



JAN 09 2020

Diana Robinson
Foster Farms - Santa Fe Ranch
PO Box 831
Livingston, CA 95334

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-5576
Project Number: N-1193108

Dear Ms. Robinson:

Enclosed for your review and comment is the District's analysis of Foster Farms - Santa Fe Ranch's application for an Authority to Construct for a modification to increase permitted amount of chicken broilers from 609,280 to 737,032, at 8330 East Avenue, Turlock, CA.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Fred Cruz of Permit Services at (209) 557-6456.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:fjc

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

Samir Sheikh
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
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

**San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Increase Permitted Amount of Broilers at a Poultry Ranch**

Facility Name:	Foster Farms – Santa Fe Ranch	Date:	January 7, 2020
Mailing Address:	PO Box 831 Livingston, CA 95334	Engineer:	Fred Cruz
Contact Persons:	Diana Robinson	Lead Engineer:	James Harader
	Dave Duke		
Telephone:	(209) 394-6806		(209) 495-2653
Application No:	N-5576-4-1		
Project No:	N-1193108		
Deemed Complete:	November 7, 2019		

I. Proposal:

Foster Farms submitted an Authority to Construct (ATC) application to increase the permitted amount of broiler chickens from 609,280 to 737,032 broilers at its Santa Fe Ranch. With this increase in the permitted number of broilers, Foster Farms has indicated that these broilers will be raised for a total of 35 days versus the typical 45 days. This shorter life cycle is because Foster Farm's customer wants a smaller chicken breast product.

II. Applicable Rules:

Rule 2201	New and Modified Stationary Source Review Rule (8/15/2019)
Rule 2520	Federally Mandated Operating Permits (6/21/20)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4550	Conservation Management Practices (CMP) (8/19/04)
Rule 4570	Confined Animal Facilities (CAF) (10/21/10)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
	California Environmental Quality ACT (CEQA)

III. Project Location:

The facility is located at 8330 East Avenue, Turlock, CA (Stanislaus County). The facility is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description:

The primary business of Foster Farms, Santa Fe Ranch is the production of broiler chickens to provide meat for human consumption. Broilers are produced to meet specific requirements of the customer, which can be a retail grocery store, fast-food chain, or an institutional buyer. The production cycle of broilers is divided into two phases: brooding and grow-out. The brooding phase begins when freshly hatched chicks from local hatcheries are delivered by truck and placed in a heated section of a broiler house known as the brood chamber. The brood chamber of the house is maintained above 90 °F for newly hatched chicks. About 26,323 chicks will be released into each house (28 total) at the beginning of each grow-out period. The chicks will be placed on fresh litter in the front half of the house opposite the tunnel-ventilation fans for 10 days. During the birds' first few weeks of growth, the temperature is gradually decreased. Once the birds need floor space, the remaining half of the house is opened and the chicks are fed out to market weight. After completion of the grow-out phase the broilers are transported by truck to a nearby processing plant. Typically, all of the houses within a ranch complex will be populated with chicks and depopulated with mature birds within the same few days.

Typically, all the broiler chickens in the house are the same age and will be removed from the house at the same time. Typically, about 4.5 to 5 percent of the broilers in a house will die (mortality) during the grow-out cycle. Mortality must be removed from each house at least daily during the grow-out cycle to prevent the spread of disease. For this proposed increase in the amount of permitted broilers, the length of the grow-out phase for the broiler chickens will be approximately 35 days. Broiler houses will be empty of chickens for approximately 10 days between flocks to allow for cleaning and maintenance. This results in a cycle time of about 45 days per flock. Typically, six flocks per year are grown in each broiler house.

Broiler Housing

Broilers are raised in either totally or partially enclosed housing with a compacted soil floor covered with dry bedding. The broiler houses at this site are constructed with earthen floors, wood framing, and corrugated metal roofing and siding. The ceiling and walls will be insulated. Each house (28 total) is 340 feet long and 48 feet wide. As stated above, about 26,323 chicks will be released into each house at the beginning of each grow-out period. The birds will be able to move about freely in the heated front section of the house. As the birds grow and require less heat, the other half of the house is opened to allow them to have more space. Water and feed will be provided to the birds throughout the grow-out period. Propane heaters and evaporative cooling pads will be utilized to control temperature within the broiler houses.

