

4 CHANGES TO TEXT OF THE ENVIRONMENTAL DOCUMENTS

4.1 CHANGES TO THE ENVIRONMENTAL IMPACT REPORT

This chapter sets forth all substantive changes to the Environmental Impact Report (EIR) that occurred after publication of the Draft EIR (DEIR). Such changes update or correct misinformation or errors in the text noted by Merced County, as well as changes made in response to public and agency comment on the DEIR. Within this chapter, additions to text are indicated by underlining; deletions of text are designated by ~~striketrough~~. The chapter and section references are ordered as they appear in the DEIR. If a DEIR chapter or section does not appear in this Chapter 4, no corrections or modifications were necessary. There would be no change in the residual significance of identified impacts with the updated information presented below, and no further modification of the EIR would be necessary. Any changes to information that would appear in the Summary Table (Table 2-1 of the DEIR) appear in the revised summary presented in Table 2-1 of this Final EIR.

2 EXECUTIVE SUMMARY OF THE EIR

2.1 PROJECT SUMMARY

The project consists of the expansion of an existing dairy facility located approximately five miles south of El Nido in unincorporated Merced County. The existing Antonio Brasil Dairy is located on an approximate 53-acre portion of a 439-acre site. Approximately 376 acres of the project site are currently used for the production of crops and application of manure process water, 184 acres of which are located in Madera County. Conditional Use Permit CUP11-010 proposes to expand the existing dairy so that the modified dairy would house a total of 6,385 animals. This would represent an increase of ~~4,035~~ 3,900 animals from existing numbers. The proposed dairy expansion project would also include improvements to the active dairy facility to accommodate the proposed herd increase, including the construction of three (3) new freestalls, a new shade, and 20 new corrals. Construction of the proposed structures would convert approximately 32 acres of existing cropland to active dairy facilities, increasing the area of operation to 85 acres.

3 PROJECT DESCRIPTION

3.3 DESCRIPTION OF THE PROPOSED ACTION

The applicant has filed Conditional Use Permit CUP11-010 to expand the existing dairy so that the modified dairy would house a total of 6,385 animals (see Table 3-2). This would represent an increase of ~~4,035~~ 3,900 animals from existing numbers.

Table 3-2 Existing and Proposed Herd at the Antonio Brasil Dairy

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)	Total Animals
Existing	1,200	365	350	200	130	240	2,485
Proposed	2,800	420	1,200	1,000	880	85	6,385
<i>Change</i>	<i>1,600</i>	<i>55</i>	<i>850</i>	<i>800</i>	<i>750</i>	<i>-155</i>	<i>4,035</i> <i>3,900</i>

Source: Project Application Materials, August 2011.

The proposed dairy expansion project would also include improvements to the active dairy facility to accommodate the proposed herd increase, including the construction of three new freestalls, a new shade, and 20 new corrals. Construction of the proposed corrals would convert approximately 32 acres of existing cropland to active dairy facilities, increasing the area of operation to 85 acres. See Figure 3-4 for the dairy site plan and Figure 3-5 for the layout of the dairy fields and other facilities. All of the necessary utilities for the dairy expansion are currently available on site, and no additional utilities would be required.

All active areas of the dairy would be located within Merced County. Additional acreage may be purchased in the future for use as cropland. A new manure digester has been permitted by the County and will be sited at the dairy as a separate project.

Animal wastes from freestall and other concrete-surfaced areas would continue to be flushed to an on-site waste management system, except for solid manure within corral areas, which would continue to be scraped. Figure 3-6 shows a cross-section of a freestall dairy barn and Figure 3-7 illustrates the processes that occur at a dairy farm.

Wastewater would continue to be mixed with irrigation water and applied to the land. With conversion of 32 acres of existing cropland for the construction of new active dairy facilities, there would be 344 acres cropped in corn silage and wheat silage soft dough available for disposal of dairy wastewater.

Dry manure would continue to be separated from liquids, accumulated on site, and processed for bedding material, or hauled off site for use as fertilizer and soil amendments. Corrals would continue to be scraped several times annually. With the proposed expansion, additional solid manure from corrals and separator solids would be exported off-site.

Operations at the dairy would continue to occur 24 hours per day, 365 days per year, with most operations concentrated during daylight hours. With implementation of the proposed project, the number of employees would increase from 9 to approximately 11 workers.

5 AIR QUALITY AND ODORS

5.3 ENVIRONMENTAL EFFECTS

5.3.2 ENVIRONMENTAL IMPACTS

The evaluation of the Antonio Brasil Dairy Expansion project addresses the emissions associated with the expansion of the existing herd size from 2,485 cows to the proposed level of operations at 6,385 cows (see Table 3-3 in Chapter 3, *Project Description* of this EIR for a breakout of the herd by age-class). Approximately 376¹ acres of the project site are currently used for the production of crops and the application of manure process water and/or solid manure, approximately 184 acres of which are located in Madera County. With conversion of 32 acres of existing cropland for the construction of new active dairy facilities, there would be 344 acres cropped in corn silage and wheat silage soft dough available for disposal of dairy wastewater.

