pond, lighting replacements, and equipment storage. The second phase includes shade barns, calf pens, hay barns, a concrete silage pad, and a commodity barn. The dairy facility is located on APNs 016-150-011, 047, 048, 058, 059, 074, & 075.

Lead Agency Contact

Name	Sandy Roper		
Agency	Kings County Community Development Agency		
Phone	559 852 2685	**Fax**	
email			
Address	1400 W. Lacey Boulevard		
City	Hanford	**State** CA	**Zip** 93230

Project Location

County	Kings				
City	Hanford				
Region					
Lat / Long	36° 18' 22.5" N / 119° 36' 35.8" W				
Cross Streets	Hanford Armona Road and 8 1/2 Avenue, Houston Ave				
Parcel No.	016-140-011, 047-, 048, 058, 059				
Township	19S	**Range** 22E	**Section** 5	**Base**	MDB&M

Proximity to:

Highways	SR 43 & 198
Airports	Hanford Municipal
Railways	San Joaquin Valley
Waterways	No
Schools	Kit Carson
Land Use	Commercial Dairy/General Agricultural-20 Acre Minimum/General Agriculture

Project Issues Air Quality; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 6; Department of Food and Agriculture; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission

Date Received 05/02/2012 **Start of Review** 05/02/2012 **End of Review** 06/15/2012

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov
Note: Blanks in data fields result from insufficient information provided by lead agency.

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

6-15-12 Clear

RECEIVED
MAY 29 2012
STATE CLEARING HOUSE

May 21, 2012

Ms. Sandy Roper, Project Planner
Kings County Community Development Agency
1400 West Lacey Boulevard
Hanford, CA 93230

Re: SCH#2010051016; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the "**Conditional Use Permit No. 09-07 (Sozinho) (Dairy Facility) Project;**" located in the Hanford Area; Kings County, California.

Dear Ms. Roper:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC did conduct a Sacred Lands File (SLF) search within the 'area of potential effect (APE) and Native American cultural resources were not identified.

The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American

contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contacts
Kings County
May 21, 2012

Santa Rosa Rancheria
Rueben Barrios, Chairperson
P.O. Box 8 — Tache
Lemoore , CA 93245 — Tachi
(559) 924-1278 — Yokut
(559) 924-3583 Fax

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokuts
Salinas , CA 93906 — Mono
kwood8934@aol.com — Wuksache
831-443-9702

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 — Yokuts
Porterville , CA 93258
chairman@tulerivertribe-nsn.
(559) 781-4271
(559) 781-4610 FAX

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8 — Tachi
Lemoore , CA 93245 — Tache
(559) 924-1278 - Ext. 5 — Yokut
(559) 924-3583 - FAX

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 — Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue — Foothill Yokuts
Clovis , CA 93612-2211 — Choinumni
(559) 307-6430

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2010051016; CEQA Notice of Completion. drat Environmental Impact Report (DEIR) for the Conditional Use Permit No. 09-07 (Sozinho) (Dairy Facility) Project; located in the Hanford Area; Kings County, California.

In compliance with the Dairy Element the owner/operator prepared and submitted the Sozinho Dairy Technical Report to the Kings County Community Development Agency on August 31, 2009 (a copy of this report was enclosed as Appendix H in the Draft EIR). Contained in the technical report was a *Cultural Resources Evaluation by the California Resources Information System* (see page 3-9). As part of the cultural resources evaluation, the Native American Heritage Commission (NAHC) was advised of the proposed project. The dairy owner/operator and agent Western Dairy Design Associates, Inc., noted in their cultural resources evaluation that:

> *All the Native American individuals/organizations on list which the NAHC provided were contacted by letter, FAX or telephone. The chairman of the Kings River Choinumni Farm Tribe has responded by telephone, and the cultural resources director of the Table Mountain Rancheria sent a letter, both saying that the dairy is outside their tribes' area.*

The documents contained in the technical report and reproduced in pages 3-9 through 3-18 in this Final EIR demonstrate that all of the NAHC recommendations have been addressed.

7. Cultural Resources Evaluation by the California Historic Resources Information System (CHRIS)

A review of records of known cultural resources has been completed by the California Historical Resources Information System (CHRIS). This review ***(see Attachment 7)*** revealed that:

"There are no recorded cultural resources within the project area and it is not known if resources exist there. There are no recorded cultural resources within a ½ mile radius of the project area. Please note that a lack of data does not indicate negative data.

There are no known cultural resources within the project area, or the immediate vicinity that are listed in the National Register of Historic Places, the California Register, California Inventory of Historic Resources, California Points of Historical Interest, or the California State Historic Landmarks".

The CHRIS letter recommended:

We understand that unpermitted construction has already occurred. In these areas, no further archaeological investigation is needed. The current condition of the lands where new construction is proposed was not specified. If these lands are vacant and have never been developed, including placement of underground utilities, we recommend that a professional archaeologist conduct a field survey of the areas prior to ground disturbance activities. Please note that agriculture does not constitute development..."

A record search has also been completed by the Native American Heritage Commission (NAHC). This review ***(see Attachment 7)***

*"The NAHC SLF search **did not indicate** the presence of several Native American cultural resources within one-half mile radius of the propojects (APE) planting sites.*

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area. (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts.

All the Native American individuals/organizations on the list which the NAHC provided were contacted by letter, FAX or telephone. The chairman of the Kings River Choinumni Farm Tribe has responded by telephone, and the cultural resources director of the Table Mountain Rancheria sent a letter, both saying that the dairy is outside their tribes' area.

A copy of the Kings County Historical Sites Map from the County Dairy Element is included in ***Attachment 7***. The dairy is not near any historic site indicated on the map.

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CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO
KERN
KINGS
MADERA
TULARE

Southern San Joaquin Valley Information Center
California State University, Bakersfield
9001 Stockdale Highway
31 MW
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

FAX TRANSMITTAL

Date 11/5/09 Number of Pages 2 + Cover

Message To:

Name: David Avila / Jeff Fleming
Company: Western Dairy Design
Phone: 209-848-8674
FAX No: 209-848-8654

Message From:

Name: Celeste Thomson, Assistant Coordinator
FAX: 661/654-2415
Phone: 661/654-2289
Comments: Sozinho Record Search Results

Original will be sent X Original will not be sent ____

This FAX is intended to be a confidential communication with the person to whom it is addressed. If you receive this in error, please notify our office immediately.

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CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO
KERN
KINGS
MADERA
TULARE

Southern San Joaquin Valley
Information Center
California State University, Bakersfield
9001 Stockdale Highway
31 MW
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

TO: David Avila (RS# 09-419)
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

DATE: November 5, 2009

RE: Sozinho Dairy Expansion Project: 11447 8 ½ Ave., Hanford, CA 93230

County: Kings

Map(s): Remnoy 7.5'

The Information Center is under contract to the State Office of Historic Preservation and is responsible for the local management of the California Historical Resources Inventories. The Center is funded by research fees and a grant from the State Office of Historic Preservation. The Information Center does not conduct fieldwork and is not affiliated with any archaeological consultants who conduct fieldwork. A referral list of individuals who meet the Secretary of the Interior's standards for their profession is available at www.chrisinfo.org.

CULTURAL RESOURCES RECORDS SEARCH

The following are the results of a search of the cultural resources files at the Southern San Joaquin Valley Information Center. These files include known and recorded archaeological and historic sites, inventory and excavation reports filed with this office, and properties listed on the National Register of Historic Places, the California Register, the Historic Property Data File (10/23/09), the California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest.

PRIOR CULTURAL RESOURCE INVENTORIES CONDUCTED WITHIN THE PROJECT AREA AND A ONE-HALF MILE RADIUS

There have been no previous cultural resource studies conducted within the project area. There has been one (1) cultural resource studies conducted within a one-half mile radius, KI-5.

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(RS # 09-419)

KNOWN AND/OR RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND A ONE-HALF MILE RADIUS

There are no recorded cultural resources within the project area and it is not known if resources exist there. There are no recorded cultural resources within a one-half mile radius of the project area. Please note that a lack of data does not indicate negative data.

There are no known cultural resources within the project area or the immediate vicinity that are listed in the National Register of Historic Places, the California Register, California Inventory of Historic Resources, the California Points of Historical Interest, or the California State Historic Landmarks.

RECOMMENDATIONS

We understand that unpermitted construction has already occurred. In these areas, no further archaeological investigation is needed. The current condition of the lands where new construction is proposed was not specified. If these lands are vacant and have never been developed, including placement of underground utilities, we recommend a professional archaeologist conduct a field survey of the areas prior to ground disturbance activities. Please note that agriculture does not constitute development. A referral list is available at www.chrisinfo.org. If you have any questions, comments, or need any additional information, please don't hesitate to contact our office at (661) 654-2289.

By

Brian E. Hemphill, Ph. D.
Coordinator

Date: November 5, 2009

Fee: $225.00/hr. (Priority Service)

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

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STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

October 29, 2009

Mr. Jeff Fleming
Western Dairy Design Associates, Inc.
316 West F Street, Suite 100
Oakdale, CA 95361

Sent by FAX to: 209-848-8654
Number of pages: 3 4

Re: Request for a Sacred Lands File Search and Native American Contacts List for a Proposed, Sozinho Dairy Expansoin Project; located in the Hanford Area; Kings County, California

Dear Mr. Fleming:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources (c.f. CA Public Resources Code §21070), was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE) requested. The California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177)) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the 2007 CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ..,objects of historic or aesthetic significance." The NAHC SLF search **did not indicate** the presence of several Native American cultural resources within one-half - mile radius of the proposed projects (APE) planting sites.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and individuals as 'consulting parties' under both state and federal law.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. In particular, we urge consultation with Keith Turner, Jim Redmoon and Bob Pennell. A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource,. Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation Coordinator's office (at (916) 653-7278, for referral to the nearest Information Center of which there are 11..

Consultation with tribes and interested Native American consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f]*et seq)*, and NAGPRA (25 U.S.C. 3001-3013), as appropriate. .

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a

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project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contacts List (NOTE: we further recommend that other forms of 'proof of mailing or proof of contact be utilized instead of 'Return Receipt Requested' Certified or Registered Mail.) Further, we suggest a follow-up telephone call to the contacts if the replies are not received or need clarification.

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Native American Contacts
Kings County
October 29, 2009

nta Rosa Rancheria
airperson
O. Box 8 Tache
moore , CA 93245 Tachi
59) 924-1278 Yokut
59) 924-3583 Fax

le River Indian Tribe
an Garfield, Chairperson
O. Box 589 Yokuts
rterville , CA 93258
airman@tulerivertribe-nsn.
59) 781-4271
59) 781-4610 FAX

ble Mountain Rancheria
b Pennell, Cultural Resources Director
O. Box 410 Yokuts
ant , CA 93626-0177
59) 325-0351
59) 217-9718 - cell
59) 325-0394 FAX

igs River Choinumni Farm Tribe
hn Davis, Chairman
64 Oxford Avenue Foothill Yokuts
ovis , CA 93612-2211 Choinumni
9-324-9908

nta Rosa Rancheria
lo Franco, Director - Cultural Deparment
O. Box 8 Yokuts
moore , CA 93245 Tachi
59) 924-1278
59) 925-8530-FAX

s list is current only as of the date of this document.
tribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and
ety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
Federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

s list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed
inho Dairy Expansion Project; located in the Hanford Area of Kings County, California for which a Sacred Lands

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Native American Contacts
Kings County
October 30, 2009

umna Wo-Wah Tribal Goverment
ith F. Turner, Tribal Contact
O. Box 306 Dumna/Foothill
uberry , CA 93602 Mono
59) 855-3128 Home
59) 696-0191 (Cell)

umna Tribal Government
n Redmoon - Cultural Resources Representative
4 W. Fountain Dumna/Foothill
esno , CA 93705 Choinumni
9-243--9926

s list is current only as of the date of this document.
ribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and
ety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
federal NEPA (42 USC 4321-43351), NHPA Sections 106, 4(f) (16 USC 470(f) and NAGPRA (25 USC 3001-3013)

s list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed
inho Dairy Expansion Project located in the Hanford Area of Kings County, California for which a Sacred Lands

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TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

July 31, 2008

Jeff Fleming
Western Dairy Design Associates, Inc.
316 W. F Street, Suite 100
Oakdale, Ca. 95361

RE: Sozinho Dairy 1 & 3 expansion project

Dear Jeff Fleming:

This is in response to your letter dated July 8, 2008, regarding the Sozinho Dairy 1 & 3 expansion project.

We appreciate receiving notice; however, this project site is beyond our area of interest.

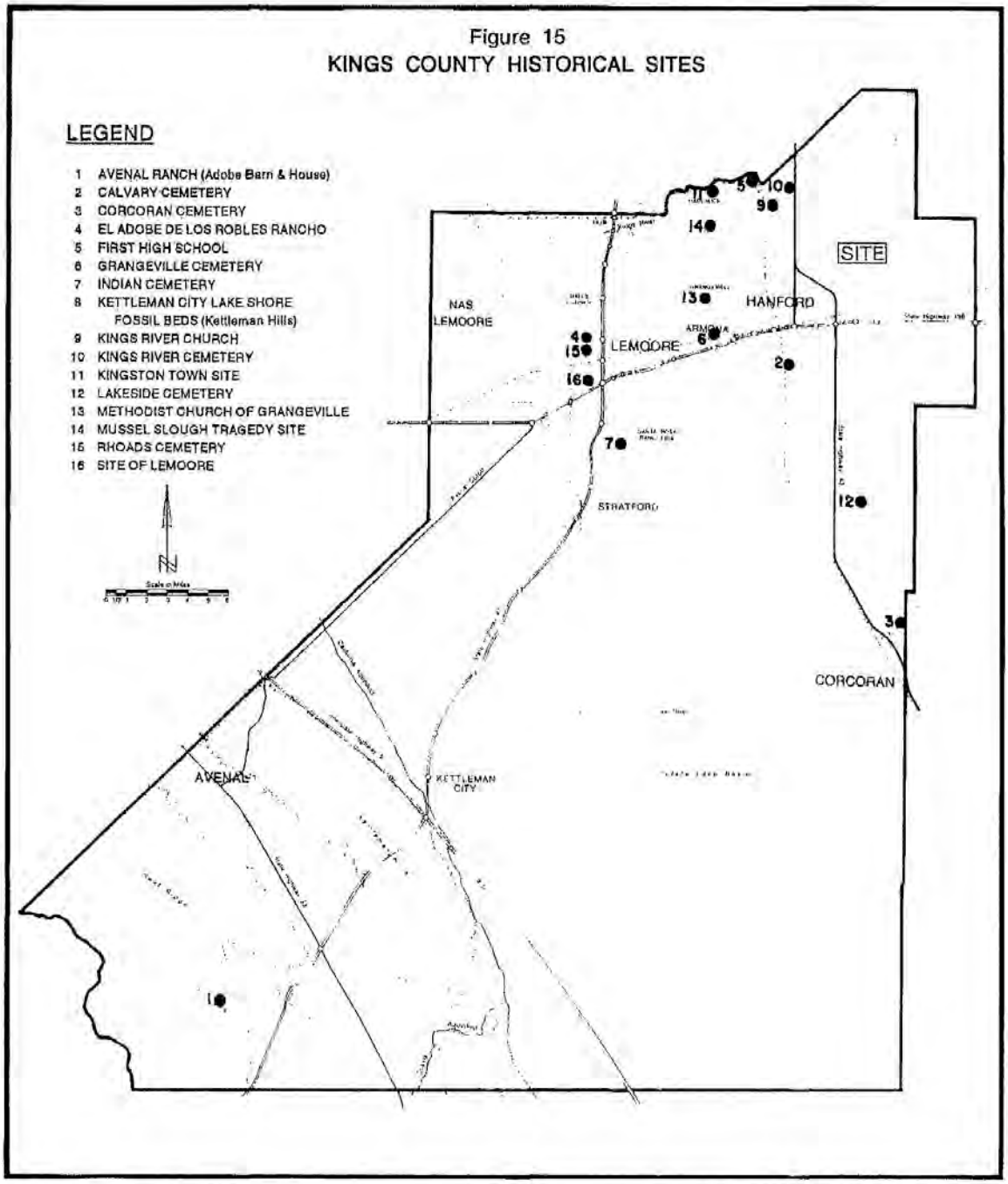
Sincerely,

Bob Pennell
Cultural Resources Director

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

412

Figure 15
KINGS COUNTY HISTORICAL SITES



BEFORE THE KINGS COUNTY PLANNING COMMISSION
COUNTY OF KINGS, STATE OF CALIFORNIA

IN THE MATTER OF APPROVING)	**RESOLUTION NO. 12-12**
CONDITIONAL USE PERMIT NO. 09-07)	
CONCERNING MERGING, REMODELING,)	
AND EXPANDING TWO EXISTING DAIRY)	
FACILITIES)	**RE: SOZINHO DAIRY EXPANSION PROJECT**

WHEREAS, an application was submitted on October 2, 2009, by Western Dairy Design for Conditional Use Permit ("CUP") No. 09-07, a proposal to merge, remodel and expand two existing dairy facilities; and

WHEREAS, the Sozinho Dairy Expansion Project is located at 11447 8 $^{1}/_{2}$ Avenue, Hanford; and

WHEREAS, the Notice of Preparation/Initial Study ("NOP/IS") of a Draft Environmental Impact Report for the Sozinho Dairy Expansion Project ("Draft EIR") was distributed by the Kings County Community Development Agency ("Community Development Agency") and circulated for a 30-day public review period on May 5, 2010; and

WHEREAS, the existing conditions described in the Draft EIR reflect the physical environmental conditions in existence at the time the NOP/IS was distributed; and

WHEREAS, the Community Development Agency received comments on the NOP/IS for the Draft EIR; and

WHEREAS, the Community Development Agency determined that the preparation of an EIR was appropriate due to potentially significant environmental impacts that could be caused by implementing the Project; and

WHEREAS, a Notice of Intent to Adopt an Environmental Impact Report was published on May 4, 2012, providing notice that the Draft EIR had been completed and was available for public review and comment; and

WHEREAS, the Draft EIR was published and circulated for public comments from May 4, 2012, to June 18, 2012; and

WHEREAS, the Community Development Agency distributed copies of the Draft EIR to those public agencies that have jurisdiction by law with respect to the Project, as well as to other interested persons and agencies, and sought the comments of such persons and agencies; and

WHEREAS, following closure of the public comment period, the Draft EIR was supplemented to incorporate comments received by the Community Development Agency and the Community Development Agency's responses to such comments; and

WHEREAS, the Final Environmental Impact Report for CUP 09-07 for the Sozinho Dairy Expansion Project ("Final EIR") consists of the following information: comments and recommendations received on the Draft EIR, a list of persons, organizations, and public agencies commenting on the Draft EIR, the responses of the Community Development Agency to significant environmental points raised in the review and consultation process, any other information added by the Planning Commission; and the Draft EIR, including the technical appendices; and

WHEREAS, on October 26, 2012, a public notice of Final EIR availability and of the Kings County Planning Commission's ("Planning Commission") scheduled November 5, 2012, public hearing on the Final EIR, was mailed to all Responsible Agencies, interested groups, organizations and persons, including all persons and agencies that had commented on the Draft EIR; and

WHEREAS, on October 26, 2012, the Kings County Community Development Agency made a recommendation to the Planning Commission that the Final EIR was adequate; and

WHEREAS, on November 5, 2012, the Planning Commission held a duly noticed public hearing on CUP 09-07 in the Board of Supervisors Chambers of the Kings County Government Center, 1400 W. Lacey Blvd., Hanford, California; and

WHEREAS, at the November 5, 2012, public hearing the Planning Commission received a report presented by County staff that included recommendations; and

WHEREAS, the Planning Commission received testimony prior to the close of the public hearing; and

WHEREAS, in order to approve CUP 09-07 the Planning Commission is required to make the following findings and certifications with regards to the California Environmental Quality Act: (1) The Final Environmental Impact Report prepared for this project is adequate; (2) feasible and reasonable alternatives were evaluated and found not to be superior to the approved project; (3) the Final EIR has been completed in compliance with CEQA; (4) the Final EIR reflects the Planning Commission's independent judgment; and (5) the Planning Commission reviewed and considered the information in the Final EIR before approving the project; and

WHEREAS, the Planning Commission has reviewed the Final EIR in its entirety, and has determined that the document reflects the independent judgment of the County; and

WHEREAS, the Final EIR identified certain significant effects on the environment that, absent the adoption of mitigation measures, would be caused by the construction and operation of the Project; and

WHEREAS, the Planning Commission is required, pursuant to CEQA, to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant project-related environmental effects; and

WHEREAS, as demonstrated by the CEQA Findings of Fact and Statement of Overriding Considerations attached as Exhibit 1 to this Resolution, many of the Project's significant environmental effects can be either substantially lessened or avoided through the adoption of feasible mitigation measures, although some of these effects will remain significant and unavoidable despite the adoption of all feasible mitigation measures; and

WHEREAS, because the adoption of all feasible mitigation measures cannot substantially lessen or avoid all significant effects on the environment associated with the Project, the Planning Commission must consider the feasibility of alternatives, as set forth in the Final EIR, that will be less environmentally damaging than the Project with respect to the unavoidable significant effects associated with the Project; and

WHEREAS, the Planning Commission has determined, for reasons set forth in Exhibit 1 attached hereto, that the No Project Alternative and the Reduced Herd Size Alternative, as described in the Final EIR, are either not environmentally preferable, are infeasible (e.g., they fail to fully meet the Project objectives), or are neither environmentally preferable nor feasible; and

WHEREAS, the Planning Commission is required by Public Resources Code Section 21081.6, subdivision (a), to adopt a mitigation and monitoring plan to ensure that the mitigation measures adopted by the County are actually carried out; and

WHEREAS, a Mitigation and Monitoring Plan has been prepared and is contained in Corrected Table ES-1 of the Final EIR which is attached as Exhibit 2 of this resolution; and

WHEREAS, because the adopted mitigation measures have not fully mitigated or avoided all identified significant environmental effects associated with the Project, CEQA requires the Planning Commission to adopt a Statement of Overriding Considerations, which is included as Section 7 of Exhibit 1 attached hereto; and

WHEREAS, the Planning Commission determines it appropriate to certify the Final EIR, to adopt the CEQA Findings of Fact and Statement of Overriding Considerations, to approve the Mitigation Monitoring Program, and to approve CUP 09-07.