In poultry houses, ventilation is used to remove moisture and ammonia from the houses during the winter season and to remove excess heat and ammonia from the houses during the summer season. Partially enclosed housing structures have open sidewalls with curtains that are opened and closed to control the house ventilation rate. All of the new houses will be totally enclosed. In totally enclosed housing, mechanical ventilation is used. Mechanical ventilation is typically provided by an induced draft or negative-pressure system. An induced draft system pulls fresh air into the house from one end and exhausts on the other. A negative-pressure system draws fresh air into the house

from side vents and out through the exhaust fan. Totally enclosed mechanically ventilated housing is known as tunnel-type housing or environmental housing.

The broiler houses have an advanced environmental control system that uses thermostats, sensors, and timers to more effectively control their exhaust fans. Environmental conditions (e.g. temperature, humidity, ventilation, and lighting) within the proposed houses will be controlled by a computer system. The ranch staff will also monitor the conditions within the houses.

V. Equipment Listing:

Broiler Houses

28 mechanically ventilated broiler houses for a total capacity of 737,032 birds (26,323 birds/house).

Pre-project equipment description:

N-5576-4-0 BROILER RANCH CONSISTING OF 609,280 BROILERS; 28 MECHANICALLY VENTILATED POULTRY HOUSES, INCLUDING ELECTRIC FANS/EQUIPMENT TOTALING 280 HP

Post Project equipment description:

N-5576-4-1: BROILER RANCH CONSISTING OF 737,032 BROILERS; 28 MECHANICALLY VENTILATED POULTRY HOUSES, INCLUDING ELECTRIC FANS/EQUIPMENT TOTALING 280 HP

VI. Emission Control Technology Evaluation:

Broiler Houses

The principal pollutants emitted from broiler houses are Volatile Organic Compounds (VOC), ammonia (NH₃), and particulate matter (PM) that is emitted through the ventilation system. Factors that affect emissions from broiler houses include the moisture content of the litter, the pH, the ventilation rate, the temperature and the amount of manure and length of the time the manure is present in the broiler house. For VOC emissions, the amount of VOC emissions from the birds is directly correlated to the amount of feed consumed for their grow-out cycle.

The ventilation rate affects the amount of ammonia, VOC and particulate matter carried out of each broiler house. During the growth of the flock, continuous airflow removes ammonia and other gases and reduces the moisture content of freshly excreted manure. The constant volatilization and removal of ammonia from the broiler houses results in lower nitrogen content of the litter.

The applicant has proposed the following management practices to reduce gaseous emissions from the broiler houses: use of computer-controlled environmental broiler houses, feeding the birds in accordance with NRC or other District approved guidelines to minimize nutrient excretion and complete litter removal at least twice per year.

VII. General Calculations

A. Assumptions”

- Pre-project ranch capacity: 609,280 broilers (application under project N-1103915)
- Post-project ranch capacity: 737,032 broilers (per applicant)
- 50% of total particulate matter emitted from the house is PM₁₀
- Operating schedule: 24 hours/day
- Length of broiler grow-out cycle: 35 days (6.7 cycles per year)
- Maximum number of birds in each house: 26,323 birds/houses (28 houses)
- Minimum broiler house ventilation rate: 2,700 cfm (new chicks on a cold night; per applicant)

B. Emission Factors:

Broiler House Emission Factors		
	(lb/bird-yr)	Source
PM ₁₀	0.02	R.E. Lacey ¹
VOC *	0.0164	Rule 4570 Staff Report
VOC **	0.0106	District Analysis of Cobb 500 Performance Report ²
NH ₃	0.0143	CARB Source Test Results for California Broiler Houses ³

*Pre-project emission factor

The pre-project emission factor is based on data presented on page C-18 of Appendix C of the Rule 4570 staff report (amended October 21, 2010).