In addition to agricultural activities, the existing operation includes a dairy facility located on an approximately 53-acre portion of the 439-acre project site. The developed facilities include a rotary milk barn, three freestall barns, a special needs barn, 10 open lot corrals, a calf hutch area, a mechanical separator, an earthen separator, hay barns, commodity barns, a wastewater treatment pond, a wastewater storage pond, and two mobile homes (one unoccupied and planned for removal).

The proposed dairy expansion project would include improvements to the active dairy facility to accommodate the proposed herd increase, including the construction of three new freestalls, a new shade, and 20 new corrals. Construction of the proposed freestall barns and shade would result in approximately 153,136 square feet of new structures on approximately 3.5 acres. Construction of the proposed corrals would convert approximately 32 acres of existing cropland to active dairy facilities, with an overall construction area of approximately 35.5 acres. With the proposed expansion, the area of active dairy facilities would be increased to 85 acres. All project-related construction and operational activities would generate some level of air quality emissions, and thus are being assessed as part of this EIR.

Merced County has permitted the construction of an anaerobic manure digester on the project site adjacent to the existing wastewater treatment lagoon within the existing developed footprint. The manure digester, which is under construction as of December 2012, is not a part of the project under review in this EIR prepared for the dairy expansion project. The two internal combustion engines that may be included with the digester have been permitted for construction by the SJVAPCD. The manure digester is covered by the Central Valley Regional Water Quality Control Board (CVRWQCB) Waste Discharge Requirements General Order for Dairies with Manure Anaerobic Digester or Co-Digester Facilities.

¹ The existing conditions Nutrient Management Plan (NMP) shows 369 acres cropped; however, based on engineering measurements, a more precise 376 acres is being used for this analysis. For more information regarding Regional Water Quality Control Board requirements for NMPs, please refer to page 3-7 and Chapter 10, *Hydrology and Water Quality*, of this EIR.

Impact AQ-7: Impacts to ambient air quality (Criterion III.d)

Operations from the Antonio Brasil Dairy Expansion would result in emissions of criteria air pollutants that could impact ambient air quality through a violation of air quality standards. Because air emissions would not exceed ambient air quality standards for areas adjacent to the dairy, this would be a less-than-significant impact.

An AAQA was prepared (Insight Environmental Consultants, Inc. 2013a) to determine if the proposed dairy has the potential to impact ambient air quality through a violation of the ambient air quality standards or a substantial contribution to existing or projected air quality standards using air dispersion modeling (see Appendix G). In order to determine whether a project will cause or contribute significantly to an AAQS violation, the maximum impacts attributable to the project are added to the existing background concentrations and are compared to the applicable ambient air quality standard. If an ambient air quality standard is not exceeded, the project is judged to not cause or contribute significantly to an AAQS violation for the applicable pollutant. If an ambient air quality standard is exceeded, it must be determined whether the project will cause a Prevention of Significant Deterioration increment violation, which is achieved by comparing the maximum predicted concentration from the project to the established significant impact level for the applicable pollutant.

Air pollution sources associated with stationary sources are regulated through the permitting authority of the SJVAPCD under the New and Modified Stationary Source Review Rule (Rule 2201). Owners of any new or modified equipment that emits, reduces, or controls air contaminants, except those specifically exempted by the SJVAPCD, are required to apply for an Authority to Construct and Permit to Operate (Rule 2010). Additionally, best available control technology is required on specific types of equipment.

Stationary sources subject to SJVAPCD New and Modified Stationary Source Review Rule must comply with Rule 2201, Section 4.14, Ambient Air Quality Standards, which requires that “emissions from a new or modified Stationary Source shall not cause or make worse the violation of an Ambient Air Quality Standard...the Air Pollution Control Office (APCO) shall take into account the increases in minor and secondary sources emissions as well as the mitigation of emissions through offsets....” The APCO also has discretion to exempt new or modified sources that are exempt from public notification requirements² from this section of Rule 2201.

The most recent version of EPA’s AMS/EPA Regulatory Model - AERMOD (recompiled for the Lakes ISC-AERMOD View interface) was used to predict the dispersion of emissions from the proposed dairy. The analysis is limited to potential impacts from project-related emissions of nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter between 2.5 and 10 micrometers in diameter (PM₁₀), particulate matter less than 2.5 micrometers in diameter (PM_{2.5}), and hydrogen sulfide (H₂S)³. Project-related emissions are based on the proposed increase in the number of cattle and the additional on-site mobile sources required for the expansion.