NOW, THEREFORE, the Planning Commission of the County of Kings does hereby resolve, determine and order as follows:

I. SECTION 1: Recitals

1. The above recitals are true and correct, and the Planning Commission hereby so finds.

II. SECTION 2: Findings Related to Prior Proceedings

1. The Notice of Preparation for the Draft EIR was duly prepared, noticed and properly circulated in accordance with the provisions of CEQA.

2. The Draft EIR was duly prepared, properly circulated and completed in accordance with CEQA.

3. After providing adequate public notice, the Draft EIR was duly circulated in accordance with the provisions of CEQA, and a public hearing was properly noticed and was conducted by the Planning Commission in compliance with CEQA.

4. All comments received during and after the period of public review have been duly considered and incorporated into the Final EIR, and when necessary, replied to in accordance with the provisions of CEQA.

5. The Planning Commission provided written responses to all public agency comments received on the Draft EIR at least ten days before certification of the Final EIR pursuant to the provisions of CEQA.

6. The Final EIR for the Project has been properly completed and has identified all significant environmental effects of the Project, and there are no known potential environmental effects that are not addressed in the Final EIR.

7. The Project has been modified with mitigation measures to eliminate significant impacts or to reduce such impacts to a level of insignificance in almost all instances.

8. The Commissioners, in their capacity as the decision-making body of the Lead Agency for this project, were mailed copies of the proposed Draft EIR on May 4, 2012, and were mailed copies of the proposed Final EIR on October 26, 2012. The Commission heard a summary of the Final EIR as part of the staff report given at the public hearing on November 5, 2012, and the Commission has reviewed and considered the information contained in the Draft EIR and Final EIR prior to taking action on CUP 09-07.

9. The Planning Commission has used its own independent judgment in adopting this Resolution, in approving the Project, and in adopting and certifying the Final EIR, adopting the CEQA Findings of Fact and Statement of Overriding Considerations and the Mitigation and Monitoring Plan.

III. SECTION 3: Certification of the Final EIR, Adoption of the CEQA Findings of Fact and Statement of Overriding Considerations, and Adoption of the Mitigation and Monitoring Plan

1. It is hereby certified that the Final EIR has been completed in compliance with CEQA;

2. It is hereby certified that the Final EIR has been presented to the Planning Commission, which has reviewed and considered the information and analysis contained therein;

3. It is hereby certified that the Final EIR reflects the independent judgment of the Planning Commission of the County of Kings;

4. By adopting this Resolution, including the CEQA Findings of Fact and Statement of Overriding Considerations attached hereto as Exhibit 1, the Planning Commission has satisfied its obligations pursuant to Public Resources section 21081 and CEQA Guidelines section 15091, in that Exhibit A (i) identifies all feasible mitigation measures that can substantially lessen or avoid the significant environmental effects associated with the Project, (ii) explains why no feasible mitigation measures are available to substantially lessen or avoid some significant environmental effects associated with the Project, and (iii) explains why the No Project Alternative and the Reduced Herd Size Alternative cannot feasibly and adequately satisfy the objectives of the Project;

5. Through this Resolution, including a Mitigation and Monitoring Plan contained in Corrected Table ES-1 of the Final EIR which is attached as Exhibit 2 of this resolution, the Planning Commission has satisfied its obligations pursuant to Public Resources Code section 21081.6, subdivision (a);

6. By adopting this Resolution, including Section 7 of Exhibit 1 attached hereto, the Planning Commission has satisfied its obligation pursuant to Public Resources Code section 21081, subdivision (b), which requires the issuance of a Statement of Overriding Considerations whenever a project's significant environmental effects cannot be substantially lessened or avoided by the adoption of all feasible mitigation measures;

7. The Planning Commission authorizes County staff to prepare and file a Notice of Determination within five working days following the date of adoption of this Resolution with the County Clerk-Recorder's Office of the County of Kings and with the State of California and directs that copies of the Final EIR be retained at the office of the Kings County Community Development Agency.

IV. SECTION 4: Consistency with the *2035 Kings County General Plan* and the Dairy Element

Finding No. 1: The use of the Project site for the Sozinho Dairy Expansion Project will be in accordance with all the objectives and policies of the *2035 Kings County General Plan* and the *Dairy Element*.

Evidence:

1. The proposal to merge, remodel and expand two existing dairy facilities is consistent with the policies of the Kings County General Plan. The applicable general plan policies are found in the *2035 Kings County General Plan*. Figure LU-16, Land Use Map of Hanford "Urban Fringe" (see page 6 of the staff report for CUP 09-07), designates the project site as General Agriculture (AG-20).

   A. The proposal to merge, remodel and expand two existing dairy facilities is a commercial agricultural use that is appropriate within the AG-20 designation.

2. Page LU-13, Section III.A.1. of the "Land Use Element" states that agricultural land use designations account for a vast majority of the County's land use. Included within this land use type are four agricultural type land use designations, Limited Agriculture, General Agriculture 20 Acre Minimum, General Agriculture 40 Acre Minimum, and Exclusive Agriculture. The

major differences between the four Agriculture designations relate to minimum parcel size, animal keeping, and agricultural service businesses. These designations preserve land best suited for agriculture, protect land from premature conversion, prevent encroachment of incompatible uses, and establish intensity of agricultural uses in a manner that remains compatible with other uses within the County. The development of agricultural service and produce processing facilities within the Agricultural areas of the County shall develop to County standards.

A. The proposal to merge, remodel and expand two existing dairy facilities is a commercial agricultural use that is appropriate within the AG-20 designation.

3. Page LU-13, Section III.A.1 of the "Land Use Element" of the *2035 Kings County General Plan* states that the AG-20 designation is applied to rural areas of the county north of Kansas Avenue, excluding the Urban Fringe areas of Hanford and Lemoore, Communities of Armona and Home Garden, the Naval Air Station Lemoore, the Santa Rosa Rancheria Tribal Trust Land, and other small Rural Interface pockets of urban uses. Generally characterized by extensive and intensive agricultural uses, farms within this designation have historically been smaller in size. These areas should remain reserved for commercial agricultural uses because of their high quality soil, natural and manmade waterways, scenic nature with larger concentrations of orchards, vineyards, and valley oak trees.

   A. The proposal to merge, remodel and expand two existing dairy facilities is a commercial agricultural use that is appropriate within the AG-20 designation.

4. Page LU-27, Section IV.B of the "Land Use Element" of the *2035 Kings County General Plan* states that the physical development of agricultural properties is regulated and implemented by the zoning ordinance.

   A. The proposed project is consistent with the Kings County Zoning Ordinance (see Section 5 on pages 76 through 81 of this Resolution for Zoning Consistency findings).

5. Page LU-37, LU Objective B5.2 restricts the locations where dairies may be located to those areas of the County where they are most compatible with surrounding uses, activities and environmental constraints as presented in the Dairy element.

   A. The dairy facility is located in the General Agriculture (AG-20) land use designation, which is a compatible area for dairies.

6. Page LU-37, LU Policy B.5.2.1 of the "Land Use Element" of the *2035 Kings County General Plan* states that proposed new dairies and dairy stock replacement facilities, and expansions of existing dairies may be approved through the Site Plan Review process if they meet all of the criteria in the *Dairy Element* concerning siting, design, operation, monitoring and reporting.

   A. The proposed project deviates from the standards in the Dairy Element; therefore, a Conditional Use Permit is required rather than a Site Plan Review pursuant to *Dairy Element* Policy DE 2.1g.

7. As required by the *Dairy Element* of the *2035 Kings County General Plan*, the owner/operator prepared and submitted the Sozinho Dairy Technical Report to the Kings County Community Development Agency on August 31, 2009 (see Appendix H of the Draft EIR) for the proposal to merge, remodel and expand two existing dairy facilities. The Kings County Community Development Agency has determined the Sozinho Dairy Technical Report and Dairy Site Plan deviates from the *Dairy Element's* policies and standards and that additional environmental review is required.

   A. Since the proposed project deviates from the policies of the *Dairy Element* a Conditional Use Permit has been submitted by the applicant and an Environmental Impact Report has been prepared to analyze the areas that the project deviates from the policies of the *Dairy Element*. A copy of Dairy Element Findings for CUP 09-07, Sozinho Dairy is located in Appendix G of the Draft EIR.

8. Section III.B, on Page DE-18 of the Dairy Element, states that when the expansion of an existing dairy does not or cannot meet all regulations, policies, mitigation requirements, standards, etc. in the Dairy Element, the application will be processed as an application for a conditional use permit (CUP). The review of such a CUP will include CEQA review beyond the Program EIR, which may include tiering of environmental documents as appropriate.

   A. Since the proposed project deviates from the policies of the *Dairy Element* a Conditional Use Permit has been submitted by the applicant and an Environmental Impact Report has been prepared to analyze the areas that the project deviates from the policies of the *Dairy Element*. A copy of Dairy Element Findings for CUP 09-07, Sozinho Dairy is located in Appendix G of the Draft EIR.

9. Objective DE 2.1, on Page DE-18 of the Dairy Element, states that any additional environmental review associated with the CUP process shall only be required to address the deviation from the Dairy Element site plan review process requirements.

   A. Since the proposed project deviates from the policies of the *Dairy Element* a Conditional Use Permit has been submitted by the applicant and an Environmental Impact Report has been prepared to analyze the areas that the project deviates from the policies of the *Dairy Element*. A copy of Dairy Element Findings for CUP 09-07, Sozinho Dairy is located in Appendix G of the Draft EIR.

10. Policy DE 2.1g, on Page DE-20 of the Dairy Element, states that an application that does not, or cannot, meet all regulations, policies, mitigation requirements, standards, etc. of the Dairy Element shall be submitted as an application for a conditional use permit (CUP) which will include additional environmental review. The Planning Commission may consider alternatives to the Dairy Element's regulations, policies, mitigation requirements, standards, etc., but must ensure that any alternative accomplish the same or higher level of performance as required by the Dairy Element, thus ensuring that the project is consistent with the Dairy Element of the General Plan.

A. Since the proposed project deviates from the policies of the *Dairy Element* a Conditional Use Permit has been submitted by the applicant and an Environmental Impact Report has been prepared to analyze the areas that the project deviates from the policies of the *Dairy Element*. A copy of Dairy Element Findings for CUP 09-07, Sozinho Dairy is located in Appendix G of the Draft EIR.

B. The Sozinho Dairy Expansion Project deviates from the standard contained in Dairy Element Policy DE 3.1c. The project proponent has submitted a CUP and has proposed to install and maintain a downwind windbreak/shelterbelt along the east and south boundary of the project site as an alternative to the requirement that the new improvements be located so that the existing separation shall not be reduced.

C. The windbreak will accomplish a higher level performance than is required by Dairy Element Policy DE 3.1c. A dust and odor windbreak is not a requirement of the Dairy Element, and is not a mitigation measures incorporated into either the Odor Management Plan or the Fugitive Dust Emissions Control documents within the Sozinho Dairy Technical Report. Installation of trees and shrubs will provide an additional layer of dust and odor control. Dairy Element mitigation measures are primarily focused on reducing or where feasible eliminating dust and odors within the dairy facility. As not all dairy facility dust is contained on site, a windbreak will encourage deposition of dust particles that transport odors and intercept and filter odors and dust particles already airborne.

11. Based on Objective DE 2.1 and Policy DE 2.1g of the Dairy Element, the EIR is only required to analyze the areas that the project deviates from the standards of the Dairy Element. No additional environmental review is required for areas that the project complies with the standards of the Dairy Element.

A. The Dairy Element Findings for CUP 09-07 (see Appendix G of the Draft EIR) documents the areas that the project is consistent with the standards of the Dairy Element. The Dairy Element Findings for CUP 09-07 also documents the areas that the project deviates from the standards of the Dairy Element. An Environmental Impact Report has been prepared to analyze the areas that the project deviates from the policies of the *Dairy Element*.

V. SECTION 5: Consistency with the *Kings County Zoning Ordinance*

Finding No. 2: The proposal complies with the applicable provisions of the *Kings County Zoning Ordinance*.

Evidence: Article 4, Section 402.D.8. of the General Agricultural (AG-20) District lists "expansions of existing bovine dairies which do not qualify under the *Dairy Element* of the *Kings County General Plan* for the issuance of a site plan review without additional mitigation of potential impacts" as a conditional use subject to Kings County Planning Commission approval.

As provided in Section 1902 of the *Kings County Zoning Ordinance*, the Planning Commission is the administrative agency authorized to grant use permits for conditional uses. When considering an application for a conditional use permit, the Commission shall impose conditions upon the granting of the use permit necessary for the protection of the public health, safety, and general welfare, and necessary to achieve the objectives of the *Kings County Zoning Ordinance.*

Sections 1905 and 1906 of the *Kings County Zoning Ordinance* require that before the Commission may act on an application for a conditional use permit it must hear the County Planning Director's report and hold a duly noticed public hearing.

Finding No. 3: The Community Development Agency Director's report was given to the Commission prior to the beginning of the public hearing on November 5, 2012.

Evidence: The Community Development Agency Director's reports were given to the Commission at its November 5, 2012, meeting.

Finding No. 4: The Commission duly noticed the public hearing for this application (CUP 09-07) by the prescribed methods in the *Kings County Zoning Ordinance* and state law.

Evidence: The Community Development Agency Director has certified that notice was given by the following methods:

1. Mailed notice to all property owners within 300 feet of the proposed project property boundary on October 26, 2012, as required by Chapter 2.7 of Division 1 of Title 7 of the California Government Code, beginning at Section 65090. For CUP 09-07, notice was also given in the following manner: If the property immediately adjacent to the to the subject property is more than 300 feet in width, then notice shall be given to the next adjacent parcel as well. However, if the immediately adjacent property is less than 300 feet in width, no additional notice is required beyond the 300 feet. Parcels separated by a street or road shall be considered adjacent for determining which parcels are given notice. In addition to the above requirements, if a parcel is within the area that receives notice, both the property owner, and the situs address if it is different from the owner's address as shown on the latest equalized assessment roll, shall be given notice.
2. Mailed notice to all responsible and trustee agencies on October 26, 2012.
3. Mailed notice to all those persons who specifically requested notice in writing on October 26, 2012.
4. Published notice one time in the Hanford Sentinel, a newspaper of general circulation in Kings County as designated by the Kings County Board of Supervisors, on October 26, 2012.

Copies of these notices and affidavits of mailing, posting and publishing are on file in the office of the Kings County Community Development Agency.

Section 101 of the *Kings County Zoning Ordinance* states the purposes and objectives of the ordinance. These are:

The *Kings County Zoning Ordinance* is adopted to preserve, protect, and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. More specifically, the *Kings County Zoning Ordinance* is adopted in order to achieve the following objectives:

a. To provide a plan for the physical development of the county in such a manner as to achieve progressively the general arrangement of land uses depicted in the General Plan.

b. To foster a harmonious, convenient, workable relationship among land uses and a wholesome, serviceable and attractive living environment.
c. To promote the stability of existing land uses which conform with objectives and policies of the General Plan and to protect them from inharmonious influences and harmful intrusions.
d. To ensure that public and private lands ultimately are used for the purposes which are most appropriate and most beneficial from the standpoint of the general public.
e. To promote the beneficial development of those areas which exhibit conflicting patterns of use.
f. To prevent excessive population densities and overcrowding of the land with structures.
g. To promote a safe, effective traffic circulation system.
h. To foster the provision of adequate off-street parking and truck loading facilities.
i. To facilitate the appropriate location of public facilities and institutions.
j. To protect and promote appropriately located agricultural, commercial, and industrial pursuits in order to preserve and strengthen its economic base.
k. To protect and enhance real property values.
1. To conserve the county's natural assets and to capitalize on the opportunities offered by its terrain, soils, vegetation and waterways.
m. To coordinate policies and regulations relating to the use of land with such policies and regulations of incorporated cities of the county in order to: facilitate transition from county to municipal jurisdiction that land which is first developed in an unincorporated area and is subsequently annexed to a city; foster the protection of farming operations in areas of planned urban expansion, and ensure unimpeded development of such new urban expansion that is logical, desirable and in accordance with objectives and policies of the General Plan.

Finding No. 5: The proposed project is consistent with the objectives of the *Kings County Zoning Ordinance,* as provided in Section 101.

Evidence: Based on Section 101 of the *Kings County Zoning Ordinance*, the text of which is listed in Section 3.2 of the staff report for CUP 09-07, the following objectives are met:

Objective a is to insure development is directed toward achieving progressively the general arrangement of land uses depicted in the general plan. The *2035 Kings County General Plan* identifies the Sozinho Dairy Expansion Project site as being located within the General Agriculture (AG-20) designation. New dairies and expansions of existing dairies are appropriate uses within the AG-20 and the AG-40 designations. The Limited Agricultural (AL-10) designation acts as a buffer between urban land uses and intensive agricultural land uses in the AG-20 and AG-40 designations.

Objective b is to insure that development does not detract from a wholesome, serviceable and attractive living environment. The remoteness of the proposed Sozinho Dairy Expansion Project from population concentration provides for a harmonious, workable relationship among land uses. The nearest residential subdivision is in the unincorporated community of Home Garden, which is about 1.0 mile west of the proposed Sozinho Dairy Expansion Project. The proposed Sozinho Dairy Expansion Project is not upwind of any residential subdivisions.

Objective c provides for protection from intrusive or conflicting land use. This works two ways in this case. The remoteness of the location in an AG-20 zone district separates the proposed Sozinho Dairy Expansion Project from areas of residential and commercial uses. The AL-10 zone district also acts as a buffer between the AG-20 zone district and urban uses so that incompatible uses will not encroach on this proposed use in the future thus eliminating the potential for future land use conflicts.

Objective d is to insure land uses are appropriate and beneficial to the general public. The general plan policies for dairy facilities direct the location of such facilities away from population concentrations. Using the AG-20 zone district for the proposed Sozinho Dairy Expansion Project accomplishes this by appropriately separating people in residential and commercial areas from the proposed Sozinho Dairy Expansion Project. The closest residential subdivision is in the unincorporated community of Home Garden, which is about 1.0 mile west of the proposed Sozinho Dairy Expansion Project.

Objective e refers to development of transitional areas, i.e., urban-rural interface, commercial-residential transition zones, etc. This proposal is not in any transitional area and is not affected by any of these issues.

Objective f refers to development density of residential uses. This proposal is not associated with any residential use and does not affect the development density of any residential uses.