**Post project emission factor

The post project emission factor is based on the Cobb 550 Performance data submitted by Foster Farms that demonstrates that the cumulative feed consumption for a 35 day-old bird is significantly less than the cumulative feed consumption for a 45 day old bird. The quantity of manure produced and VOCs emitted are assumed to be directly proportional to the quantity of feed consumed by the bird, thereby reducing VOC emissions. That bird feed data analysis is the basis for the District's use of the revised emission factor.

C. Calculations:

1. Pre-Project Potential to Emit (PE1):

The potential to emit emissions from this broiler modification is based on the pre-project number of broilers housed and emission calculation for each affected

¹ "Particulate Matter and Ammonia Emission Factors for tunnel-Ventilated broiler houses in the Southern US", R.E. Lacey, J.S. Redwine, C.B Parnell, Jr.
² Cobb 500 Broiler Performance & Nutrition Supplemental report for broilers only raised up to 35 days. Reduction in VOC emissions directly correlated to amount of feed consumed by the smaller broilers.
³ "Quantification of Gaseous Emissions from California Broiler Production Houses" May 6, 2005 - Source tests were conducted on mechanically ventilated broiler houses during the spring and fall of 2004. The participants in the project include the following: AIRx Testing; California Air Resources Board; California Department of Food and Agriculture; California Poultry Federation; Foster Farms; & University of California, Davis - Animal Science.

pollutant. Daily emissions are calculated using the annual emission totals divided by 365 days per year.

PM₁₀: 0.02 lb-PM₁₀/bird-yr x 609,280 birds/yr = 12,186 lb-PM₁₀/yr
 PM₁₀: 12,186 lb-PM₁₀/yr ÷ 365 days/yr = 33.4 lb-PM₁₀/day

VOC: 0.0164 lb-VOC/bird-yr x 609,280 birds/yr = 9,992 lb-VOC/yr
 VOC: 9,992 lb-VOC/yr ÷ 365 days/yr = 27.4 lb-VOC/day

NH₃: 0.0143 lb-NH₃/bird-yr x 609,280 birds/yr = 8,713 lb- NH₃/yr
 NH₃: 8,713 lb-NH₃/yr ÷ 365 days/yr = 23.9 lb- NH₃/day

2. Post Project Potential to Emit (PE2)

The potential to emit emissions from this broiler modification is based on the pre-project number of broilers housed and emission calculation for each affected pollutant. Daily emissions are calculated using the annual emission totals divided by 365 days per year.

PM₁₀: 0.02 lb-PM₁₀/bird-yr x 737,032 birds/yr = 14,741 lb-PM₁₀/yr
 PM₁₀: 14,741 lb-PM₁₀/yr ÷ 365 days/yr = 40.4 lb-PM₁₀/day

VOC: 0.0106 lb-VOC/bird-yr x 737,032 birds/yr = 7,812 lb-VOC/yr
 VOC: 7,812 lb-VOC/yr ÷ 365 days/yr = 21.4 lb-VOC/day

NH₃: 0.0143 lb-NH₃/bird-yr x 737,032 birds/yr = 10,540 lb- NH₃/yr
 NH₃: 10,540 lb-NH₃/yr ÷ 365 days/yr = 28.9 lb- NH₃/day

3. Pre-Project Stationary Source Potential to Emit (SSPE1):

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. This is an existing facility and SSPE1 emissions are from project N-1103915, unless otherwise noted.