² *Public Notification and Publication Requirements*, San Joaquin Valley Air Pollution Control District Rule 2201 Section 5.4, amended April 21, 2011.

³ At the time the AAQA analysis was completed (November 2012), a proposed SJVAPCD revision to the hydrogen sulfide (H₂S) emission factor for dairies remained unsettled. Because of the high probability that use of the revised H₂S emission factor would cause a violation of the AAQS, the SJVAPCD is continuing to refine the modeling approach for H₂S and is continuing in-house analysis for similar projects. The SJVAPCD cannot and will not issue a permit for this expansion until H₂S issues have been resolved.

On-site mobile sources generally include diesel-fueled feed loading and pushing tractors, manure scraping tractor and bedding delivery tractor, a feed delivery truck, milk tankers, commodity delivery trucks, and manure/cattle removal trucks. The new corrals would add an additional feed lane that would be used by the feed delivery truck and would require additional tractor use for scraping and bedding delivery. Feed delivery trucks currently travel over the areas designated for the new freestalls; therefore, no increase in feed delivery emissions were assigned to these areas. Two of the proposed freestalls would replace open lot corrals; therefore, no additional emissions were assigned to these areas for scraping or bedding delivery, and emission increases from these new freestalls would be limited to emissions associated with increased herd size (see Appendix G for a detailed description of operations and calculation assumptions). The predicted ambient air quality impact from criteria pollutants is included in Table 5-7.

Pollutant	Averaging Period	Background ($\mu\text{g}/\text{m}^3$)	Project ($\mu\text{g}/\text{m}^3$)	Project + Background ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	CAAQS ($\mu\text{g}/\text{m}^3$)
NO ₂	1-hour	81.76	0.00	81.76	188.68	339
	Annual	9.84	0.09	9.93	100	---
SO ₂	1-hour	19.2	0.00	19.2	195	655
	3-hour	215.0	0.00	215.0	1300	---
	24-hour	88.70	0.00	88.70	---	105
CO	1-hour	2630	0.00	2630	40,000	23,000
	8-hour	1960	4.08	1964	10,000	10,000
PM ₁₀	24-hour	75.0	6.1	81.1	150	50
	Annual	39.0	1.0	40.0	50	20
PM _{2.5}	24-hour	54.0	0.7	54.7	35	---
	Annual	13.2	0.1	13.3	15	12
H ₂ S	1-hour	N/A	23.8	≥23.8	---	42

Bold items show that background 24-hour and annual concentrations of PM_{2.5} and PM₁₀ exceed their respective ambient air quality standards

- ¹ PM_{2.5} concentrations were determined by adjusting the animal movement values for PM₁₀ in the AAQA-PSD report by the CEIDARS specified fraction for livestock dust.

Source: Insight Environmental Consultants, Inc., AAQA 2013a. Appendix G of this EIR.

Several months after the AAQA was prepared, the applicant clarified that the existing occupied, on-site employee residence includes children, and therefore this residence cannot be excluded from the model.⁴ The AAQA was remodeled to include this residence as a receptor. The addition of this receptor did not change the results of the AAQA.

Proposed emissions from the proposed facility will not cause or contribute significantly to a violation of the national and state ambient air quality standards for any of the averaging periods for NO₂, SO₂, CO, or H₂S. Background 24-hour and annual concentrations of PM_{2.5} and PM₁₀ exceed their respective ambient air quality standards. Therefore, these averaging periods for PM_{2.5} and PM₁₀ are evaluated in accordance with the PSD procedure in Title 40, Code of Federal Regulations (CFR),

⁴ Telephone consultations with SJVAPCD staff regarding the inclusion of employee residences in air quality modeling if children or the elderly live on-site. March 14, 2013.

Part 52.21. As shown in Table 5-8, a comparison of the proposed impact from the project to the EPA PSD and SJVAPCD significant impact level values for the increase in emissions demonstrates that the modeled PM_{2.5} and PM₁₀ impacts directly attributable to the project are below SJVAPCD significance levels for both the 24-hour and annual averaging periods.

Table 5-8 Comparison of Maximum Modeled Project Impact with Significance Thresholds			
Pollutant	Averaging Period	Predicted Concentration (µg/m³)	SJVAPCD SIL (µg/m³)
PM ₁₀	24-hour	6.1	10.4
	Annual	1.0	2.08
PM _{2.5}	24-hour	0.7	2.5
	Annual	0.1	0.63

Source: Insight Environmental Consultants, Inc., AAQA 2013a.

Based on the results of the air dispersion modeling, the SIL analysis for PM_{2.5} and PM₁₀, this impact is not considered to be significant. Rule 2201, Section 4.14 requirements would not be applicable because the proposed project emissions are not predicted to violate any ambient air quality standards.