Objective g refers to safe, effective traffic circulation, which is attained through the project's consistency with its location near a major transportation route, i.e., SR 43. This roadway is designed for truck traffic and does not go through residential neighborhoods. Kings County is located in the southern half of the San Joaquin Valley and covers approximately 1,400 square miles. The major routes crossing Kings County are Interstate (I-) 5 and State Route (SR-) 198. These major routes connect SR-41 and SR-43 and a network of other state highways and County roads. There are approximately 1,400 miles of surface roads of all classifications in Kings County maintained variously by the state, County, and incorporated cities. Approximately 160 miles are state and interstate highways, and approximately 970 miles are County roadways. The remaining miles are city streets. Appendix H of the Draft EIR contains the Technical Report for the Sozinho Dairy Project. A Traffic Impact Study (pages 102 to 103 of the Technical Report) states that the project is not expected to degrade the present Level of Service (LOS) on the nearby County roads of regional significance below acceptable levels.

Objective h provides for adequate off street parking and truck loading (and unloading) facilities. All of the proposed Sozinho Dairy Expansion Project will be entirely on Sozinho property. No parking, loading or unloading will occur on any public street.

Objective i is to facilitate the location of appropriate public facilities. This objective is not applicable since the project does not affect the location of public facilities.

Objective j is intended to protect and promote appropriately located activities on the land, and to preserve and strengthen the county's economic base. The remoteness of the Sozinho Dairy Expansion Project eliminates any adverse effects the project might cause on activities where people work and live (See Objectives a, b, c, and d above).

Objective k is to protect real property values. The remoteness of the proposed site from residential and commercial provides this protection (See Objectives a, b, c, d, and j above).

Objective l is intended to conserve the county's natural assets. The proposed project does not affect any of the County's natural assets. The Project site is located in the AG-20 zone district and proposes to expand an existing bovine dairy facility. A dairy facility is a commercial agricultural operation that is appropriate within the AG-20 zone district.

Objective m refers to coordinating transition from county to municipal jurisdiction. This objective is not applicable since the Sozinho Dairy Expansion Project does not affect any urban fringe area in the county.

According to Section 1908.C. of the Kings County Zoning Ordinance, the proposed conditional use must comply with each of the applicable provisions of the ordinance.

Finding No. 6: The proposed project conforms to Section 405 (f) and 406 of the *Kings County Zoning Ordinance*. The provisions include:

- Screening of open storage of material or equipment
- Objectionable process, equipment or materials
- Site area
- Site area per dwelling unit (not applicable)
- Coverage
- Fences, walls and hedges
- Yard requirements
- Height of structures
- Distance between structures
- Off street parking and loading facilities
- Signs

Evidence:

Screening: The Sozinho Dairy Expansion Project is one-quarter mile west of State Route 43 and one mile east of the unincorporated community of Home Garden (which is the nearest single family residential subdivision). Section 1605.B of the Kings County Zoning Ordinance contains the provisions pertaining to fencing, walls, gates, hedges and screening and landscaping. Section 1605.B.1.f. requires screening when a site that is the subject of a site plan review or a conditional use permit abuts on or across a street or alley from a rural residential, residential, multi-family residential, or transitional zone district. The Sozinho Dairy Expansion Project does not require screening because the project site does not abut and is not on or across a street or alley from a rural residential, residential, multi-family residential, or transitional zone district.

Objectionable process, equipment or materials: Although a dairy facility can create objectionable odors, the rules, regulations, standards and laws that apply both to the construction, maintenance, and operation of a dairy facility will mitigate odors to the extent feasible. The EIR identifies a potentially significant impact to Air Quality (Odor Emissions) in that Project will result in the emission of odors formed from dairy operations, including corrals, lagoons, and freestalls. Detailed information and analysis regarding this significant potential impact is provided in the

Draft EIR, Section 3.1 (Impact # 3.1.9). The potential significant impact to Air Quality (Odor Emissions) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rule 4550 and Rule 4570 (see Appendix D of the Draft EIR), in Dairy Element Policies DE 4.1a, DE 4.1b, DE 4.1d and DE 5.1b (see Appendix F of the Draft EIR), and by the preparation and filing of an Odor Management Plan (OMP) with the Community Development Agency as required by the Kings County Dairy Element. A copy of the OMP is in the Sozinho Dairy Technical Report (pages 45-51) located in Appendix H in the Draft EIR. Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Odor Emissions), and the impact will remain significant.

Site Area: Minimum site area in the AG-20 zone district is 20 acres. The Sozinho property is 428 acres in size, which far exceeds this minimum site area requirement. The dairy facility occupies approximately 60 acres and field crops occupy 368 acres.

Site Area Per Dwelling Unit: No dwelling units are proposed; therefore, the provision is not applicable.

Coverage: The AG-20 zone district has no limitation for site coverage and none will be required.

Fences, Walls, and Hedges: Section 1605.B.1 of the *Kings County Zoning Ordinance* contains provisions that specify the type of fences, walls, and hedges that are permitted in agricultural zone districts. The Sozinho Dairy Expansion Project does not propose fences, walls, and hedges that would conflict with Section 1605.B.1.

Yard Requirements: The proposed facilities will meet all minimum yard setback requirements.

Height of structures: The AG-20 zone district has no limitations on height of structures, and none will be required.

Distance Between Structures: The AG-20 zone district requires a minimum distance between structures of not less than ten (10) feet. The proposed project will be required to comply with this requirement.

Off Street Parking and Loading Facilities: Adequate parking is provided on site.

VI. SECTION 6: Public Health and Safety

Finding No. 7: The Sozinho Dairy Expansion Project site will not be detrimental to public health and safety, nor materially injurious to properties in the vicinity.

Evidence: The Sozinho Dairy Expansion Project should not be detrimental to public health and safety, nor materially injurious to properties in the vicinity. The Sozinho Dairy Expansion Initial Study determined that the project will not have significant effects on Aesthetics, Agriculture and Forest Resources, Biological Resources, Cultural Resources, Geology/Soils, Hazards and Hazardous Materials, Mineral Resources, Hydrology and Water Quality, Noise, Population and Housing, Public Services, and Recreation.

The Planning Commission can find that the mitigation measures in the Final EIR, and incorporated into the Project approval, are feasible and adequate to reduce each potential significant impact below a level of significance, except for: 1) Toxic Air Emissions Health Risk; 2) Operational Emission of Criteria Pollutants, Fine Particulate Matter ($PM_{2.5}$); 3) Operational Emission of Criteria Pollutants, Volatile Organic Compound (VOC); 4) Operational Emission of Criteria Pollutants, Nitrogen Oxide (NO_x); 5) Methane (CH_4) Generation; 6) Ammonia (NH_3); 7) Odor Emissions; 8) Ambient Air Quality; 9) Greenhouse Gases; 10) Residences Within ¼ Mile of Dairy Facility; 11) Air Quality Degregation; and 12) Climate Change/Greenhouse Gas Emissions, where the Final EIR found these impacts to be significant and unavoidable.

These project-specific and cumulative air quality impacts are considered to be significant and unavoidable even after implementation of feasible mitigation measures included in Sections 3.1, 3.2, and Chapter 5 of the Draft EIR and Corrected Table ES-1 attached to the Errata Sheet for the Final EIR. In accordance with Section 15093 of the CEQA Guidelines, a statement of overriding considerations will be required for these impacts if the Commission, after completing its deliberations, decides to approve the project. The rationale for why the Commission can accept the unavoidable impacts is explained in Section 4.2.2 of the staff report for CUP 09-07 and the Statement of Overriding Considerations as discussed in Section 4.2.4 of the staff report for CUP 09-07.

VII. SECTION 7: *California Land Conservation* ("Williamson") *Act of 1965*

Finding No. 8: The Sozinho Dairy Expansion Project is consistent with the *California Land Conservation* ("Williamson") *Act of 1965*.

Evidence:

1. The project site is located within an established agricultural preserve.

    A. The *Uniform Rules for Agricultural Preserves in Kings County* state that during the term of the contract, the only uses permitted upon the land shall be Commercial Agricultural Uses and Compatible Uses.

        (1) Section A.3.d of the *Uniform Rules for Agricultural Preserves in Kings County* lists operation of dairies as a Commercial Agricultural Use.

2. Section 51238.1 of the *California Government Code* requires that uses approved on contracted lands shall be consistent with all of the following principles of compatibility:

    A. The use will not significantly compromise the long-term productive agricultural capability of the subject-contracted parcel or parcels or on other contracted lands in agricultural preserves.

        (1) The proposed project will merge, remodel and expand two existing dairy facilities. Since the existing agricultural acreage is not being reduced as a result of this project, the long-term productive agricultural capability of the subject-contracted parcel will not be significantly compromised.

B. The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

(1) The proposed project will merge, remodel and expand two existing dairy facilities. Since the existing agricultural acreage will continue to be used for agricultural purposes, the proposed project will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

C. The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

(1) The proposed project will merge, remodel and expand two existing dairy facilities. Since the existing agricultural acreage will continue to be used for agricultural purposes, the proposed project will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

VIII SECTION 8: Conditions of Approval

The Commission adopts the following conditions of approval for CUP 09-07:

KINGS COUNTY COMMUNITY DEVELOPMENT AGENCY - PLANNING DIVISION Contact Sandy Roper at the Kings County Community Development Agency - Planning Division at (559) 852-2685, regarding the following requirements:

1. All proposals of the applicant shall be requirements unless modified herein, including all designs and operational procedures identified in the Technical Report that are the owner and or operator's responsibility to do.

2. The site shall be developed according to the approved Site Plan and Technical Report submitted with a maximum herd limit of the dairy shall not exceed 4,768 animal units as proposed in the application, and assumes that 91 percent of the solid (dry) manure is transported off-site. This limit is based on the evaluation using the Kings County Dairy Model. However, a lower limit imposed by another agency with authority to set animal unit capacity may restrict the actual herd size, and this Conditional Use Permit does not alter such other agency's authority to restrict the dairy size. Regardless of any other agency's herd limit, no new herd limit zoning permit from Kings County will be required for any change in herd size below the 4,768 animal unit limit. No additional zoning permit will be required from the Kings County Community Development Agency unless the applicant proposes to exceed this maximum animal unit level or make additions to the physical dairy facility such as, but not limited to, adding barns, lagoons, feed and manure storage areas, corrals or change the manure management plan, etc.

At such time in the future the term "Animal Units (AU)" may be redefined, or waste production per AU is redefined, by the RWQCB, a re-evaluation of the herd limit approved in this Conditional Use Permit approval shall be done in coordination with any changes to the Report of Waste Discharge required by the RWQCB.

3. The site plan for the project is approved in concept. However, it is understood that during the actual design of the project that either of the following minor alterations to the site plan may be necessary: 1) structural alterations; and/or 2) alterations to the location of structures. Any minor alterations shall comply with the following requirements:

   a. The site shall be developed in substantial compliance with the conceptually approved site plan. Development of the site shall be considered substantially consistent with the approved conceptual site plan if any minor structural alteration is within ten (10) percent of the square footage shown on the conceptually approved site plan or up to a 2,500 square foot increase in structural size, whichever is less, and the minor structural alteration complies with coverage standards.

   b. A minor alteration of the location of a structure shall be considered substantially consistent with the approved conceptual site plan if the new location of the structure complies with all setback requirements for the zone district that the project site is located in.

   c. Any minor alteration that would make it necessary to modify or change any specified zoning requirement placed on the project would require resubmittal of the application to amend the approval of the Conditional Use Permit.

   d. No expansion of use, regardless of size, which would increase the projected scale of operations beyond the scope and nature described in this Conditional Use Permit application, will be allowed. Any expansion that is a substantial change from the conceptually approved site plan will require either an amendment to the approved Conditional Use Permit or a new zoning permit.

4. **A revised site plan shall be submitted to the Zoning Administrator in the event that any minor alterations (See Planning Division Requirement # 3) are made to the approved site plan to satisfy other regulatory agencies.** The revised site plan shall be submitted with the building permit application if a permit is required or prior to commencing construction if a building permit is not required (i.e., lagoons).

5. In addition to the site plans attached to each set of construction plans, two (2) separate copies of any revised site plan shall be submitted to the Community Development Agency for approval and inclusion into the zoning permit project file and the Kings County Tax Assessor's records.

6. The project shall comply with all applicable policies of the *Dairy Element* of the *Kings County General Plan.*

7. The project shall comply with all regulations of the *Kings County Zoning Ordinance*, with particular reference to the General Agricultural (AG-20) Zone District standards contained in Article 4, and Article, 19.

8. The proposed use and structures shall be harmonious with existing structures and land in the vicinity.

9. The minimum yard setback requirements for any new structures shall be as follows:

    a. The minimum front yard setback from the property line to the milk barn shall be fifty (50) feet and further provided that the distance from the center line of a street to the rear of the required front yard shall not be less than eighty (80) feet.
    b. The minimum front yard setback from the property line to a non-dwelling, non-public type structure shall be thirty-five (35) feet except along those streets and highways where a greater setback is required by other ordinances and standards of the county including but not limited to the Kings County Improvement Standards, and further provided that the distance from the center line of the street to the rear of the required front yard shall be not less than sixty-five (65) feet.
    c. The minimum side yard setback shall be ten (10) feet from the side property line.
    d. The minimum rear yard setback shall be ten (10) feet from the rear property line.
    e. The minimum distance between a residence and a structure housing livestock or poultry shall be forty (40) feet.
    f. All buildings and structures on dairy or feedlot facilities shall be set back from all public road right-of-ways at least thirty-five (35) feet, Corrals, feed and manure storage areas, and open sided shade structures shall be set back at least twenty (20) feet from public road right-of-ways.

10. Signs shall be permitted only as follows:

    a. Any sign(s) pertaining to the use and location on the site shall not exceed the total copy area of forty (40) square feet. The location of any such sign shall be submitted to the Zoning Administrator for approval prior to installation.
    b. Signs exceeding forty (40) square feet in structural area and up to one-hundred-fifty (150) square feet in structural area which are incidental and pertain to a permitted or conditional use may be permitted subject to a site plan review. Such signs may be located on the same parcel or an adjacent parcel used in conjunction with the permitted or conditional use. Signs exceeding forty (40) square feet in structural area may be illuminated and shall be thirty (30) feet from property lines adjacent to a road.
    c. One non-illuminated on-site sign real estate sign or subdivision not exceeding thirty-two (32) square feet in structural area with copy on both sides pertaining to the sale, lease, rental or display of a structure or land per Section 1606.B.2.a.
    d. Directional or information (other than advertising) signs not exceeding two hundred and forty (240) square feet in area located adjacent to a State Highway or a county road within an area limited by points not closer than one-fourth (¼) mile or further than three-fourths (¾) mile from a frontage road turnoff, listing commercial establishments accessible via the frontage road, and further provided that not more than four (4) such signs shall be permitted on each side of the highway or county road.

e. Signs not exceeding two hundred forty (240) square feet in area located adjacent to a State Highway or county road that is classified as an arterial or collector road (including such designations as urban or rural, major or minor) giving direction to or information about Kings County cities, communities, or rural service centers which are accessible by such state highways or county roads or direct routes consisting of combinations thereof, provided that such signs shall be limited to four (4) per city, community or rural service center regardless of the sign's location in this district, and further provided that such signs shall not contain information pertaining to a subdivision of land or private development, commercial establishments or quasi-public developments.

f. Non-illuminated temporary construction signs in accordance with Section 1606.B.2.c.

g. Political and campaign signs in accordance with Section 1606.B.3.

h. Placing a sign on property which is restricted by contract under the *California Land Conservation "Williamson" Act* shall be prohibited, except for temporary signs (pursuant to Section 1606.B.2.a, c, and d), political and campaign signs (pursuant to Section 1606.B.4), and must be consistent with the *Uniform Rules for Agricultural Preserves in Kings County*.

11. Off-street parking spaces shall be provided as shown on the approved site plan in accordance with Article 15, Section 1502.A.2.(e) of the *Kings County Zoning Ordinance* and shall be maintained in accordance with *Kings County Improvement Standards* and approved site plan. The required off-street parking spaces for automobiles shall be provided at the time of initial occupancy of the site or of construction of a building.

12. All parking areas, aisles, and driveways shall be surfaced and maintained so as to provide a durable, dustless surface as follows:

    a. Any driveway used by milk trucks/tankers, where the wheels of the trucks create a turning movement, shall be surfaced in accordance with Section 303.G. and Drawing 3036 of the *Kings County Improvement Standards* which requires two (2) inches of Type "B" Asphalt Concrete over six (6) inches of R-70 Native @ 95% compaction under the "Heavy Use (Alternative Design)".

    b. All parking areas, aisles and access drives shall be surfaced and maintained so as to provide a durable, dustless surface. Section 303.G. and Drawing 3036 of the *Kings County Improvement Standards* requires four (4) inches of decomposed granite **with a penetration seal of SC-250** at 0.50 gal./sq. yd. under "Light Use Conditions." An alternate material which provides a durable dust free surface may be used only with prior approval of the Director of Public Works. (Note: The Kings County Zoning Administrator hereby reserves the authority to require additional improvements to the parking area and driveways if at any time in the future the decomposed granite surface deteriorates and either a dust problem is created due to vehicles driving on the decomposed granite surface, or a mud problem is created due to vehicles tracking mud onto County roads or State highways).

13. For safety reasons, gates which are used for vehicular ingress and egress shall be setback so that the greater of the following distances are met from the property line being used for access:

    a. A minimum distance of twenty (20) feet or,

b. A distance sufficient to ensure that vehicles used for a permitted use requiring a site plan review or conditional use permit are able to pull completely onto their property.

c. Gates used for the primary vehicular ingress and egress and which are opened and closed electronically with a remote control may be located within any portion of the property being used for access to a driveway provided that:

(1) The property owner/occupant obtains a building permit from the building division for the installation of the electric gate operating mechanism and wiring. The property owner/occupant must also request and obtain a final inspection for the assigned building permit and demonstrate operation of the mechanism using the remote.

(2) The gate must be operational at all times using a remote control device that allows the property owner/occupant to open and close the gate to enter the driveway area without exiting the vehicle.

(3) At any time that the gate is not operational using the remote control device the gate must either be locked in the open position or it must be removed entirely.

14. No solid fence, wall, hedge or shrub exceeding three (3) feet in height shall be erected, planted or maintained within a required Traffic Safety Visibility Area. Traffic Safety Visibility Area is defined as a space set aside on a lot in which all visual obstructions, such as structures, fences and plantings that inhibit visibility and thus have the potential to cause a hazard to traffic and pedestrian safety are prohibited.

a. **Area adjacent to a driveway on any lot -** the Traffic Safety Visibility Area is that area on the street side of a diagonal line connecting points, measured from the intersection of the driveway (located on the property or adjoining parcel) and the street right of way line, twenty (20) feet along the side of the driveway and twenty (20) feet along the street side of a lot.

b. **On a corner lot -** the Traffic Safety Visibility Area also includes that area of a corner lot on the street side of a diagonal line connecting points, measured from the property corner where the streets intersect, set back one (1) foot for every one (1) mile per hour of the posted speed limit along each street.

15. All open and non-landscaped portions of the site shall be maintained in good condition, free from weeds, dust, trash and debris.

16. Any exterior lighting shall be hooded so as to be directed only on-site.

17. **Prior to construction of any new shades or other facilities,** in order to adequately assess any potential Project-related impacts to biological resources, an assessment shall be made by a qualified wildlife biologist to determine if there are any suitable nesting trees within ¼ mile of the construction site and to check for nesting raptors if any suitable trees occur. **A nesting survey for nesting raptors shall be performed if ground disturbing activities on the site are to occur between March 1 and July 31.** No surveys are required if construction is conducted outside of the season.

18. **The applicant shall comply with all provisions of California Historical Resources Information System letter dated November 5, 2009. On any land that is vacant and has never been developed, including placement of underground utilities, a professional archaeologist shall conduct a field survey of the area prior to ground disturbance activities. If any potential historical, archeological or paleontological resources are encountered during construction, work in the vicinity of the find shall be suspended or diverted. The applicant shall retain a qualified archeologist to perform an assessment of the resource.** Depending on the nature of any such find, evaluation may include determination of site boundaries and assessment of site integrity and significance. Standards for the site evaluation shall comply with appropriate State and Federal requirements (including California Public Resources Code Section 21083.2i)). Evaluation shall include, if necessary, site mapping and/or limited subsurface testing using standard archeological methods in accordance with CEQA Guidelines Section 15064.5. If, after evaluation, the qualified archeologist judges an historical, archeological or paleontological resource to be of importance, a mitigation plan shall be prepared in accordance with appropriate guidelines and submitted to the Zoning Administrator. Mitigation could include avoidance, site capping, data recovery, or a combination of these or other measures, as determined by the qualified archeologist or paleontologist. Consultation with representatives of recognized local Native American groups shall be reflected in the development of any mitigation plan affecting Native American cultural resources.