Pre-Project Stationary Source Potential to Emit SSPE1 (lb/year)						
	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃
N-5576-4-0	0	0	12,186	0	9,992	8,713
N-5576-5-0	0	0	0	0	0	0
N-5576-6-0	739	0	35	225	84	0
N-5576-7-0	739	0	35	225	84	0
SSPE1	1,478	0	12,256	450	10,160	8,713

4. Post Project Stationary Source Potential to Emit (SSPE2):

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Post Project Stationary Source Potential to Emit SSPE2 (lb/year)						
	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃
N-5576-4-1 (ATC)	0	0	14,741	0	7,812	10,540
N-5576-5-0	0	0	0	0	0	0
N-5576-6-0	739	0	35	225	84	0
N-5576-7-0	739	0	35	225	84	0
SSPE2	1,478	0	14,811	450	7,980	10,540

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
SSPE1	1,478	0	12,256	12,256	450	10,160
SSPE2	1,478	0	14,811	14,811	450	7,980
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM_{2.5} assumed to be equal to PM₁₀

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase (lb/year)*	1,478	10,160	0	450	12,256	12,256
Estimated Facility PE before Project Increase (ton/year)**	0.74	5.08	0	0.23	6.13	6.13
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

*Based on SSPE1 calculated in Section VII.C.3 of this document.
 ** PE values converted from lb/year into ton/year by dividing by 2,000 (lb/ton).

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE):

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE will equal PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

Otherwise, BE will equal the Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant. Therefore BE will equal PE1.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification:

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA. Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Since the source is not major for PM₁₀, the project is not a PM_{2.5} Federal Major Modification.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination:

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀

The first step of this PSD applicability determination consists of determining whether the facility is or is not an existing PSD Major Source (See Section VII.C.5 of this document).

If the facility is an existing source but not an existing PSD Major Source, the second step to determine PSD applicability is to determine if the project, by itself, would be a PSD Major Source. If so, then the project must be evaluated to determine if the emissions increase of any PSD pollutant will result in a significant increase and if so, also a significant net emissions increase.

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units (lb/year)*	0	7,812	0	0	14,741	14,741
Total PE from New and Modified Units (ton/year)	0	3.91	0	0	7.37	7.37
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

*Based on SSPE2 calculated in Section VII.C.4 of this document.

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC):

The QNEC is calculated solely to establish emissions that are used to complete the District’s PAS emissions profile screen. Detailed QNEC calculations are included in Appendix C.

VIII. Compliance

Rule 1070 Inspections

This rule applies to any source operation, which emits or may emit air contaminants.

This rule allows the District to perform inspections for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations. The rule also allows the District to require record keeping, to make inspections and to conduct tests of air pollution sources.

Therefore, the following conditions will be listed on the ATC for the broiler ranch to ensure compliance:

- {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee’s premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
- {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT):

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions⁴:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

a. New emissions units – PE > 2 lb/day

There are no new emission units proposed.

b. Relocation of emissions units – PE > 2 lb/day

There are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered for relocation of an emissions unit.

c. Modification of emissions units – AIPE > 2 lb/day

The applicant has proposed to modify the broiler house permit by increasing the total amount of broilers housed. Each individual broiler house operates independently and has separate exhaust ventilation. Therefore, each broiler house is a distinct emissions unit. The AIPE emissions from each broiler house is calculated in the following table:

$$\text{AIPE} = \text{PE}_2 - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE₂ = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE}_1 \times (\text{EF}_2/\text{EF}_1)$$

Where,

PE₁ = The emissions unit's PE prior to modification or relocation, (lb/day)

⁴ Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

EF₂ = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF₂ is greater than EF₁ then EF₂/EF₁ shall be set to 1

EF₁ = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$AIPE = PE_2 - (PE_1 * (EF_2 / EF_1))$$

Permit Unit	PE ₂ *	PE ₁	EF ₂	EF ₁	AIPE
N-5576-4-1 VOC	0.76	0.98	0.0106	0.0164	0.12
PM ₁₀	1.44	1.19	0.02 **	0.02	0.25
NH ₃	1.03	0.85	0.0143 **	0.0143	0.18

*Each broiler house is treated as a separate emissions unit and the daily PE₂ and PE₁ emissions are calculated by using the number of broilers per each house multiplied by the corresponding emission factor for each pollutant and that annual emissions total is divided by 365 days per year. The emission factors are annual numbers, so the annual totals have to be divided by the number of days per year to come up with a daily emissions value.