While the Merced County portion of the San Joaquin Valley Air Basin has been classified as non-attainment for PM₁₀ and ozone, the expanded operations of the proposed dairy are not predicted to violate any ambient air quality standards, and this would be considered a less-than-significant impact.

Significance of Impact: Less than significant.

Mitigation Measure AQ-7: None required.

APPENDIX F-5 PROPOSED GREENHOUSE GAS EMISSIONS THRESHOLD FOR THE ANTONIO BRASIL DAIRY EXPANSION EIR

Thresholds Previously Adopted or Recommended

SJVAPCD “Bright-Line” Numeric Threshold

Serving as lead agency for the Van Der Kooi Dairy project (SCH#2006011107), the SJVAPCD established a non-zero threshold in the Supplemental Environmental Impact Report (September 2008) for the establishment of a new dairy in Fresno County. Using the “Regulated Emissions Inventory Capture” methodology set forth by CAPCOA’s *CEQA and Climate Change*, the SJVAPCD established a threshold of an increase in emissions of 38,000 t/yr, or 42,000 U.S. tons per year of CO₂e to be significant. To make the approach more consistent with an analysis of global impacts, this GHG significance threshold is based on the EPA’s major source threshold for NO_x, the CARB statewide emissions inventory for NO_x, and the CARB statewide emissions inventory for GHGs.

Comparison of Non-Zero Significance Thresholds

In efforts to identify a numeric threshold that could be appropriate for this analysis, the table below summarizes thresholds discussed above.

Comparison of Numeric Thresholds				
Category	EPA	SCAQMD	BAAQMD	SJVAPCD
Construction	--	30-yr amortization applied to operational	None recommended at this time	--
Stationary Sources Operation	25,000 t/yr	10,000 t/yr	10,000 t/yr	--
Land Use Projects	--	3,000 t/yr OR 4.6 t CO _{2e} /SP/yr	1,100 t/yr OR 4.6 t CO _{2e} /SP/yr	--
Dairy/Agricultural Project	25,000 t/yr	--	--	38,000 t/yr

SP = Service Population; t/yr = metric tons per year; CO_{2e} = carbon dioxide equivalents

While the EPA's Mandatory GHG Reporting Rule threshold of 25,000 t/yr CO_{2e} represents a reporting threshold and not a threshold of significance specifically, it is estimated to capture approximately 85 percent of the U.S emissions of GHGs and capture all large sources of GHG emissions. This is very similar to the CARB and SCAQMD goal of emissions capture of 90 percent to meet AB 32 goals.

Except for EPA and the SJVAPCD, no other Air District agency has established any valid thresholds for agricultural or dairy uses at this time (November 2012). Because SJVAPCD BPS for dairies and agricultural operations have not been adopted and are illustrative only, application of BPS as a threshold is not possible at this time. ~~Comparing the SJVAPCD numeric threshold for a dairy of 38,000 t/yr of CO_{2e} as established in an adopted EIR with the EPA's reporting threshold of 25,000 t/yr of CO_{2e}, the EPA represents a more conservative value that would capture more large emitters of GHGs.~~ However, the EPA's 25,000 t/yr CO_{2e} is a permit threshold that represents emissions from the entire facility and not just the increment of increase. Therefore, a dual threshold is identified that uses 10,000 t/yr CO_{2e} (used by both SCAQMD and BAAQMD for industrial stationary sources) as the maximum increment of increase and also 25,000 t/yr CO_{2e} as a threshold for total facility emissions.

Identified EIR Threshold

In accordance with CEQA Guideline Section 15064.4, Determining the Significance of Impacts from Greenhouse Gas Emissions, a lead agency should determine the amount of GHG emissions resulting from a project, which may be determined by either using a model or methodology to quantify GHG emissions or by relying on a qualitative analysis or performance based standards. Additionally, a lead agency may consider: (1) whether the project would increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project's emissions exceed a threshold of significance that the lead agency has determined applies to the project; or (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Merced County has not established significance criteria for GHG emissions. Many GHG emission reduction strategies have few or limited agricultural measures, making compliance with these

strategies as a threshold an illogical choice. In efforts to capture both large increases in GHG emissions and large emitters of GHGs, and in consideration of the foregoing, for the purposes of this EIR, the project's contribution to GHG emissions would be considered significant if either of the following apply:

- The increment of increase of the project's GHG emissions would be greater than 10,000 t/yr of CO₂e.
- The increment of increase of the project's GHG emissions would be less than 10,000 t/yr of CO₂e, but the total project facility's GHG emissions (existing plus project increment) would be greater than 25,000 t/yr of CO₂e.

This numeric threshold would only be applicable to dairies, and would not apply to industrial, commercial, residential, or other development types.