19. The applicant shall develop and maintain an "Emergency Back-up Plan" for the disposal of dead animals to be used in the event a county-wide emergency is declared. The Emergency Back-up Plan should provide details on how and where the dairy operator will dispose of animal carcasses in the event that disposal through rendering is not available. A copy of the Kings County *Emergency Action Plan for Dead Animal Management* is included in Appendix H of the Draft EIR.

20. In the event that dead animals must be transported off-site, carcasses shall be hauled in trucks that prevent leakage of carcass fluids on the roadway and shall be screened from public view during transport.

21. As required by *Kings County Dairy Element* Policy DE 4.2a, the dairy owner/operator shall have a written wastewater agreement with each third party that receives process wastewater from the dairy facility. The agreement shall include a legal description of the property that will be used for process wastewater application and shall include all provisions listed in Policy DE 4.2a as applicable. The wastewater agreement shall be recorded with the Recorder's Officer by the facility owner/operator and the owner of the land identified in the Comprehensive Dairy Process Water Application Plan after this zoning permit is approved <u>but before the final inspection of the shade structure</u>. A copy of each such new agreement shall be provided to the Kings County Zoning Administrator.

22. As provided in Kings County Dairy Element Policy 6.2f, copies of <u>ALL</u> reports that are required by, and submitted to, the RWQCB shall also be provided to the Kings County Zoning Administrator.

23. Prior to selling any land on which process water is applied, the facility owner/operator shall notify the Zoning Administrator and:

    a. Provide substitute land or enter into an agreement with another land owner to replace the land upon which the process water is applied, or
    b. Immediately reduce the dairy herd to a level that can be accommodated by the remaining land identified in this Conditional Use Permit
    c. Changes made in the operation as noted in this paragraph must be reflected in an amendment to this Conditional Use Permit.

24. Prior to terminating any wastewater agreement, the facility owner/operator shall notify the Zoning Administrator and:

    a. Provide a substitute agreement with another land owner to replace the land within the terminated agreement, or
    b. Immediately reduce the dairy herd to a level that can be accommodated by the remaining land identified in this Conditional Use Permit
    c. Changes made in the operation as noted in this paragraph must be reflected in an amendment to this Conditional Use Permit.

25. The owner/operator shall document and maintain a record of the amount of solid manure produced at the facility and the amount transported off-site. Documentation shall be accomplished using the "Manure/Process Wastewater Tracking Manifest" required by California Regional Water Quality Control Board General Order No. R5-2007-0035 and shall be made available to the Kings County Code Compliance Specialist upon request.

26. Pursuant to Article 24, Section 24-02 of the *Kings County Zoning Ordinance*, the Kings County Zoning Administrator shall have the right to enter on any site or to enter any structure for the purpose of investigation and inspection provided the right of entry shall be exercised only at reasonable hours. The zoning administrator may serve notice requiring the removal of any structure or use in violation of the *Kings County Zoning Ordinance* on the owner or his authorized agent, on a tenant, or on an architect, builder, contractor or other person who commits or participates in any violation.

27. Pursuant to Section 1908 of the Zoning Ordinance, the Planning Commission's decision on the application shall become effective eight (8) days following its decision, unless the Board of Supervisors initiates proceedings to review the decision of the planning commission or an appeal to the Board of Supervisors is filed pursuant to Section 1911 of the Zoning Ordinance. **The Conditional Use Permit shall lapse and shall become null and void one (1) year following the date that the Conditional Use Permit became effective, unless prior to the expiration of one (1) year a building permit is issued by the Building Official and construction is commenced and diligently pursued toward completion on the site that was subject of the Conditional Use Permit application.**

28. This approved Conditional Use Permit shall run with the land and shall continue to be valid upon change of ownership of the site which was the subject of the site plan approval.

29. A Conditional Use Permit may be extended for additional periods of time, if an application (by letter) and fees for extension of the Conditional Use Permit are filed with the Kings County Community Development Agency prior to the expiration date of the Conditional Use Permit.

30. The operator shall comply with all adopted rules and regulations of the Kings County Public Works Department, Fire Department, and Department of Environmental Heath Services, and all other local, District, Regional, State and Federal regulatory agencies.

31. All mitigation measures in the Mitigation Monitoring Plan, found in the Corrected Table ES-1 of the Final EIR attached to the Errata Sheet, that pertain to CUP No. 09-07 are adopted as conditions of this approval and are included in the Conditional Use Permit.

32. The applicant shall indemnify, defend and hold the Kings County Planning Commission and Kings County, and their officers, agents and employees, harmless from and against any and all claims, damages and liabilities, including, but not limited to the cost of defending against any and all litigation including administrative proceedings and payment of attorney's fees that may arise from the permit process, any challenges to the conditional use permit, denial of the permit, the supporting environmental documentation, or which arise out of operation of the Sozinho Dairy Expansion Project. The duty shall arise irrespective of whether the applicant, proponent or an opponent initiates such action.

33. The Sozinho Dairy Expansion Project shall be operated in a manner so as not to create a public nuisance or health hazard.

34. All existing and/or proposed landscaping shall be allowed to grow to maturity and shall be continually maintained after planting. Such maintenance is to include pruning, weeding, cleaning, fertilizing, and regular watering. Dead and dying plants shall be replaced with live plant materials to ensure compliance with landscaping requirements.

35. Pursuant to Section 14-38(d) of the *Kings County Code of Ordinances*, a "Notice of Disclosure and Acknowledgment of Agricultural Land Use Protection and Right to Farm Policies of the County of Kings" shall be signed, notarized, and recorded. A copy of the recorded document shall provide to the Kings County Community Development Agency. **Please enter the legal description of your property on the form (or attach a separate sheet if necessary) and take it to the Kings County Recorder's Office for recording after you have had your signature notarized. A copy of the recorded document shall be returned to the Community Development Agency after recording.**

36. Pursuant to Section 66020(d)(1) of the *California Government Code*, the owner is hereby notified that the 90-day approval period in which the applicant may protest the imposition of fees, dedications, reservations, or other exactions, begins on the date that this resolution is adopted.

37. Sales or use tax may apply to business activities on the site. The applicant may seek written advice regarding the application of tax to your particular business by writing to the nearest State Board of Equalization office. For general information, please call the Board of Equalization at 1-800-400-7115.

38. No process, equipment or materials shall be used which are found by the Zoning Administrator to be substantially injurious to persons, property, crops, or livestock in the vicinity by reasons of odor, fumes, dust, smoke, cinders, dirt, refuse, water carried wastes, noise, vibration, illumination, glare or unsightliness or to involve any undue risk of fire or explosion. The Zoning Administrator may revise this approval to resolve any of the above issues, should they occur, by placing additional requirements on the use including restricting or prohibiting any offending activity or activities.

39. The applicant shall comply with all adopted rules and regulations of the Kings County Community Development Agency, Kings County Public Works Department, Kings County Fire Department, and Kings County Health Department Division of Environmental Heath Services, and all other local, District, State and Federal regulatory agencies.

40. Within eight (8) days following the date of the decision of the Kings County Planning Commission, the decision may be appealed to the Kings County Board of Supervisors. Any such appeal shall be filed with the Clerk of the Board of Supervisors. An appeal fee of $320.00 shall be submitted at such time that an appeal is filed.

IX. SECTION 8: Other Standards and Regulations

The following departments and agencies have listed requirements, standards, and regulations that must be met under those department's and agency's jurisdiction. The Planning Commission has no authority to modify, amend, or delete any of these requirements, standards, and regulations, but lists them here as information to the applicant. Appeals for relief of these standards and regulations must be made through that department's or agency's procedures, not through the Zoning Ordinance procedures. However, failure of the applicant to comply with these other departments' and agencies' requirements, standards, and regulations is a violation of this conditional use permit (see Condition No. 30 above) and could result in revocation of this conditional use permit.

KINGS COUNTY COMMUNITY DEVELOPMENT AGENCY - BUILDING DIVISION Contact Darren Verdegaal at the Kings County Community Development Agency - Building Division at (559) 852-2683, regarding the following requirements:

1. Building permits must be obtained from the Building Division of the Kings County Community Development Agency for any structures, plumbing, electrical, or mechanical work.

2. Failure to obtain a building permit for any structure, prior to commencing construction, which requires a building permit, will result in the payment of a double fee. Payment of such double fee shall not relieve any person from fully complying with the requirements of Kings County Code of Ordinances, Chapter 5 in the execution of the work or from any other penalties prescribed therein.

3. Pursuant to Kings County Code of Ordinances, Chapter 5, Section 5-9 agricultural exemptions for building permits may only be obtained if the applicant, **before commencing construction**, files an application with the Building Official, together with the fee established by resolution of the Board of Supervisors to offset the building department's cost of processing the application, and secures from said Building Official a determination in writing that such construction is exempt for the requirements of Chapter 5.

4. Failure to obtain a building permit for a structure, prior to commencing construction, which would otherwise be considered agriculturally exempt will result in the loss of the agricultural exemption and the building permit shall be processed in accordance with Kings County Code of Ordinances, Chapter 5.

5. A minimum of (2) sets of plans and calculations signed by an architect or engineer licensed to practice in the Sate of California shall be required for all structures.

6. Prior to issuance of building permits (2) additional site plans shall be submitted, identifying each structure and the building permit assigned to said structure.

7. The applicant is responsible for contacting the Building Division to request a final inspection of the structures prior to occupying the structures and prior to startup of the operation. No building or structure shall be used or occupied until the Building Division has issued a Certificate of Occupancy.

8. All drive approaches and durable dustless surfaces shall be installed prior to the final inspection and maintained as per County Standards.

9. School fees based on square footage of milk barn expansion shall be added to the cost of the building permit, unless the school district provides an exemption from the school fees.

10. Public Facilities Impact Fees for the milk barn expansion shall be payable prior to the issuance of the building permit.

11. All construction shall conform to the current adopted California Building Code, California Electrical Code, California Mechanical Code, California Plumbing Code, and California Energy Code.

KINGS COUNTY PUBLIC WORKS DEPARTMENT Contact Tony Gomes at the Kings County Public Works Department at (559) 852-2694, regarding the following requirements:

1. All requirements required hereafter shall conform to the Kings County Improvement Standards.

2. All other alternatives to Public Works requirements must be approved by the Kings County Public Works Department.

3. Access to the site from a public road must be provided, and must be approved by the County.

4. Drive approaches shall be constructed in accordance with Section 205 of the *Kings County Improvement Standards* and shall be asphalt concrete.

5. The dairy facility continues to have track-out of dirt onto 8 ½ Avenue during wet weather which has been a problem in the past. The property owner shall reduce or eliminate track-out by placing a minimum 4" thickness of 1 ½ inch to 2 inch sized rock on all unsurfaced lanes, access roads, feed alleys and driveways serving the homes. Any driveway used by milk trucks/tankers, where the wheels of the trucks create a turning movement, shall be surfaced in accordance with Section 303.G. and Drawing 3036 of the *Kings County Improvement Standards* which requires two (2) inches of Type "B" Asphalt Concrete over six (6) inches of R-70 Native @ 95% compaction under the "Heavy Use (Alternative Design)".

6. Encroachment permits for drive approaches and other work in the right of way must be obtained from the Public Works Department.

7. All drainage shall be contained on-site in accordance with Section 404-C of the *Kings County Improvement Standards*.

KINGS COUNTY FIRE DEPARTMENT Contact Mike Virden of the Kings County Fire Department at (559) 852-2884 regarding the following requirements:

1. Expansion shall not interfere with fire department access. No structure or future structure shall be farther than 150 feet from fire apparatus access. Access roads shall be provided if fire apparatus access distance is exceeded.

2. Access roads shall be of an all-weather surface capable of supporting heavy fire apparatus. Access roads shall be 20 feet in width and have a minimum 13'6" of vertical clearance.

KINGS COUNTY HEALTH DEPARTMENT Contact Lee Johnson at the Kings County Health Department, Division of Environmental Health Services (KCHDEHS) at (559) 852-2631, regarding the following requirements:

1. This facility maintains an existing "Hazardous Materials Inventory and Business Plan" (HMBP) with the KCHDEHS. If the new construction areas will be used to store hazardous materials above reportable quantities, then the HMBP must be updated to reflect this change within 30 days of use.

TULARE COUNTY HEALTH DEPARTMENT (Contact Allison Shuklian at the Tulare County Department of Health and Human Service, Environmental Health Services at (559) 733-6441, regarding the following requirements.)

1. This new facility shall meet the requirements of Division 15 of the Food and Agricultural Code and Title 3 of the California Code of Regulations.

2. The applicant shall provide three (3) sets of detailed plans, of the proposed addition to this facility, to the Tulare County Milk Inspection Service for review and approval prior to issuance of any building permits.

3. No well shall be located within 100 feet of any confined animal enclosure.

4. All corrals, lagoons and crop lands shall be properly managed to prevent a nuisance of odors, dust and vector harborage and breeding.

5. All new sewage disposal systems shall maintain a minimum setback of 100 feet from all wells.

KINGS MOSQUITO ABATEMENT DISTRICT (Contact Steven Giles at the Kings Mosquito Abatement District at (559) 584-3326 regarding the following requirement.):

1. The site shall be maintained as per regulations of the Kings Mosquito Abatement District to control vectors.

2. Variances were issued on August 8, 2008 to allow wastewater holding ponds 400' x 140' and 160' x 100' provided that the overall size should allow for wave action to occur to reduce mosquito larvae production.

3. All wastewater holding and solid separator ponds shall be surrounded by lanes at least twenty feet in width and nothing (i.e., calf pens, utility lines, hay stacks, silage, tires, equipment, etc.) shall be placed in the area of the holding ponds which would prevent passage or use of vector control equipment.

4. Any fencing placed around the wastewater and solids ponds shall be placed outside the twenty foot lanes and gates provided for access.

5. All wastewater designs shall include a solids separation system. If separator ponds are the exclusive means of solids removal, two or more separator ponds are required. These ponds shall not be more than sixty feet in width.

6. No drainage lines shall by-pass the separator ponds, except those which provide for normal corral run-off. All such drains must be sufficiently graded to prevent solids accumulation in the holding ponds.

7. Floatage of any solid substance which could provide harborage for immature mosquito stages shall be kept out of all wastewater holding ponds.

8. The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments, and any weed growth that might become established on the pond surface.

9. Wastewater discharged for irrigation purposes shall be managed so it does not stand for more than four days.

10. Any deviations desired from these requirements must be submitted to the District for prior review and approval.

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT Contact David McDonough at SJVAPCD at (559) 230-5920, regarding the following requirements.)

1. The operator shall comply with all San Joaquin Valley Air Pollution Control District Compliance Assistance Bulletins concerning *Regulation VIII* requirements and SJVAPCD letter dated May 19, 2010, which is included in Appendix A of the Draft EIR.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (Contact Jorge Baca at the Central Valley Region of CRWQCB at (559) 445-6076, regarding the following requirements.)

1. The applicant shall review and comply with all applicable CRWQCB requirements including General Order No. R5-2007-0035, General Order for Existing Milk Cow Dairies.

2. The applicant shall also comply with all necessary corrective measure addressed in the CRWQCB comments letter dated December 31, 2008 and the Review of Report of Waste Discharge dated December 15, 2008, which is included in Appendix A of the Draft EIR.

CALIFORNIA STATE BOARD OF EQUALIZATION (For general information, please call the Board of Equalization at 1-800-400-7115).

1. Sales or use tax may apply to business activities on the site. The applicant may seek written advice regarding the application of tax to your particular business by writing to the nearest State Board of Equalization office.

KINGS COUNTY ASSOCIATION OF GOVERNMENTS (Contact Executive Director, Teri King, at the Kings County Association of Governments at (559) 582-3211, Extension 2678, regarding the following requirements.)

1. Kings County has only three STAA (Surface Transportation Assistance Act) approved routes, State Route 198, State Route 41 and Interstate 5, which may be used by STAA trucks. STAA trucks are, in many cases longer than a “California Legal” truck and may not operate on County roadways.

The foregoing Resolution was adopted on a motion by Commissioner _____ and seconded by Commissioner _____, at a regular meeting held on November 5, 2012, by the following vote:

AYES: COMMISSIONERS
NOES: COMMISSIONERS
ABSTAIN: COMMISSIONERS
ABSENT: COMMISSIONERS

KINGS COUNTY PLANNING COMMISSION

_____
Riley Jones, Chairperson

WITNESS, my hand this _____ day of _____, 2012.

_____
Gregory R. Gatzka
Secretary to the Commission

cc: Kings County Board of Supervisors
Kings County Counsel
Kings County Community Development Agency – Building Division
Kings County Public Works Department
Kings County Fire Department
Kings County Health Department – Division of Environmental Health Services
State of California, Governor's Office of Planning and Research
Regional Water Quality Control Board
Department of Fish and Game
San Joaquin Valley Air Pollution Control District
Kings Mosquito Abatement District
Kings County Association of Governments
Tulare County Department of Health and Human Service, Environmental Health Services
Native American Heritage Commission, 915 Capitol Mall, Room 364, Sacramento, CA 95814
Joe and Mary Sozinho Family Trust, 11447 8 ½ Avenue, Hanford, CA 93230
David Avila, Western Dairy Design, 316 West "F" Street, Suite 100, Oakdale, CA 95361
Bob Zumwalt, Kahn Soares & Conway, LLP, 219 N. Douty Street, Hanford, CA 93230-4645

Exhibits:

1. CEQA Findings of Fact and Statement of Overriding Considerations
2. Mitigation Monitoring Plan (Corrected Table ES-1)

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THE PLANNING COMMISSION
OF THE
COUNTY OF KINGS

FINDINGS OF FACT

AND

STATEMENT OF OVERRIDING CONSIDERATIONS

FOR

SOZHINO DAIRY EXPANSION PROJECT

FINAL ENVIRONMENTAL IMPACT REPORT
(SCH # 20100307/CUP 09-07)

October 2012

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FOR THE

SOZHINO DAIRY EXPANSION PROJECT

FINAL ENVIRONMENTAL IMPACT REPORT
(SCH # 20100307/CUP 09-07)

INTRODUCTION

The Planning Commission of the County of Kings ("County") hereby makes the following Findings of Fact and Statement of Overriding Considerations concerning the Final Environmental Impact Report (SCH #20100307/CUP 09-07) for the Sozhino Dairy Expansion Project ("Project"), pursuant to the California Environmental Quality Act, Public Resources Code § 21000, *et seq.* ("CEQA"), and its implementing regulations, California Code of Regulations, title 14, § 15000, *et seq.* ("CEQA Guidelines").

The Final Environmental Impact Report ("Final EIR") prepared for the Project consists of (1) the Draft EIR (Executive Summary; Introduction, Project Description and Environmental Setting; Setting, Impacts and Mitigation Measures; Evaluation of Alternatives; Cumulative Impacts; Other Mandatory CEQA Sections; and Mitigation Reporting and Monitoring Program) and appendices; (2) any comments received concerning the Draft EIR; and (3) responses to comments. The Final EIR contains the Introduction concerning the CEQA Process in Section One, a Summary of the Draft EIR (Project Description, Project Objective, and Summary of Impacts and Mitigation Measures for the Proposed Project) in Section Two, and Comments, Responses, and Corrections to the Draft EIR in Section Three.

The environmental effects, proposed mitigation measures and alternatives analyzed in the Draft EIR, and the public comments and responses thereto contained in the Final EIR, have influenced the design of the Project. These environmental documents and procedures reflect the County's commitment to incorporate the environmental considerations identified during the CEQA process into the final project design.

1.0 PROJECT DESCRIPTION

1.1 Project Location

The Sozinho Dairy is situated in a rural unincorporated area southeast of Hanford. The address is 11447 8 $^{1}/_{2}$ Avenue. It is located between Hanford-Armona Road to the north, Houston Avenue to the south and west of Highway 43 (see Figures 2-1 and 2-2). The 60.6 acre dairy facility is located within the Remnoy USGS Topographic Quadrangle, in the SW 1/4 of the NE 1/4 of the eastern 1/2 of Section 5, T19 South – Range 22 East, Mount Diablo Base and Meridian. The Kings County Assessor's Parcel Numbers (APNs) for the total dairy site are set forth on page 2-1 of Chapter 2 of Volume 2 (Draft EIR) of the Final EIR.

1.2 Purpose and Need

The existing Sozinho Dairy is currently milking 940 Holstein milk cows with a support stock of 710 for a total herd size of 1,650 head. The owner/applicant has applied for a conditional use permit (CUP) to increase the herd size and associated dairy facilities to 1,650 Holstein milk cows with support stock of 3,466 for a total herd size of 5,116 head. To accommodate the increased number of cows the dairy facility site will be expanded from 46.8 acres to 60.6 acres. It is located at 11447 8 $^{1}/_{2}$ Avenue between Hanford-Armona Road and Houston Avenue.

The project site consists of two existing dairy facilities, the South Dairy and the North Dairy, which would be combined and expanded as a result of Conditional Use Permit No. 09-07. The South Dairy was subject to the requirements of Conditional Use Permit No. 96-06, which allowed a maximum of 530 milk cows and 710 head of support stock for a total of 1,240 head (972.5 animal units). CUP No. 96-06 was approved on March 3, 1997 when the Kings County Planning Commission adopted Resolution No. 97-03. The North Dairy was subject to the requirements of Site Plan Review No. 08-45, which allowed a maximum of 574 animal units. SPR No. 08-45 was approved by the Kings County Zoning Administrator on December 17, 2008.

Subsequent to the approval of CUP No. 96-06 the herd for the South Dairy was expanded well above the permitted levels without first obtaining the required zoning permit. The milk cows increased to 940 and the support stock increased to 1,605 head, for a total of 2,545 head. In addition, numerous facilities were added without first obtaining the required zoning permit. The facilities that were added without obtaining a zoning permit include a large number of additional calf hutches, construction of an equipment shade structure, installation of a tuff shed with an air conditioner and electrical wiring added to the facility, a new lagoon was constructed, six (6) new shade structures were constructed, new corrals were constructed, and construction was started for an addition to a milking parlor.

As a result of the unpermitted herd expansion and the unpermitted addition of new facilities, the South Dairy was issued a Notice of Violation on April 28, 2008. CUP No. 09-07 has been submitted in order to bring the site into compliance with the Dairy Element of the *Kings County General Plan* and the *Kings County Zoning Ordinance*.

1.3 Project Components

The owner/operator of the Sozinho Dairy is currently operating a 940 Holstein milk cow dairy and has applied to Kings County for a Conditional Use Permit (CUP No. 09-07) to expand the number of Holstein milk cows to 1,650 head. The existing and proposed dairy facilities and operations are described in detail in Table 2-1 of the Draft EIR.

The CUP 09-07 application submitted by the owner/operator describes the existing dairy facility site purchased by the applicant in 1979 referred to as the south facility, and a nearby existing dairy facility site purchased by the applicant in 2007, identified as the north facility. Both facilities contain a milking parlor, barns, shades, corrals, and lagoons. To accommodate the increased herd size the combined dairy facility site will be expanded from 46.8 acres to 60.6 acres.

Development of new structures, most of which were constructed prior to the owner/operator's submittal of an application for a Conditional Use Permit, are shown on Figure 2-3. The expansion involves two phases and includes new cattle shades, corrals, hay barns, calf pens and other improvements as listed in Table 2-2 of the Draft EIR.

The Project is designed to maximize the available land for the production of feed to meet the dairy's forage needs, thereby minimizing the necessity for imported feed. The 368 net farmable acres will be planted in corn, sudan and wheat silage (triple cropped). Throughout the year, water in the retention/anaerobic processing ponds will be used as a fertilizer additive, mixed with clear irrigation water, subject to agronomic requirements of the triple cropping schedule, to irrigate the cropping fields associated with the dairy.

The dairy facility will house milking cows, dry cows, heifers and calves in flushed freestalls, flushed corrals, and scraped corrals as shown in Table 2-3 of the Draft EIR. A system of lagoons will be used for treating and storing dairy process water and manure. All corrals, lanes, and other areas occupied by cows will be graded to ensure runoff water will flow into and be contained within the lagoon system until used for fertilizer or irrigation purposes

The Project is described in greater detail in Chapter 2.0 (Project Description and Environmental Setting) of the Draft EIR.

1.4 Project Objectives

The objective of the Project is to expand and operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA.

2.0 ENVIRONMENTAL PROCEDURES

2.1 Lead Agency

Pursuant to CEQA Guidelines §15367, the County is the "lead agency" for the purpose of preparing the environmental review required by CEQA. The environmental review prepared by the County will be used by the Planning Commission and other state and local agencies in their respective decisions regarding the following actions associated with the Project:

- Approval by Kings County of a Conditional Use Permit (CUP 09-07);
- Acceptance by the California Regional Water Quality Control Board, Central Valley Region of a Report of Waste Discharge;
- Issuance of an Authority to Construct (ATC) and Permit to Operate (PTO) by the San Joaquin Valley Air Pollution Control District; and
- Issuance of a Dairy Permit by the California Department of Food and Agriculture (CDFA).

2.2 Prior Environmental Documents

CEQA provides that: if a proposed project is consistent with the General Plan of a local agency and an EIR was certified with respect to that General Plan, the environmental review of the proposed project shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior EIR or which substantial new information shows will be more significant than described in the prior EIR. (Public Resources Code § 21083.3(b); CEQA Guidelines § 15183.(a).) This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

A program environmental impact report (PEIR), pursuant to Section 15168 of the CEQA Guidelines was prepared and certified in support of the Dairy Element of the Kings County General Plan which was subsequently adopted by the Kings County Board of Supervisors on July 30, 2002. The PEIR provided the required environmental assessment for the adoption of the Dairy Element, and the construction of projects that meet the standards established in the PEIR. The Dairy Element addressed all of the potentially significant impacts that were

identified and provided mitigation measures that reduced most of the impacts to a level that was less than significant. Projects that do not meet the standards in the PEIR and thus require further environmental review, may utilize information in the PEIR to complete the environmental review required under CEQA. The PEIR was included by reference in the Dairy Element and was included by reference in the Final EIR for the Project and was made a part thereof. The PEIR for the Dairy Element is available for review at the Kings County Community Development Agency, Building No. 6, Kings County Government Center, 1400 W. Lacey Blvd., Hanford, California and on the Kings County Community Development Agency website at www.countyofkings.com/planning/dairy.html.

In addition, CEQA Guidelines section 15183(b) provides that: in approving a project meeting the requirements of this section, a lead agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis, are peculiar to the project or the parcel on which the project would be located, were not analyzed as significant effects in a prior EIR on the General Plan or community plan with which the project is consistent, are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the General Plan, or are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

Pursuant to Section 15183(b) of the CEQA Guidelines, an Initial Study of the potential environmental effects of the expansion and operation of the Project was prepared and mailed to local, state and federal agencies, and to other interested agencies and citizen groups on May 5, 2010. Appendix A of the Draft EIR contains a copy of the Sozinho Dairy Expansion Initial Study. The Initial Study determined that the Project will not have significant effects on Aesthetics, Agriculture and Forest Resources, Biological Resources, Cultural Resources, Geology/Soils, Hazards and Hazardous Materials, Mineral Resources, Hydrology and Water Quality, Noise, Population and Housing, Public Services and Recreation. The Initial Study further determined that the Project may have the following significant effects on the environment which are peculiar to the Project and which were not analyzed in the PEIR: Air Quality, including potential short and long-term air quality impacts associated with the Project; Greenhouse Gas Emissions, including the conditions and operations that produce greenhouse gases; and Land Use, including potential impacts on surrounding land uses and impacts related to project compliance with Kings County Dairy Element, land use regulations, and zoning. Therefore, the County undertook preparation of an EIR for the Project.

2.3 Environmental Impact Report

Pursuant to CEQA Guidelines §15080, *et seq.*, the County prepared an Environmental Impact Report ("EIR") to analyze the potential impacts of the

Project on the environment. The Final EIR consists of (1) the Draft EIR and appendices; (2) any comments received concerning the Draft EIR; and (3) responses to these comments. The Final EIR contains all of the information required by CEQA Guidelines §15132.

2.4 Dairy Element Compliance

As required by the Dairy Element of the Kings County General Plan, the owner/operator prepared and submitted the Sozinho Dairy Technical Report to the Kings County Community Development Agency on August 31, 2009 (Appendix H of the Draft EIR). The Kings County Community Development Agency determined the Sozinho Dairy Technical Report and Dairy Site Plan deviated from the Dairy Element's policies and standards and that additional environmental review was required. A copy of Dairy Element Findings for Conditional Use Permit No. 09-07, Sozinho Dairy is included in the Draft EIR as Appendix G.

Section III.B, on Page DE-18 of the Dairy Element, states that when the expansion of an existing dairy does not or cannot meet all regulations, policies, mitigation requirements, standards, etc. in the Dairy Element, the application will be processed as an application for a conditional use permit (CUP). The review of such a CUP will include CEQA review beyond the Program EIR, which may include tiering of environmental documents as appropriate.

Objective DE 2.1, on Page DE-18 of the Dairy Element, states that any additional environmental review associated with the CUP process shall only be required to address the deviation from the Dairy Element site plan review process requirements.

Policy DE 2.1g, on Page DE-20 of the Dairy Element, states that an application that does not, or cannot, meet all regulations, policies, mitigation requirements, standards, etc. of the Dairy Element shall be submitted as an application for a conditional use permit (CUP) which will include additional environmental review. The Planning Commission may consider alternatives to the Dairy Element's regulations, policies, mitigation requirements, standards, etc., but must ensure that any alternative accomplish the same or higher level of performance as required by the Dairy Element, thus ensuring that the project is consistent with the Dairy Element of the General Plan.

Based on Objective DE 2.1 and Policy DE 2.1g of the Dairy Element, the Draft EIR is only required to analyze the areas of the Project that deviate from the standards of the Dairy Element. No additional environmental review is required for areas of the Project that comply with the standards of the Dairy Element. The Dairy Element Findings for Conditional Use Permit No. 09-07 (see Draft EIR, Appendix G) document the areas of the Project that are consistent with the standards of the Dairy Element. The Dairy Element Findings for Conditional Use

Permit No. 09-07 also document the areas of the Project that deviate from the standards of the Dairy Element.

2.5 Public Participation

Environmental review of the Project began on May 6, 2010, with the publication of a Notice of Preparation (NOP) of the EIR and a 30-day public review period for the NOP and the Initial Study. The Draft EIR was completed and made available for public review on May 4, 2012. The 45-day public review period required by CEQA began on May 4, 2012, and ended on June 15, 2012. One public agency, the Native American Heritage Commission, provided comments on the Draft EIR. No comments on the Draft EIR were received from any private organization or individual member of the public. The comments of the Native American Heritage Commission and the County's response to them are included in the Final EIR as required by CEQA Guidelines sections 15088 and 15132. The Final EIR was completed and the County's responses to comments were made available for review on October 26, 2012. A public hearing concerning certification of the Final EIR was held by the Planning Commission on November 5, 2012, at which interested agencies, organizations and persons were given an opportunity to comment on the Final EIR and the Project.

2.6 Record of Proceedings

For purposes of CEQA and the findings set forth below, the administrative record of the County's decision concerning certification of the Final EIR for the Project shall include the following:

- The Draft EIR (April 2012);
- The Final EIR (July 2012);
- The Errata to the Final EIR (October 2012);
- The appendices to the Draft EIR;
- All documents and other materials listed as references and/or incorporated by reference in the Draft EIR, and Final EIR, including but not limited to the materials identified in the Draft EIR, Chapter 9 (Bibliography);
- The Final Program Environmental Impact Report certified in support of the Dairy Element of the Kings County General Plan by the Kings County Board of Supervisors on July 30, 2002;
- All reports, applications, memoranda, maps, letters, and other documents prepared by the County staff and consultants for the Project which are

before the Planning Commission;

- All documents or other materials submitted by interested persons and public agencies in connection with the Draft EIR and the Final EIR;

- The minutes, tape recordings, and verbatim transcripts, if any, of the public hearing held on November 5, 2012, concerning the Final EIR and the Project; and

- Matters of common knowledge to the Planning Commission and the County, including but not limited to the Kings County General Plan.

The custodian of the documents and other materials comprising the administrative record of the County's decision concerning certification of the Final EIR is the Community Development Agency of the County of Kings. The location of the administrative record is the Community Development Agency's office at Building No. 6, Kings County Government Center, 1400 West Lacey Boulevard, Hanford, California 93230. (Public Resources Code § 21081.6(a)(2).)

3.0 FINDINGS UNDER CEQA

3.1 Purpose

CEQA requires the County to make written findings of fact for each significant environmental impact identified in the Final EIR (CEQA Guidelines §15091). The purpose of the findings is to systematically restate the significant effects of the Project on the environment and to determine the feasibility of mitigation measures and alternatives identified in the Final EIR which would avoid or substantially lessen the significant effects. Once it has adopted sufficient measures to avoid or substantially lessen a significant impact, the County is not required to adopt every mitigation measure identified in the Final EIR or otherwise brought to its attention. If significant impacts remain after application of all feasible mitigation measures, the County must review the alternatives identified in the Final EIR and determine if they are feasible. These findings set forth the reasons, and the evidence in support of, the County's determinations.

3.2 Terminology

A "finding" is a written statement made by the County which explains how it dealt with each significant impact and alternative identified in the Final EIR. Each finding contains an ultimate conclusion regarding each significant impact, substantial evidence supporting the conclusion, and an explanation of how the substantial evidence supports the conclusion.

For each significant effect identified in the Final EIR, the County is required by CEQA to make a written finding reaching one or more of the following

conclusions:

(1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effect identified in the EIR;

(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency; or

(3) Specific legal, economic, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR (CEQA Guidelines §15091(a)).

A mitigation measure or an alternative is considered "feasible" if it is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors (CEQA Guidelines §15364).

3.3 Legal Effect

To the extent these findings conclude mitigation measures identified in the Final EIR are feasible and have not been modified, superseded or withdrawn, the County hereby binds itself and any other responsible parties, including the Project Applicant and their successors in interest, to implement those mitigation measures. These findings are not merely informational, but constitute a binding set of obligations upon the County and responsible parties, which will take effect if and when the County adopts a resolution certifying the Final EIR and the County and/or the responsible agencies adopt resolution(s) approving the Project.

3.4 Mitigation Monitoring and Reporting Program

In adopting these findings, the County also adopts a mitigation monitoring and reporting program pursuant to Public Resources Code §21081.6. This program is designed to ensure the Project complies with the feasible mitigation measures identified below during implementation of the Project. The Mitigation Monitoring and Reporting Program is set forth in Chapter 7 of the Draft EIR and is adopted by the County concurrently with these findings and is incorporated herein by this reference.

4.0 FINDINGS REGARDING DIRECT SIGNIFICANT EFFECTS

The Project will result in project-related significant environmental effects with respect to Air Quality (Toxic Air Emissions Health Risk, Operational Emission of Criteria Pollutants, $PM_{2.5,}$ Operational Emission of Criteria Pollutants, Volatile Organic Compounds (VOCs), Methane Emissions, Ammonia Emissions, Odor

Emissions and Ambient Air Quality), and Land Use (Separation of dairy facilities by ¼ mile, Residences within ¼ mile). These significant environmental effects, and the mitigation measures identified to avoid or substantially lessen them, are discussed in detail in Chapter 3 of the Draft EIR, Sections 3.1 (Air Quality) and 3.3 (Land Use). A summary of significant impacts and mitigation measures for the Project is set forth in Section Two of the Final EIR, Table ES-1, Summary of Potentially Significant Impacts and Mitigation Measures, and in Table ES-2, Summary of Impacts Which Remain Significant After Mitigation.

Set forth below are the findings regarding the potential project-related significant effects of the Project. The findings incorporate by reference the discussion of potential significant impacts and mitigation measures contained in the Draft EIR (see Chapter 3). The Final EIR, which includes the Draft EIR and appendices, is referred to in the findings below as the "EIR."

4.1 Air Quality (Toxic Air Emissions Health Risk)

Potentially Significant Impact: The EIR identifies a potential significant impact to Air Quality (Toxic Air Emissions Health Risk) in that the Project will increase the predicted individual lifetime cancer risk above the San Joaquin Valley Air Pollution Control District (SJVAPCD) significance threshold at five residential dwellings and also exceed the acute hazard index at seven non-residential sites to the southwest within $^{1}/_{4}$ mile of the dairy site boundary. Detailed information and analysis regarding this significant potential impact is provided in Volume 2 (Draft EIR), Section 3.1 (Impact # 3.1.1) of the EIR.

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Toxic Air Emissions Health Risk) identified in the EIR, but not to a level below significance; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: A human health risk assessment (HRA) of air toxic emissions associated with the dairy operations was performed, which predicted individual lifetime cancer risk and non-cancer health hazard indices at residential and non-residential receptors in the vicinity of the Project site. The HRA was performed using guidelines from the Office of Environmental Health Hazards Assessment and the San Joaquin Valley Air Pollution Control District (SJVAPCD). Maximum off-site health risk values associated with dairy operations were determined for the existing site and Project. The health risks of the Project relative to the existing site (i.e., proposed project plus existing site) were compared to the SJVAPCD's risk thresholds. The risk results represent the maximum project impacts relative to the existing site. The maximum individual

lifetime cancer risk increment at an off-site residential receptor is predicted to be 13 in a million, at a residence located east of the dairy, west of 8th Avenue (residence #7 on Figure 3.1-2). The risk impact at this receptor would exceed the SJVAPCD significance threshold of 10 in a million. The maximum acute hazard index at a residential receptor located south-southwest of the dairy (residence #14 on Figure 3.1-2) is predicted to be 1.8. The acute hazard at this receptor would exceed the SJVAPCD significance threshold of 1.0. The Project will increase the predicted individual lifetime cancer risk above the SJVAPCD significance threshold at five residential dwellings and also exceed the acute hazard index at seven non-residential sites to the southwest within $^1/_4$ mile of the dairy site boundary. The potential significant impact to Air Quality (Toxic Air Emissions Health Risk) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing the following measure described in Mitigation Measure 3.1.1, which is set forth in full in the Draft EIR, Section 3.1 (Biological Resources Mitigation Measures), pages 3.1-30 through 3.1-31:

- Cattle Housing Dust ($PM_{2.5}$)

    1. Paved feedlanes, where present shall be a width of at least 8 feet along the corral side of the feedlane fence for milk and dry cows and at least 6 feet along the corral side of the feedlane for heifers; and

    2. Scrape, vacuum, or flush concrete lanes in corrals at least once every day for mature cows and every 7 days for support stock.

- Dairy Equipment and Truck Exhaust Emissions - Nitrogen Oxide (NOx)

    1. The idling time of all equipment used at the site shall not exceed five minutes;

    2. As much as possible, alternative fueled or catalyst-equipped diesel equipment shall be used at the dairy site;

    3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when available provided they are not run via a portable generator; and

    4. Employees shall be encouraged to carpool-travel to and from the dairy site.

- Volatile Organic Compounds (VOC), Ammonia (NH_3) and Hydrogen Sulfide (H_2S) Emissions:

    1. Remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every seven days.

Implementation of this mitigation measure will reduce but not eliminate

operational emissions of $PM_{2.5}$, NOx, VOC, NH_3, and H_2S, and the impact will remain significant. Therefore, despite the incorporation of Mitigation Measure 3.1.1, the Project's impact on Air Quality (Toxic Air Emissions Health Risk) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.2 Air Quality (Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts)

Potentially Significant Impact: The EIR identifies potentially significant impacts to Air Quality (Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts) in that due to the relatively large project area and projected intensity of dust-producing activities during construction, $PM_{10}/PM_{2.5}$ emissions generated during construction will constitute a temporary potentially significant impact, possibly exposing residents downwind to elevated PM_{10} concentrations and contributing to the regional $PM_{10}/PM_{2.5}$ emission burden. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.2).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which avoid or substantially lessen the significant environmental effect to Air Quality (Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts) as identified in the EIR.

Facts in Support of Finding: Project construction will result in numerous activities that generate dust. Construction activities associated with project development include site preparation, soil excavation, grading, equipment traffic on paved and unpaved surfaces, and the construction of dairy structures. Grading, earthmoving and excavation are the activities that generate the most PM_{10} and $PM_{2.5}$ emissions. The duration of construction for the Project is projected to be six to nine months. According to SJVAPCD guidance, control measures are applicable to construction projects that would be expected to generate large $PM_{10}/PM_{2.5}$ emissions, and additional control measures are applicable to project with large construction sites, located near sensitive receptors, or that for other reasons warrant additional emissions reductions. The SJVAPCD has developed a menu of $PM_{10}/PM_{2.5}$ control options that define the minimum content of a construction dust control program. Regulation VIII control measures are required for all construction projects to reduce the amount of $PM_{10}/PM_{2.5}$ emissions generated from fugitive dust sources. As required by the Dairy Element of the Kings County General Plan, the owner/applicant has prepared a Fugitive Dust Emissions Control Plan (FDECP) that is in compliance with the SJVAPCD's Regulation VIII emission control measures. A copy of the FDECP is contained in Appendix H - Sozinho Dairy Technical Report (pages 105-110) in the Draft EIR. From the perspective of the SJVAPCD, compliance with Regulation VIII and implementation of the Project-pertinent SJVPACD

control measures will constitute sufficient mitigation to reduce PM_{10} impacts to a level below significance. Therefore, the potential significant impact to Air Quality (Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts) will be mitigated to a level less than significant through the Project Applicant's preparation and submittal of an FDECP. Implementation of this measure will reduce the potential impact to Air Quality (Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts) to a level less than significant.

4.3 Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$))

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$)) in that PM_{10}/$PM_{2.5}$ will be generated by several activities associated with dairy operations, principally dust from cattle movement on and periodic maintenance of unpaved surfaces, and continued farming operations. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.4).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$)) identified in the EIR, but not to a level below significance; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: PM_{10}/$PM_{2.5}$ will be generated by several activities associated with the Project's dairy operations, principally dust from cattle movement on and periodic maintenance of unpaved surfaces, and continued farming operations. $PM_{2.5}$ emissions are calculated based on conversion of PM_{10} to $PM_{2.5}$ by multiplying CARB-derived fractions for each source category. Ammonia (NH_3) emissions would act as a precursor of $PM_{2.5}$ in the atmosphere. To calculate $PM_{2.5}$ from ammonia emissions is analogous to the quantification of emissions of VOC and NOx as precursors to the formation of ozone. Just as it is not possible to convert new emissions of ozone precursors into amounts of concentrations of ozone in the atmosphere, it cannot be done for ammonia-related $PM_{2.5}$. Given the current uncertainty in emission rates for ammonia and the lack of a method of calculating $PM_{2.5}$ conversion from ammonia emissions, any calculation of secondary $PM_{2.5}$ would be speculative. Absent such speculation, and based on best available data for PM_{10} emissions from fugitive dust, annual emissions of PM_{10} and $PM_{2.5}$ have been estimated and are included in Table 3.1-6 of Volume 2 (Draft EIR), Section 3.1 of the Final EIR. Existing emissions (farming related) include emission control measures in place; project emissions for this project also include emission control measures

described in Sections 2.1 and 2.2 of the Air Quality Methodology and Assumptions Report attached as Appendix B in the Draft EIR. The Project would result in an increase in PM_{10} of 9 tons per year, which is less than the 15 tons per year SJVAPCD threshold and thus will not have a significant PM_{10} impact. In the absence of a significance threshold, the EIR concluded that the $PM_{2.5}$ emissions from the Project would be potentially significant. The potential significant impact to Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$)) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (Draft EIR, Section 3.1, pp. 3-30 and 3-31) and Mitigation Measure #3.3.2 (Draft EIR, Section 3.1, pp. 3-58 - 3-60). Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$)), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Operational Emission of Fine Particulate Matter ($PM_{2.5}$)) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.4 Air Quality (Operational Emission of Volatile Organic Compound)

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Operational Emission of Volatile Organic Compound) in that the Project would result in a significant increase in VOC emissions, primarily directly from cows and from manure decomposition that would exceed the SJVAPCD threshold of significance. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.5).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Operational Emission of Volatile Organic Compound) identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines §15091(a)(3), specific economic considerations make infeasible one of the mitigation measures identified in the EIR; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Volatile organic compounds (VOCs) are photo-chemically reactive hydrocarbons that are precursors of ozone formation. Project-related VOCs are principally generated by direct emissions from cows and by manure decomposition. The San Joaquin Valley Air Pollution Control District will consider implementation of various "Best Available Control Technology" mitigation measures as conditions of issuance of an Authority to Construct (ATC) the dairy facility. The alternative measures are enumerated in SJVAPCD Rule 4570. Existing VOC emissions are 28.9 tons per year. The Project would increase VOC emissions to 56.5 tons per year, a net increase of 27.5 tons, which would result in an increase in VOC emissions, primarily directly from cows and from manure decomposition that would exceed the SJVAPCD threshold of significance and would be significant. The Project's increase in VOC emissions reflects the emission control measures that have been implemented by the owner/operator and are described in detail in the Draft EIR, Section 3.1, page 3.1-35. Reduction of VOCs will also be accomplished with implementation of Kings County Dairy Element Polices DE 4.1a through DE 4.2b (Appendix F) which provides for specific and comprehensive manure nutrient management techniques in the operation of dairies. The EIR also evaluated whether dairy cows could be housed in an enclosed building with biofiltration of exhaust air therefrom as a VOC (and greenhouse gas) mitigation measure. The capital and operating costs for such housing and biofiltration for dairy cows in the San Joaquin Valley have been estimated by the SJVAPCD for a 3,500 milk cow dairy (Authority to Construct Application Review, Lemstra Cattle Company, September 5, 2007). The capital cost for the biofilter alone, not including housing or duct work, was estimated to be $11,371,486. The resulting cost of VOC emission reductions was estimated to range from $67,584 to $86,548 per ton, far in excess of the SJVAPCD's Best Available Control Technologies (BACTs) standard of $17,500 per ton. Annual operating costs were estimated to be $1,635,363 to $1,850,657 per year. Such costs clearly render the biofilitration mitigation measure, whether designed for VOC removal or greenhouse gas reduction, infeasible for the Project. Therefore, the potential significant impact to Air Quality (Operational Emission of Volatile Organic Compound) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (Draft EIR, Section 3.1, pp. 3-30 and 3-31) and Mitigation Measure #3.3.2 (Draft EIR, Section 3.1, pp. 3-58 - 3-60). Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Operational Emission of Volatile Organic Compound), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Operational Emission of Volatile Organic Compound) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.5 Air Quality (Methane (CH_4) Generation)

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Methane (CH_4) Generation) in that Project will result in the emission of methane from the breakdown of cellulose fiber by bacteria in cattle stomachs and the decomposition of manure in cattle housing areas including freestalls, flushed corrals and dry lots, the spreading of manure and liquid manure in the fields, the storage of fermented feed silage, and as emissions from lagoons. Detailed information and analysis regarding this significant potential impact is provided in Volume 2 (Draft EIR), Section 3.1 (Impact # 3.1.7) of the EIR.

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Methane (CH_4) Generation) identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines §15091(a)(3), specific economic considerations make infeasible one of the mitigation measures identified in the EIR; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Methane (CH_4) is generated by the breakdown of cellulose fiber by bacteria in cattle stomachs and the decomposition of manure in cattle housing areas including freestalls, flushed corrals and dry lots, the spreading of manure and liquid manure in the fields, the storage of fermented feed silage, and as emissions from lagoons. The Project-related CH_4 emissions are 940 tons per year, which constitute a net increase in the CH_4 emissions of 547 tons per year. Because there are no local or State guidelines or thresholds of significance for determining the significance of methane emissions, the EIR determined the project-level impacts are significant. Methane generation impacts are reduced by project-level management practices that are listed in the discussion section for Impact #3.1.5, which includes measures from SJVAPCD's Rule 4570 list of options. Rule 4570 contains mitigation measures to limit emissions of volatile organic compounds (VOC) from confined animal facilities. One measure that could be required by the SJVAPCD is the installation and operation of a covered anaerobic treatment lagoon ("digester") that would reduce VOC and methane emissions from these lagoons. Although there is increasing interest in digesters, the installation and operation of dairy waste digesters currently are experimental and largely government subsidized. In addition, evaluations of the economic and technological feasibility of digester technologies demonstrates that digesters with on-site power generation are not feasible for the Project because there are no utility company transmission lines near the Project to which generated gas can be transferred. Therefore, the potential significant impact to Air Quality (Methane (CH_4) Generation) will be mitigated, but not to a

level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rule 4570 (see Appendix D); in Dairy Element Policies DE 4.1a through DE 4.2b (see Appendix F). Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Methane (CH_4) Generation), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Methane (CH_4) Generation) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.6 Air Quality (Ammonia (NH_3) Generation)

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Ammonia (NH_3) Generation) in that Project will result in the emission of ammonia produced during anaerobic decomposition of manure which, when combined in the atmosphere with other pollutants, may produce particulate matter that can decrease air quality and visibility. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.8).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Ammonia (NH_3) Generation) identified in the EIR, but not to a level below significance; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Ammonia (NH_3) is produced during anaerobic decomposition of manure wherever cows are housed. Ammonia emissions, when combined in the atmosphere with other pollutants may produce particulate matter that can decrease air quality and visibility. Factors that influence ammonia production are similar to those which impact milk production and VOC emissions. There is no methodology to contain the ammonia, and it will likely disperse in relatively low concentrations over the entire site. At the low levels of concentration on dairy facilities sites it is unlikely to cause adverse affects in the human population, including sensitive receptors. The proposed project would create 70.6 tons of airborne ammonia per year. (Draft EIR, Section 3.1, Table 3.1-6.) Because there are no local or State guidelines or thresholds of significance for determining the significance of ammonia emissions, the EIR determined the project-level impacts are significant. Ammonia generation impacts are reduced by project-level management practices that are listed in the discussion section for Impact #3.1.5, which includes measures from SJVAPCD's Rule 4570 list of options. Therefore, the potential significant impact to Air Quality (Amonia (NH_3) Generation) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures

incorporated in the SJVAPCD's Rule 4570 (see Appendix D); in Dairy Element Policies DE 4.1a through DE 4.2b (see Appendix F). Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Amonia (NH_3) Generation), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Amonia (NH_3) Generation) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.7 Air Quality (Odor Emissions)

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Odor Emissions) in that Project will result in the emission of odors formed from dairy operations, including corrals, lagoons, and freestalls. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.9).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Odor Emissions) identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Odor emissions are produced from dairy operations, including corrals, lagoons, and freestalls, in a complex process. Odor formation is most rapid during hot weather when anaerobic conditions set in the fastest. Conversely, atmospheric dispersion is best when heated surfaces induce gusty winds and convective turbulence. There is therefore no time of day when odor potential is minimized. Odors "generate" faster in the day, but disperse faster, while slower nocturnal chemistry is offset by more stagnant meteorology. The EIR employed the procedure outlined for odor analysis in the SJVAPCD's "Guide for Assessing and Mitigating Air Quality Impacts" (GAMAQI), including the identification of the location of sensitive receptors, which showed there are 14 off-site dwelling units within one-quarter mile of the Project site and that no odor complaints for dairy facilities in the area of the project have been filed with the Kings County Community Development Agency or the SJVAPCD. The EIR also performed dispersion modeling of ammonia (NH_3) and hydrogen sulfide (H_2S) emissions associated with proposed dairy operations (see Air Quality Methodologies and Assumptions, Appendix B). The analysis predicted maximum 1-hour NH_3 and H_2S concentrations at residential and non-residential receptors in the vicinity of the project site. Because the odor thresholds are absolute concentrations, the odor impact analysis evaluated concentrations associated with the Project by itself (*not* the proposed project minus existing site). The maximum 1-hour NH_3 concentration is below the odor detection

threshold. The maximum 1-hour H_2S concentration at an off-site residential receptor is predicted to be 76 $\mu g/m^3$, at a residence located south-southwest of the dairy (residence #14 on Figure 3.2-2). This concentration would exceed the odor threshold of 11 $\mu g/m^3$. A subsequent modeling analysis of this peak receptor location shows that the threshold of 11 $\mu g/m^3$ would be exceeded in approximately 2 percent of all hours. The odor threshold would also be exceeded at 26 other residential receptors in the project vicinity. Based upon the modeling results that the project will exceed the maximum 1-hour hydrogen sulfide (H_2S) concentration threshold at 27 residential receptors, the EIR determined that the Project would have significant impacts related to odor emissions. Therefore, the potential significant impact to Air Quality (Odor Emissions) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rule 4550 and Rule 4570 (see Appendix D), in Dairy Element Policies DE 4.1a, DE 4.1b, DE 4.1d and DE 5.1b (see Appendix F), and by the preparation and filing of an Odor Management Plan (OMP) with the Community Development Agency as required by the Kings County Dairy Element. A copy of the OMP is in the Sozinho Dairy Technical Report (pages 45-51) located in Appendix H in the EIR. Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Odor Emissions), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Odor Emissions) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.8 Air Quality (Ambient Air Quality)

Potentially Significant Impact: The EIR identifies a potentially significant impact to Air Quality (Ambient Air Quality) in that Project operations will exceed SJVAPCD's threshold and will represent a significant contribution to an existing violation of the 24-hour PM_{10} ambient air quality standard. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.11).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Air Quality (Ambient Air Quality) identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Air quality emissions from dairy operations such as cattle housing dust, diesel powered dairy equipment exhaust, truck exhaust emissions while traveling within the dairy and road dust from trucks traveling within the dairy, contribute to 24-hour PM_{10} concentrations in the project

area. The EIR used EPA's AERMOD dispersion model (EPA, 2006b), version 09292, to predict ambient PM_{10} concentrations and to quantify air-borne particulate concentrations near the project site during dairy operations. The dispersion modeling was based on historical meteorological observations, the physical layout of the project site, and the estimated PM_{10} emission rates for the dairy-related sources. Maximum off-site 24-hour PM_{10} concentrations associated with Project operations were determined for existing conditions and the proposed project, respectively. The total impacts of the Project relative to existing conditions were compared to the SJVAPCD; threshold concentration of 10.4 $\mu g/m^3$. The SJVAPCD considers an exceedence of this threshold to represent a significant contribution to an existing violation of the 24-hour PM_{10} ambient air quality standard. AERMOD predicted 24-hour average pollutant concentrations in the air at each receptor location for each day of meteorological data. The results presented in this study reflect the highest 24-hour concentration predicted at any off-site modeled receptor location over the entire five years of meteorological data. Therefore, the model results represent a worst-case day; pollutant concentrations during most other days during the year would be less than, and often much less than, the reported values because of more favorable meteorological conditions. At the maximum receptor, the peak 24-hour PM_{10} concentration associated with the Project was predicted to be 96.7 $\mu g/m^3$, and the peak concentration associated with the existing site was predicted to be 9.2 $\mu g/m^3$. Therefore, the project increment is 87.4 $\mu g/m^3$ (96.7 minus 9.2, rounded off), which exceeds the SJVPACD threshold of 10.4 $\mu g/m^3$. A subsequent modeling analysis of this peak location shows that the threshold of 10.4 $\mu g/m^3$ would be exceeded on approximately 4 percent of all days. Based upon the modeling results, the EIR determined that the Project would have a significant impact related to ambient air quality. Therefore, the potential significant impact to Air Quality (Ambient Air Quality) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing all feasible control measures incorporated in the SJVAPCD's Rule 4550 and Rule 4570 (see Appendix D), in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g and DE 5.1h (see Appendix F), and Mitigation Measure #3.1.1 (Draft EIR, pp. 3-30 and 3-31) and Mitigation Measure #3.3.2 (Draft EIR, pp. 3-58 - 3-60). Implementation of these mitigation measures will reduce but not eliminate the significant impact on Air Quality (Ambient Air Quality), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's impact on Air Quality (Ambient Air Quality) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

4.9 Land Use (Separation of Dairy Facilities by ¼ Mile)

Potentially Significant Impact: The EIR identifies potentially significant impacts to Land Use (Separation of Dairy Facilities by ¼ Mile) in that the Project would further reduce the separation between the Sozinho Dairy facility site and the Soares Heifer Ranch facility from approximately 741 feet to approximately

392 feet and conflict with Kings County General Plan Dairy Element Policy DE 1.2h. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.3 (Impact # 3.3.1).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which avoid or substantially lessen the significant environmental effect to Land Use (Separation of Dairy Facilities by ¼ Mile) as identified in the EIR.

Facts in Support of Finding: Kings County General Plan Dairy Element Policy DE 1.2h requires a minimum distance of one-quarter ($^1/_4$) mile between a dairy facility and other dairy facilities or confined animal feeding operations in order to avoid potential nuisance problems, potential inter-herd disease transmission, soil and groundwater contamination, and cumulative air quality degradation. This restriction includes only the actual dairy facilities, i.e., corrals, milk barns, feed storage areas, manure storage areas, etc., but not cropland used to spread dairy process water and manure. An existing dairy which proposes to decrease the separation between its dairy facilities and another dairy's facilities to less than ¼ mile may do so only after approval of a CUP by the Planning Commission. The Project would conflict with Dairy Element Policy DE 1.2h in that it would reduce the separation between the Project site and the Soares Heifer Ranch facility from approximately 741 feet to approximately 392 feet. The potential significant impact to Land Use (Separation of Dairy Facilities by ¼ Mile) will be mitigated to a level less than significant through a significant portion of the required mitigation measures set forth in the EIR, together with mitigation measures detailed in Tables 3.1 and 4.1 of the SJVAPCD's Rule 4570, which will accomplish the same or higher level of performance as required by the Dairy Element, thus ensuring that the project is consistent with the Dairy Element of the General Plan (Policy DE 2.1g). In addition, as set forth in Mitigation Measure #3.3.2, the owner/operator shall be required to install and maintain a downwind windbreak/shelterbelt along the east and south boundary of the dairy facility site. Consisting of evergreen shrubs and trees, this dust and odor windbreak acts as a filter trapping dust particulates. The owner/operator also shall be required to implement the control measures incorporated into the Odor Management Plan (Policy and Fugitive Dust Emissions Control Plan (DE 5.1b, and 6.2d) and the Fugitive Dust Emissions Control Plan (Policy DE 5.1g, and 5.1h) contained in the Sozinho Dairy Technical Report (Appendix H, pages 48-50 and 104-110). Finally, the owner/operator shall be required to implement the control measures detailed in the Comprehensive Dairy Process Water Application Plan (Policies DE 4.2, 4.2a, 4.2b, 4.2c, and 4.2d) and the Manure Nutrient Management Plan (Policies 4.1a, 4.1b, 4.1c, 4.1e, and 4.1f) detailed in Sozinho Dairy Technical Report (pages 45-47 and 26-39), which describe the dairy management practices for handling manure properly to prevent water pollution. Implementation of these mitigation measures will reduce the potential impact to Land Use (Separation of Dairy Facilities by ¼ Mile) to a level less than significant.

4.10 Land Use (Residences ¼ Mile of a Dairy Facility)

Potentially Significant Impact: The EIR identifies potentially significant impacts to Land Use (Residences ¼ Mile of a Dairy Facility) in that the Project would further reduce the distance between the existing dairy facility site and the existing rural residences situated within ¼ mile of this Project and conflict with Kings County General Plan Dairy Element Policy DE 3.1c. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.3 (Impact # 3.3.2).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant environmental effect to Land Use (Residences ¼ Mile of a Dairy Facility) identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Kings County General Plan Dairy Element Policy DE 3.1c states that, when nearby rural residences that are not associated with the dairy are within one-quarter ($^1/_4$) mile of a proposed expansion of an existing Dairy Facility, the new improvements of the Dairy Facility shall be located so that the existing separation shall not be reduced. The owner/operator initiated expansion activities at the Sozinho Dairy without first obtaining approval through the Site Plan Review (SPR) process and the expanded portion of the dairy facility reduced the separation distance to some of the residences within ¼ mile of the dairy. A primary concern associated with residential dwellings located near a dairy is dust and odors emitted from these facilities. Construction and operational activities of the Project will be governed by the Dairy Element and the SJVAPCD rules and regulations. With respect to control of dust and odors, the owner/operator is required to implement an Odor Management Plan (pages 49 and 50) and Fugitive Dust Emissions Control Plan (pages 105-110) contained in the Sozinho Dairy Technical Report (Appendix H). The owner/operator is also required to implement Mitigation Measure # 3.3.2, which requires installation and maintenance of a downwind windbreak/shelterbelt along the east and south boundary of the Project site, consisting of evergreen shrubs and trees that meet the USDA National Resources Conservation Service (NRCS) Windbreak/Shelterbelt Establishment Standard (380). As not all dairy facility dust is contained on site, a windbreak will encourage deposition of dust particles that transport odors and intercept and filter odors and dust particles already airborne. Installation of trees and shrubs thus will provide an additional layer of dust and odor control and will accomplish a higher level performance than is required by the Dairy Element. However, Mitigation Measure # 3.3.2 will not reduce air quality or greenhouse gas impacts to a less than significant level and air quality impacts associated with the Project remain significant. Therefore, the potential

significant impact to Land Use (Residences ¼ Mile of a Dairy Facility) will be mitigated, but not to a level less than significant. Despite the incorporation of all feasible mitigation measures, the Project's impact on Land Use (Residences ¼ Mile of a Dairy Facility) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

5.0 FINDINGS REGARDING CUMULATIVE SIGNIFICANT EFFECTS

CEQA requires a lead agency to evaluate the cumulative impacts of a proposed project (CEQA Guidelines §15130(a)). Cumulative impacts are those which are considered significant when viewed in connection with the impacts of other closely related past, present and reasonably foreseeable future projects (CEQA Guidelines §15355). Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The findings below identify each of the cumulative significant environmental impacts, the mitigation measures adopted to substantially lessen or to avoid them, or the reasons proposed mitigation measures are infeasible due to specific economic, social or other considerations. The findings incorporate by reference the analysis of cumulative significant impacts contained in the EIR (See Chapter 5 of the Draft EIR).

The significant cumulative impacts related to Air Quality and Greenhouse Gas Emissions identified in the EIR cannot be avoided or substantially reduced to below significance even after the adoption of all feasible mitigation measures. As described in the Statement of Overriding Considerations below, therefore, the County has determined these unavoidable significant impacts are acceptable because of specific overriding considerations.

5.1 Air Quality (Air Quality Degradation)

Potentially Significant Impact: The EIR identifies a potentially significant cumulative impact to Air Quality (Air Quality Degradation) in that operation of the Project will contribute to the degradation of air quality in the SJVAPCD Air Basin. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Chapter 5 (Impact # 5.1).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the cumulative significant environmental effect to Air Quality (Air Quality Degradation) identified in the EIR, but not to a level below significance; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: The types of development and geographic area analyzed for cumulative air quality impacts include existing and probable future dairy facilities in the San Joaquin Valley air basin. The air basin has geographic boundaries which encompass approximately 25,000 square miles of land, including portions of 8 counties. The air quality within the basin is affected by a wide range of human activities, including stationary sources of air emissions (e.g. industrial facilities and power plants), mobile sources (e.g., cars, trucks, and mobile equipment), biogenic or natural sources (e.g., methane emissions from decomposition of organic materials, including sewage), and by emissions generated by a wide range of agricultural activities, such as dairy operations and crop production. The basin has been designated as severe non-attainment status for PM_{10} and ozone. Agricultural activities have been subject to air quality permits only since 2004. Consequently, only limited comprehensive information is available from either air quality control districts or counties on air emissions generated by agricultural activities. The CARB and SJVAPCD have developed emissions inventories for select air pollutants from some agricultural activities (e.g., land preparation, harvesting, and beef cattle feedlots). However, air emissions, inventories and site-specific monitoring data regarding relevant parameters (e.g., VOC, hydrogen sulfide, PM_{10}, and methane) for animal confinement facilities (including dairies) within the San Joaquin Valley air basin are not yet available. The lack of available quantitative data makes analysis of all cumulative sources of air emissions difficult if not infeasible. The primary thresholds of significance for cumulative air quality impacts are defined by Ambient Air Quality Standards which provide a basis for measurement of the attainment status of the air basin. These ambient standards do not define which sector or sources contribute to air pollution (or how much), but nevertheless act to trigger the significance classification of cumulative impacts. All sources (point or non-point, permitted and unpermitted) of air emissions for which the air basin is not in attainment (e.g., PM_{10} and ozone precursors) contribute to the nonattainment condition. Lacking other specific data, a projection of cumulative impacts from dairy development in the San Joaquin Valley was made based on dairy cow existing inventories and on lists of dairy use permits issued or pending but not constructed. Table 5.1-1 in Chapter 5 of the Draft EIR describes current and projected milk cow/dairy population in the 8-county area. Sulfide and odor emissions, while not quantifiable, must be assumed to be cumulatively significant. It should be noted that the figures considered in the EIR represent gross estimates which assume that all dairies have similar feed programs and design features and generate employee and truck trips of similar frequency and length. The number of milk cows on three dairies recently environmentally evaluated in Tulare County (Etchegaray, El Monte and Bosman) is 13,200 and the projected truck trips for these three projects is 24. Assuming that each truck trip involves 20 miles of travel, the annual emissions associated with the incremental daily trips generated by all San Joaquin Valley dairies was calculated using the URBEMIS-7G program and are shown in Table 5.1-3 of the EIR. Adding vehicle emissions to those estimated as emanating from the cumulative

number of dairy cows (animal units), the total estimated cumulative emissions would be as shown in Table 5.1-4 of the EIR. Major contributing sources of PM_{10} emissions in the air basin (in descending order of contribution) are entrained roadway dust, farming operations, waste burning, and industrial processes. The main sources of NOx and VOC emissions are vehicle and other mobile sources, solvent use, farming, petroleum storage and transfer, and waste burning. The primary source of particulate matter on dairies is fugitive dust sources which are released from ground level, are not thermally buoyant, and therefore are expected to decrease with distance. The SJVAPCD, in implementation of SB 700, has adopted various regulations, including Best Available Control Technologies (BACTs) Conservation Management Practices (CMPs), which have as their objective the reduction of cumulative air quality impacts from agricultural operations, including dairies. The early actions recommended by CalEPA and CARB focus on transportation reductions and improving methane capture from landfills. While much research and development has been mandated, there are no viable alternatives currently available to further mitigate cumulative air quality impacts. Therefore, the Project is considered to contribute to a cumulative significant impact on Air Quality (Air Quality Degradation) in the SJVAPCD Air Basin. The potential significant impact to Air Quality (Air Quality Degradation) will be mitigated, but not to a level less than significant, by the owner/applicant's implementing the following mitigation measures. The Project shall incorporate multiple "Best Available Control Technologies" and best management practices to control dairy emissions (see EIR, Appendix H, p. 271). The owner/operator will be required to implement these strategies as needed to meet the SJVAPCD Authority to Construct and Permit to Operate conditions. The owner/operator also will implement Mitigation Measure #5.1, which provides as follows:

1. The applicant/owner shall, as part of the required Continuous Evaluation Program (Dairy Element Policy DE 6.3a), conduct an annual evaluation to demonstrate that the dairy is operating in compliance with the air quality mitigation measures set forth in Section 3.1 Air Quality and Section 3.2 Greenhouse Gases; and

2. The owner/operator shall comply with all feasible pertinent requirements of the SJVAPCD including BACTs and CMPs (EIR, Appendices C and D).

Implementation of these mitigation measures will reduce but not eliminate the significant cumulative impact on Air Quality (Air Quality Degradation), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's cumulative impact on Air Quality (Air Quality Degradation) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

5.2 Air Quality (Operational Emission of Nitrogen Oxide (NOx))

Potentially Significant Impact: The EIR identifies a potentially significant cumulative impact to Air Quality (Operational Emission of Nitrogen Oxide (NOx)) in that, although its project-related NOx emissions are less than significant, the Project's incremental contribution to NOx emissions is cumulatively significant because NOx is an ozone precursor and the SJVAPCD Air Basin is in non-attainment for both Federal and State ozone standards. Detailed information and analysis regarding this significant potential impact is provided in the Draft EIR, Section 3.1 (Impact # 3.1.6).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant cumulative environmental effect to Air Quality (Operational Emission of Nitrogen Oxide (NOx)) identified in the EIR, but not to a level below significance; therefore, pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Existing project-related sources of NOx emissions including farm/dairy equipment, employee truck trips, and vehicle exhausts generate 4.6 tons per year of NOx emissions. The Project's NOx emissions would be 8.9 tons per year. The net increase of the Project in NOx emissions is 4.3 tons per year, well below the SJVAPCD significance threshold. Although the Project's NOx emissions are less than significant, the SJVAPCD Air Basin is in non-attainment for both Federal and State ozone standards and NOx is an ozone precursor. As a result, the Project's NOx emissions are considered cumulatively significant. All existing stationary equipment must now comply with SJVUAPCD Rule No. 2201 if modified or replaced. Mitigation measures to further reduce NOx are recommended because of the non-attainment status of the SJVAB. The potential significant cumulative impact to Air Quality (Operational Emission of Nitrogen Oxide (NOx)) will be mitigated, but not to a level less than significant, by the Project Applicant's implementing the following mitigation measure, which is identified in the EIR as Mitigation Measure 3.1.6:

1. The idling time of all equipment used at the site shall not exceed five minutes;

2. As much as possible, alternative fueled or catalyst-equipped diesel construction equipment shall be used at the dairy site;

3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when available provided they are not run via a portable generator; and

4. Employees will be encouraged to carpool-travel to and from the dairy site.

Implementation of these mitigation measures will reduce but not eliminate the

significant cumulative impact on Air Quality (Operational Emission of Nitrogen Oxide (NOx)), and the impact will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's cumulative impact on Air Quality (Operational Emission of Nitrogen Oxide (NOx)) is considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

5.3 Greenhouse Gas Emissions

Potentially Significant Impact: The EIR identifies a potentially significant cumulative impact to Greenhouse Gas Emissions in that Project's greenhouse gas emissions would contribute to global climate change. Detailed information and analysis regarding this significant cumulative impact is provided in the Draft EIR, Chapter 5 (Impact # 5.2).

Finding: Pursuant to CEQA Guidelines §15091(a)(1), changes or alterations have been required or incorporated in the Project which lessen the significant cumulative impact related to Greenhouse Gas Emissions identified in the EIR, but not to a level below significance; pursuant to CEQA Guidelines §15091(a)(3), specific economic considerations make infeasible two of the mitigation measures identified in the EIR; pursuant to CEQA Guidelines § 15093, the County has balanced the benefits of the Project against its unavoidable environmental risks and has determined that this impact is acceptable for the reasons stated in the Statement of Overriding Considerations below.

Facts in Support of Finding: Greenhouse gas emissions (GHG) are believed to contribute to global climate change (GCC). The reports discussed in the EIR indicate GCC could result in poor air quality, more severe heat; increased wildfires; shifting vegetation; declining forest productivity; decreased spring snow pack; water shortages; a potential reduction in hydropower; a loss in winter recreation; agricultural damages from heat, pests, pathogens, and weeds; and rising sea levels resulting in shrinking beaches and increased coastal floods in California. Potential health effects from GCC also may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. GCC-related meteorological changes and sea level rises are expected to lead to other adverse impacts, such as flooding and hurricanes which can displace people and damage property and agriculture, drought and decreased snow pack which would decrease water and food availability, rising sea levels which would increase stress on levees and exacerbate storm wave run-up and coastal erosion, and air quality problems from increased frequency of smog and particulate air pollution. There are no widely accepted thresholds of significance for determining the impact of GHG emissions. At this time, neither Kings County, the SJVAPCD, nor any State agency, such as the California Air Resources Board, has adopted specific thresholds for GHG emissions for dairy projects. Therefore, the EIR determined that the Project would have a significant impact if it would impede, interfere with or fail to comply with the goals and objectives of

AB 32 or related Executive Orders intended to reduce GHG emissions in California. Under such a threshold, the Project's GHG emissions and resulting climate change impacts are considered cumulatively significant. The cumulative significant impacts relating to Greenhouse Gas Emissions can be mitigated, but not to a level below significance, by the owner/operator's implementation of the following measures, which are identified in the EIR as Mitigation Measure #5.2:

1. Convert the milking barn facilities to be energy efficient with respect to space heating/cooling and building insulation, install energy efficient heating/cooling equipment there, and use fluorescent and/or LED lighting throughout the facility;

2. Maintain an impervious covering on silage and manure piles year-round;

3. Include dietary aids (e.g., cottonseed) in feed rations;

4. Incorporate solid manure into fields within two hours after application;

5. Feed according to National Research Council (NRC) guidelines;

6. Remove feed at least once every 14 days from areas where animals stand to eat;

7. Feed or dispose of rations within 48 hours of grinding and mixing;

8. Store grain in a weatherproof storage structure from October through May;

9. Cover horizontal surfaces of silage piles, except areas where feed is being removed;

10. Flush or hose the milk parlor immediately prior to, immediately after, or during each milking;

11. Flush freestalls more frequently than the milking schedule;

12. Inspect water pipes and troughs and repair leaks at least once every 14 days;

13. Clean corrals at least once between April and July and at least once between October and December;

14. Manage corrals such that animal waste depth in corrals does not exceed 12 inches, except for in-corral mounding;

15. Maintain surfaces of corrals and dry lots so that puddles do not form and remain more than 48 hours;

16. Harrow, rake, or scrap pens sufficiently to maintain a dry surface;

17. Install corral shade structures uphill of any slope;

18. Do not allow liquid animals waste to stand in the field more than 24 hours after irrigation;

19. Apply no solid animal waste with a moisture content of 50% or more;

20. Remove animal waste from the dairy facility within seventy-two (72) hours of removal from the pens or corrals;

21. Cover dry animal waste piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed 24 hours per event, when wind events remove the covering;

22. Remove solids from the waste system with a solid separator system prior to the waste entering the lagoon;

23. Choose, to the extent feasible and practical, recycled, low-carbon and otherwise climate-friendly building materials such as salvaged and recycled-content materials for buildings, hard surfaces and non-plant landscaping; and

24. Minimize, reuse and recycle construction-related waste.

In addition to the mitigation measures described above, the EIR evaluated two other suggested mitigation measures, biofilters and digesters. Based on the information set forth in the EIR, the County hereby determines that biofilters and digesters are infeasible as mitigation measures for the cumulative impacts relating to Greenhouse Gas Emissions for the following reasons:

1. Dairy Cow Housing (Vented Enclosures with Biofilters)

Enclosed structures, with exhaust vented to a biofilters, have been shown to be an effective method of controlling VOC emissions for other operations (painting, coating, printing operations, etc.). Biofilters are widely used in the swine industry for controlling VOC emissions; however, no data has been identified regarding the effectiveness of biofilters to control CH_4 emissions. Furthermore, this technology has not yet been verified to work with enclosed dairy housing structures. Specifically, it is unclear whether biofilters would work with the high air flows required in enclosed dairy freestall housing structures. California has high ambient temperatures, and enclosed housing systems typically require air condition for the majority of the year. As a result, heat stress is a primary concern with using enclosed housing systems on California dairies if the enclosed housing systems are not air cooled. Consequently, enclosed housing systems are not used in Kings County dairies. Theoretically, even if vented

enclosures were to be used, adequate artificial ventilation and air condition would be required. The amount of ventilation and air conditioning would be dependent upon the design of the housing facility, climate number of animals, and other variables. While systems may vary, enclosed housing structures in the San Joaquin Valley back-up system might be required to prevent extreme heat stress and poor air quality in the case of a power failure. The large energy requirement needed to cool the enclosed structure would result in an increase in GHG emissions from indirect electricity use. These emissions might offset the GHG reductions achieved due to the enclosed structure and biofilter. The capital and operating costs for such housing and biofiltration for dairy cows in the San Joaquin Valley have been estimated by the San Joaquin Valley Air Pollution Control District as a potential VOC reduction measure for a 3,500 milk cow dairy. The capital cost for the biofilters alone, not including housing or duct work, was estimated to be $11,371,486. The resulting cost of VOC emission reductions was estimated to range from $67,584 to $86,548 per ton, far in excess of the District's BACT standard of $17,500 per ton. Annual operating costs were estimated to be $1,635,363 to $1,850,657 per year. Therefore, the costs of this mitigation measure are considered economically infeasible for the Project.

2. Digesters

Appendix E of the EIR provides an evaluation of the economic and technical feasibility of digester technologies, including flaring, gas pipeline injection for off-site gas sales, and on-site energy production for on-site use or off-site sale, with respect to GHG emission reductions. Fuel cells have not yet been adequately demonstrated to be achieved in practice for dairies and are costly to operate, especially if there is no practical use for all of the energy generated by the fuel cells. Microturbines have been demonstrated to be unreliable and costly. Flares are not cost effective because no useable energy can be generated from the flaring of biogas to offset the capital and maintenance costs. Internal combustion engines result in an increase in criteria pollutant emissions requiring the installation of unreliable and costly pollution control devices (see Appendix E for an analysis of the feasibility of a digester for a new dairy). Although anaerobic digesters are operating with internal combustion engines on various California dairies, the majority of digesters are not subject to the stricter NOx emission limit of 9 ppm. Although it is understood that there are currently a few permit applications for dairies equipped with anaerobic digester, only one dairy, Joseph Gallo Farms, is currently operating an anaerobic digester subject to a NOx emission limit of 9 ppm. The anaerobic digester at the Joseph Gallo Farms is equipped with a H_2S scrubber and a selective catalytic reduction (SCR) system to control emissions from the digester engine. Injection of treated biogas into a natural gas transmission line in the vicinity of the subject dairy may become feasible once a cluster of dairies comes online. The project applicant has indicated that joining a cluster of dairies to inject treated biogas into a local gas transmission line will be considered at a later date. In June 2008, CARB released a draft version of the AB32 Scoping Plan, in which CARB staff found

that the installation of manure digesters for the purposes of generating emission reductions should be voluntary for the next five years and it will subsequently determine if manure digesters should be made mandatory in 2020. Furthermore, according to the California Climate Action Registry (CCAR), no regulations in the U.S. have been identified that obligate livestock owners to invest in a digester system. Therefore, this mitigation measure is considered technically and economically infeasible for the Project.

Implementation of the feasible mitigation measures identified in the EIR will reduce but not eliminate the significant cumulative impacts relating to Greenhouse Gas Emissions and the impacts will remain significant. Therefore, despite the incorporation of all feasible mitigation measures, the Project's cumulative impacts relating to Greenhouse Gas Emissions are considered significant and unavoidable, and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 is required.

6.0 FINDINGS REGARDING PROJECT ALTERNATIVES

In preparing and adopting findings, a lead agency need not necessarily address the feasibility of both mitigation measures and environmentally superior alternatives when contemplating the approval of a project with significant environmental impacts. Where the significant impacts can be mitigated to a level of insignificance solely by the adoption of mitigation measures, the lead agency has no obligation in drafting its findings to consider the feasibility of environmentally superior alternatives, even if their impacts would be less severe than those of the project as mitigated. Accordingly, in adopting the findings concerning alternatives for the proposed project, the County considers only those significant environmental impacts that cannot be avoided or substantially lessened through mitigation.

Where a project will result in some unavoidable significant environmental impacts even after application of all feasible mitigation measures identified in an EIR, the lead agency must evaluate the project alternatives identified in the EIR. Under such circumstances, the lead agency must consider the feasibility of alternatives to the project which could avoid or substantially lessen the unavoidable significant environmental impacts. "Feasible" means capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, legal, social and technological factors (CEQA Guidelines §15364).

If there are no feasible project alternatives, the lead agency must adopt a Statement of Overriding Considerations with regard to the project pursuant to CEQA Guidelines §15093. If there is a feasible alternative to the project, the lead agency must decide whether it is environmentally superior to the proposed project. The lead agency must consider in detail only those alternatives which could feasibly attain most of the basic objectives of the project; however, the lead

agency must consider alternatives capable of eliminating significant environmental impacts even if these alternatives would impede to some degree the attainment of project objectives (CEQA Guidelines §15126.6(f)).

These findings contrast and compare the alternatives where appropriate in order to demonstrate that the selection of the Project has substantial environmental, planning, fiscal and other benefits. In rejecting certain alternatives, the County has examined the Project's objective and weighed the ability of the various alternatives to meet the objectives. The County believes the Project best meets this objective with the least environmental impact. The overall objective of the Project is to expand and operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA. The objective considered by the County is set forth in Section 1.3 above and in the Draft EIR, Section 2.2 (Project Objective).

The EIR examined a reasonable range of alternatives to determine whether they could meet the Project's objectives while avoiding or substantially lessening one or more of the Project's unavoidable significant impacts. These findings also considered the feasibility of each alternative. In determining the feasibility of alternatives, the County considered whether the alternatives could be accomplished in a successful manner within a reasonable period of time in light of economic, environmental, social and technological factors (CEQA Guidelines §§ 15126(d)(5)(A), 15364).

The EIR concluded that the Project will result in unavoidable significant project-related impacts on Air Quality and Land Use, and unavoidable significant cumulative impacts on Air Quality and Greenhouse Gas Emissions, even after the adoption of all feasible mitigation. Accordingly, the EIR analyzed two alternatives to the Project: the No Project Alternative and the Reduced Herd Size Alternative. Detailed information and analysis concerning these alternatives are set forth in the Draft EIR, Chapter 4 (Alternatives). The following section of these findings summarizes these alternatives and the feasibility of the alternatives as a means to reduce or avoid the unavoidable significant impacts associated with the Project.

6.1 No Project Alterative

The No Project Alternative is an alternative which is required to be evaluated by CEQA (CEQA Guidelines § 15126(d)(2)). The No Project Alternative assumes that the Project will not be implemented and that existing land uses on the project site will remain unchanged and in their existing condition. The No Project Alternative serves as the alternative against which to evaluate the effects of the Project and other project alternatives.

Under the No Project Alternative, the existing dairy facilities would not be expanded. No new development or alterations would be implemented and the project applicant could be required to restore the project site to its previous condition. The No Project Alternative would not achieve the basic Project objective, although there would be no increase in dairy-related air quality, health risks, and greenhouse gases and water quality and land use impacts would be reduced. However, impacts associated with contamination of row-crop or other agriculture would continue.

The County finds that the No Project Alternative would not achieve the Project's objective and would preclude obtaining the benefits of the Project. The County finds that all potential significant environmental impacts of the Project will be mitigated by the design of the Project and the adoption of the mitigation measures set forth in the Mitigation Monitoring and Reporting Program, except the Project's significant project-related and cumulative impacts associated with Air Quality, Greenhouse Gas Emissions and Land Use. The County further finds that, although the No Project Alternative would avoid or substantially lessen the significant potential impacts in the project area, the No Project alternative is infeasible because it would not attain the project objective and would not provide the County with any of the benefits of the Project described above and in the Statement of Overriding Considerations, and thus would be undesirable from a policy standpoint. For the potential significant impacts which cannot be avoided or mitigated to a level below significance, therefore, the County adopts the Statement of Overriding Considerations below pursuant to CEQA Guidelines §15093.

6.2 Reduced Project Alternative

The Reduced Project Alternative considered an alternative herd size of 1,366 milk cows and support stock totaling 2,364, which is approximately 60 percent of the proposed project increase and is representative of other dairy operations in Kings County. With this reduced herd size, the amount of acreage needed for liquid and solid manure utilization will be decreased. This alternative was selected for analysis because a reduction in the herd size and corresponding dairy facilities would result in roughly proportional reductions in air quality and health risks, although not to a less than significant level. This alternative would also decrease greenhouse gas emissions, lower the potential for groundwater degradation, and eliminate some of the land use violations.

The potential impacts of the Reduced Herd Size Alternative are discussed in detail in Chapter 4, Section 4.2 of the Draft EIR. The Reduced Herd Size Alternative would lessen significant project-related impacts on Air Quality in that it would proportionately reduce NOx and ammonia emissions; however, VOC and $PM_{10}/PM_{2.5}$ emissions remain above SJVAPCD thresholds. With respect to Greenhouse Gas Emissions, there would be a proportional reduction in methane (CH_4) under the Reduced Herd Size Alternative, but carbon dioxide (CO_2)

associated with continued field crop production activities would have emissions similar to the Project. The Reduced Herd Size Alternative would lessen significant impacts on Land Use in that it could allow an expansion that would conform to Kings County Dairy Element policies; however, Land Use impacts related to Separation of Dairy Facilities by 1/4 Mile and Residences Within 1/4 Mile of a Dairy would require a CUP and an EIR.

The Reduced Herd Size Alternative would partially achieve the Project objective stated in Section 2.2 of the EIR. However, the Reduced Herd Size Alternative would not fully achieve the fundamental objective of the Project since the Reduced Herd Size Alternative would not optimally utilize the available land resources.

The County finds that all potential significant environmental impacts of the Project will be mitigated by the design of the Project and the adoption of the mitigation measures set forth in the Mitigation Monitoring and Reporting Program, except the Project's project-related and cumulative significant impacts on Air Quality, Greenhouse Gas Emissions and Land Use. The County further finds that, although the Reduced Herd Size Alternative would proportionately reduce the significant impacts on Air Quality and Greenhouse Gas Emissions, the Reduced Herd Size Alternative is infeasible because it would not fully attain the fundamental objective of the Project and would not provide the County with all of the benefits of the Project described above and in the Statement of Overriding Considerations, and thus would be undesirable from a policy standpoint. For the potential significant impacts which cannot be avoided or mitigated to a level below significance, therefore, the County adopts the Statement of Overriding Considerations below pursuant to CEQA Guidelines §15093.

7.0 STATEMENT OF OVERRIDING CONSIDERATIONS

The Project would have significant unavoidable environmental impacts on the following areas, which are described in detail in the Draft EIR, Section 3.1 (Air Quality). Section 3.2 (Greenhouse Gas Emissions), Section 3.3 (Land Use) and Chapter 5 (Cumulative Impacts):

- Project-related impacts on Air Quality and Land Use; and
- Cumulative impacts on Air Quality and Greenhouse Gas Emissions.

The County has adopted all feasible mitigation measures with respect to the significant unavoidable environmental impacts. The County also has analyzed a reasonable range of alternatives to the Project, including the No Project Alternative and the Reduced Herd Size Alternative. Based on the evidence contained in the EIR and presented during the administrative proceedings, the

County has determined that none of the alternatives meets the fundamental objective of the Project and is feasible and environmentally preferable to the Project as approved.

Pursuant to CEQA Guidelines §§ 15043 and 15093, therefore, the County must adopt a "Statement of Overriding Considerations" in order to approve the Project. A Statement of Overriding Considerations allows a lead agency to determine that specific economic, social or other expected benefits of a proposed project outweigh its potential significant unavoidable environmental risks. Although the County has no obligation under CEQA to adopt a Statement of Overriding Considerations for significant impacts which will be mitigated to a level below significance, the County wishes to make clear its view that the benefits of the Project described below are of such importance to the community as to outweigh all significant adverse impacts described in the Final EIR or suggested by participants in the public review process.

Pursuant to CEQA Guidelines §15093, the County hereby finds that the Project would have the following benefits:

- The Project will ensure that 428 acres of farmland remain in agricultural production, with 368 acres in field crops and 60 acres in diary production facilities.

- The Project will increase employment opportunities within the region by providing approximately 12 year-round, permanent jobs during operation of the Project.

- The Project will provide a benefit to the community by increasing milk production and increasing the growth of high value crops in the Project area. Milk has been a leading farm commodity in Kings County in recent years. According to the Kings County Agricultural Commissioner, the value of milk production in 2010 was $556 million, ranking the County as the number three dairy county in the State. Increasing the importance of dairy farming in Kings County is the value of directly-related high-value crops grown in the county such as alfalfa ($67 million), corn and silage ($51 million), and wheat ($35 million).

- The Project will increase the production of milk and cream in the county at an existing family owned dairy operation. In California, agriculture is a $36.6 billion industry (2007) and growing each year (California Agricultural Resource Director 2008-09). Though some agricultural operations are very large, less than 1% of the State's 75,000 farms and ranches are run by non-family corporations (American Farmland Trust). Milk and cream are the number one commodities in the State, generating $7.33 billion in 2007.

- The Project will expand an existing family owned dairy operation, which would maintain existing jobs and create new jobs. A study prepared by the California Milk Advisory Board in 2010 described the dairy industry's impact on California's economy, including the number of jobs and revenue generated from a typical dairy farm in one year. In 2008, the latest year for which figures are available, California's largest agricultural commodity was responsible for creating a total of 443,574 jobs and $63 billion in economic activity for the state. (California Milk Advisory Board, February, 2010).

- The Project will result in construction-related jobs. As an example of the value of dairies, the Ohio State University Department of Animal Sciences has prepared a report on the economic impact of a new dairy with 2,500 cows (Throan et.al.). The monies spent during the construction phase totaled $8.6 million (includes $5 million spent for construction and $3.6 million additional stimulation in local economy) and resulted in 102 construction-related jobs. In operating the new 2,500-cow dairy the annual economic impact was estimated to total $13.5 million (including $7.6 million annual sales, $4.3 million direct sales to the dairy and $1.6 million in household spending).

Although it cannot mitigate the unavoidable environmental impacts to a level below significance, the Project incorporates design features and will implement mitigation measures intended to minimize to the extent feasible the potential impacts to Air Quality, Greenhouse Gas Emissions and Land Use generated by the Project.

The County has weighed the benefits of the Project against its potential significant unavoidable environmental risks in determining whether to approve the Project. After balancing the specific economic, legal, social, technological, and other benefits of the Project, the Planning Commission has determined that the unavoidable, significant environmental impacts of the Project are considered "acceptable" because the specific considerations identified above outweigh the significant unavoidable environmental impacts of the Project. Each of the benefits and the fulfillment of the objective of the Project, as stated herein, are determined to be a separate and independent basis for overriding the unavoidable significant environmental impacts identified above. For the foregoing reasons, therefore, the County finds that the Project's potential significant unavoidable environmental impacts are outweighed by the benefits described above.

Table ES-1 *(Corrected)*
Summary of Potentially Significant Impacts and Mitigation Measures
Mitigation Monitoring and Reporting Program

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
AIR QUALITY						
3.1.1	**Toxic Air Emissions Health Risk**	**3-29 to 3-31**	**3.1.1**	The owner/applicant shall implement the following measures: ▪ Cattle Housing Dust ($PM_{2.5}$) 1. Paved feedlanes, where present shall be a width of at least 8 feet along the corral side of the feedlane fence for milk and dry cows and at least 6 feet along the corral side of the feedlane for heifers; and 2. Scrape, vacuum, or flush concrete lanes in corrals at least once every day for mature cows and every 7 days for support stock. ▪ Dairy Equipment and Truck Exhaust Emissions - Nitrogen Oxide (NOx) 1. The idling time of all equipment used at the site shall not exceed five minutes; 2. As much as possible, alternative fueled or catalyst-equipped diesel equipment shall be used at the dairy site; 3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when available provided they are not run via a portable generator; and	**Significant**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				4. Employees shall be encouraged to carpool-travel to and from the dairy site. ▪ Volatile Organic Compounds (VOC), Ammonia (NH_3) and Hydrogen Sulfide (H_2S) Emissions: 1. Remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every seven days.		
~~3.1.2~~	~~**Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) Construction Impacts**~~	~~3-31 to 3-32~~	~~None~~	~~None are required; all feasible mitigation measures have been incorporated in Sozinho Dairy Fugitive Dust Emission Control Plan.~~	~~Less than Significant~~	~~None~~
~~3.1.3~~	~~**Construction Emissions Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Nitrogen Oxide (NOx), Sulfur Dioxide (SO_2)**~~	~~3-32~~	~~None~~	~~None are required; the project related emissions are less than significant.~~	~~Less than Significant~~	~~None~~
3.1.4	**Operational Emission of Criteria Pollutants, ~~Particulate Matter (PM_{10}) and~~ Fine Particulate Matter ($PM_{2.5}$)**	3-33 to 3-35	None	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on pages 3-58 - 3-60.	Significant	~~None~~ • **San Joaquin Valley Air Pollution Control District** • **Community Development Agency**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
3.1.5	**Operational Emission of Criteria Pollutants, Volatile Organic Compound (VOC)**	**3-35 to 3-36**	**3.1.5**	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on pages 3-58 - 3-60.	**Significant**	~~None~~ • **San Joaquin Valley Air Pollution Control District** • **Community Development Agency**
~~**3.1.6**~~	~~**Operational Emission of Criteria Pollutants, Nitrogen Oxide (NOx)**~~	~~**3-36 to 3-37**~~	~~**3.1.6**~~	~~The following mitigation measures are required to further reduce NOx emissions:~~ ~~1. The idling time of all equipment used at the site shall not exceed five minutes;~~ ~~2. As much as possible, alternative fueled or catalyst equipped diesel construction equipment shall be used at the dairy site;~~ ~~3. Electrically driven equivalents to fossil fueled equipment shall be utilized when available provided they are not run via a portable generator; and~~ ~~4. Employees will be encouraged to carpool travel to and from the dairy site.~~	~~***Project level:* Less than Significant***~~ ~~***Regional level:* Cumulatively Significant, Considerable and Unavoidable***~~	~~• Community Development Agency~~ ~~• San Joaquin Valley Air Pollution Control District~~
3.1.7	**Methane (CH_4) Emissions**	**3-38**	**None**	No additional measures are required; all feasible control measures have been incorporated in SJVAPCD's Rule 4570 (see Appendix D), and in Dairy Element Policies DE 4.1s through DE 4.2b (see Appendix F).	**Significant**	~~None~~ • **San Joaquin Valley Air Pollution Control District** • **Community Development**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
						Agency
3.1.8	**Ammonia (NH_3) Emissions**	**3-38 to 3-39**	**None**	No additional measures are required; all feasible control measures have been incorporated in SJVAPCD's Rule 4570 (see Appendix D), and in Dairy Element Policies DE 4.1a through DE 4.2b (see Appendix F).	**Significant**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**
3.1.9	**Odor Emissions**	**3-39 to 3-42**	~~**3.1.9**~~	No additional measures are required; all feasible control measures have been incorporated in the Dairy Element Policies DE 4.1a, DE 4.1b, DE 4.1d and DE 5.1b(see Appendix D), in the SJVAPCD's Rule 4550 and 4570 (see Appendix F).	**Significant**	~~**None**~~ • **San Joaquin Valley Air Pollution Control District** • **Community Development Agency**
~~**3.1.10**~~	~~**Local Carbon Monoxide (CO) Concentrations**~~	~~**3-43**~~	~~**None**~~	~~None are required.~~	~~**Less than Significant**~~	~~**None**~~
3.1.11	**Ambient Air Quality**	**3-43 to 3-44**	**None**	No additional measures are required; all feasible control measures have been incorporated in the SJVAPCD's Rules 4550 and 4570 (see Appendix D); in Dairy Element Policies DE 5.1d, DE 5.1e, DE 5.1f, DE 5.1g, and DE 5.1h (see Appendix F); and Mitigation Measure #3.1.1 (pages 3-30 and 3-31) and Mitigation Measure #3.3.2 on page 3-58 - 3-60.	**Significant**	~~**None**~~ • **San Joaquin Valley Air Pollution Control District** • **Community Development Agency**

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
~~GREENHOUSE GASES~~						
~~3.2.1~~	~~Greenhouse Gases~~	~~3-48 to 3-52~~	~~None~~	~~No project level mitigation measures are required.~~	~~Less than Significant~~	~~None~~
LAND USE AND PLANNING						
3.3.1	**Separation of Dairy Facilities by ¼ Mile**	**3-54**	**3.3.1**	No additional measures are required; all feasible control measures have been included in Mitigation Measure #3.3.2 and the compliance with the required mitigation measures required in the Kings County Dairy Element.	**Less than Significant**	~~None~~ • **Community Development Agency**
3.3.2	**Residences Within ¼ Mile of Dairy Facility**	**3-55 to 3-56**	**3.3.2**	The owner/operator shall install and maintain a downwind windbreak shelterbelt along the east and south boundary of the project site. This windbreak consisting of evergreen shrubs and trees, to meet the USDA National Research Conservation Service (NRCS) Windbreak Shelterbelt Establishment Standard (380)	**Significant**	▪ **Community Development Agency**
AIR QUALITY DEGRADATION						
5.1	**Air Quality Degradation**	**5-2 to 5-7**	**5.1**	The owner/applicant shall implement the following measures: 1. The applicant/owner shall, as part of the required Continuous Evaluation Program (Dairy Element Policy DE 6.3a), conduct an annual evaluation to demonstrate that the dairy is operating in compliance with the air quality mitigation measures set forth in Section 3.1 Air Quality and Section 3.2 Greenhouse Gases.	**Cumulatively Significant, Considerable and Unavoidable**	▪ **San Joaquin Valley Air Pollution Control District**

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				2. The owner/operator shall comply with all feasible pertinent requirements of the SJVAPCD including BACTs and CMPs (Appendix C and D).		
GREENHOUSE GASES						
5.2	**Greenhouse Gases**	**5-7 to 5-11**	**5.2**	The State of California Climate Action Team has listed various measures which will impact GHG emissions; other measures have been suggested by the SJVAPCD. The following mitigation measures, commonly recommended to reduce VOC's, are suggested, although there is no available data on which to base an analysis of the efficiency of their implementation in greenhouse gas emissions reduction: 3. Convert the milking barn facilities to be energy efficient with respect to space heating/cooling and building insulation, install energy efficient heating/cooling equipment there, and use fluorescent and/or LED lighting throughout the facility; 4. Maintain an impervious covering on silage and manure piles year-round; 5. Include dietary aids (e.g., cottonseed) in feed rations; 6. Incorporate solid manure into fields within two hours after application; 7. Feed according to National Research Council (NRC) guidelines;	**Cumulatively Significant, Considerable and Unavoidable**	▪ **Community Development Agency** ▪ **San Joaquin Valley Air Pollution Control District**

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				8. Remove feed at least once every 14 days from areas where animals stand to eat; 9. Feed or dispose of rations within 48 hours of grinding and mixing; 10. Store grain in a weatherproof storage structure from October through May; 11. Cover horizontal surfaces of silage piles, except areas where feed is being removed; 12. Flush or hose the milk parlor immediately prior to, immediately after, or during each milking; 13. Flush freestalls more frequently than the milking schedule; 14. Inspect water pipes and troughs and repair leaks at least once every 14 days; 15. Clean corrals at least once between April and July and at least once between October the December; 16. Manage corrals such that animal waste depth in corrals does not exceed 12 inches, except for in-corral mounding; 17. Maintain surfaces of corrals and dry lots so that puddles do not form and remain more than 48 hours; 18. Harrow, rake, or scrape pens sufficiently to maintain a dry surface;		

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
				19. Install corral shade structures uphill of any slope; 20. Not allow liquid animal waste to stand in the field more than 24 hours after irrigation; 21. Apply no solid animal waste with a moisture content of 50% or more; 22. Remove animal waste from the dairy facility within seventy-two (72) hours of removal from the pens or corrals; 23. Cover dry animal waste piles outside the pens with a weatherproof covering from October through May, except for times, not to exceed 24 hours per event, when wind events remove the covering; 24. Remove solids from the waste system with a solid separator system prior to the waste entering the lagoon; 25. Choose, to the extent feasible and practical, recycled, low-carbon and otherwise climate-friendly building materials such as salvaged and recycled-content materials for buildings, hard surfaces and non-plant landscaping; and 26. Minimize, reuse and recycle construction-related waste.		

Impact No.	Impact	Page Number in EIR	Mitigation Number	Mitigation Measure	Level of Significance After Mitigation	Monitoring Agency
3.1.6	***Operational Emission of Criteria Pollutants, Nitrogen Oxide (NOx)***	***3-36 to 3-37***	***3.1.6***	*The following mitigation measures are required to further reduce NOx emissions:* *1. The idling time of all equipment used at the site shall not exceed five minutes;* *2. As much as possible, alternative fueled or catalyst-equipped diesel construction equipment shall be used at the dairy site;* *3. Electrically driven equivalents to fossil-fueled equipment shall be utilized when available provided they are not run via a portable generator; and* *4. Employees will be encouraged to carpool-travel to and from the dairy site.*	***Regional level: Cumulatively Significant, Considerable and Unavoidable***	▪ ***Community Development Agency*** ▪ ***San Joaquin Valley Air Pollution Control District***
3.1.8	***Ammonia (NH3) Emissions***	***3-38 to 3-39***	***None***	*No additional measures are required; all feasible control measures have been incorporated in SJVAPCD's Rule 4570 (see Appendix D), and in Dairy Element Policies DE 4.1a through DE 4.2b (see Appendix F).*	***Cumulatively Significant, Considerable and Unavoidable***	▪ ***Community Development Agency*** ▪ ***San Joaquin Valley Air Pollution Control District***