**The pre-project and post project emissions are the same, so EF₂/EF₁ will equal 1.

AIPE is less than 2.0 lbs/day for all pollutants and BACT is not triggered.

d. SB 288 Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 Major Modification; therefore BACT is not triggered for SB 288 Major Modification purposes.

B. Offsets

Pursuant to Section 4.6.9 of District Rule 2201, emission offsets shall not be required for agricultural sources, for criteria pollutants for that source if emissions reductions from that source would not meet the criteria for real, permanent, quantifiable, and enforceable emission reductions. Therefore, offsets are not required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications:

New Major Sources are new facilities, which also become a Major Source. This is an existing facility and does not become a Major Source as a result of this project. As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day:

As stated above, the applicant is not proposing to install any new emissions unit. So, PE calculations are not applicable.

c. Offset Threshold:

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	1,478	1,478	20,000 lb/year	No
SO _x	0	0	54,750 lb/year	No
PM ₁₀	12,256	14,811	29,200 lb/year	No
CO	450	450	200,000 lb/year	No
VOC	10,160	7,980	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for surpassing the offset thresholds.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

Stationary Source Increase in Permitted Emissions SSIPE – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	1,478	1,478	0	20,000 lb/year	No
SO _x	0	0	0	20,000 lb/year	No
PM ₁₀	14,811	12,256	2,555	20,000 lb/year	No
CO	450	450	0	20,000 lb/year	No
VOC	7,980	10,160	-2,180	20,000 lb/year	No
NH ₃	10,540	8,713	1,827	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants are less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification:

Since this facility does not have a Title V operating, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs):

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Broiler Ranch (N-5576-4-1):

For the broiler ranch, the DEL is based on the maximum number of broilers housed at the ranch and the management practices the facility will implement. The maximum number of broilers at the ranch will be listed in the equipment description for permit N-5576-4-1.

- Emissions from each poultry house shall not exceed any of the following limits: 0.02 lb-PM₁₀/bird-year, 0.0106 lb-VOC/bird-year, or 0.0143 lb-NH₃/bird-year. [District Rule 2201]

E. Compliance Assurance:

1. Source Testing

Pursuant to District Practice, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring:

Monitoring is not required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. Therefore, the following conditions will be listed on the ATC to ensure compliance:

Broiler Ranches (N-5576-2-1)

- Permittee shall maintain records of: (1) the number of broilers in each house during each grow out period; (2) the date that each grow out period begins; and (3) date that litter is completely removed from houses. [District Rule 2201]

4. Reporting

Reporting is not required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4101 Visible Emissions

Section 5.0 stipulates that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

Broiler Houses (N-5576-4-1)

Pursuant to Section 4.12, emissions subject to or specifically exempt from Regulation VIII (Fugitive PM₁₀ Prohibitions) are considered to be exempt. Pursuant to District Rule 8081, Section 4.1, on-field agricultural sources are exempt from the requirements of Regulation VIII.

An on-field agricultural source is defined in Rule 8011, Section 3.35 as the following:

Activities conducted solely for the purpose of preparing land for the growing of crops or the raising of fowl or animals, such as brush or timber clearing, grubbing, scraping, ground excavation, land leveling, grading, turning under stalks, disking, or tilling;

Therefore, the broiler houses are exempt from the requirements of Regulation VIII and Rule 4101.

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices (Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Toxic emissions for this proposed unit were calculated using emission factors generated from a 2004 source test conducted on a Broiler House in the District.
- Toxic emissions for this proposed unit were calculated using emission factors based on the table, "Mineral Composition of Manures" (page iv in Appendix III) in 1990 A Review of Poultry Manure Management: Directions for the Future, Agriculture and Agri-Food Canada Poultry Section.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table below). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2013-2017 from Modesto (rural dispersion coefficient selected) to determine the dispersion factors for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The HRA results for the project are summarized in the table below:

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
4-1	4.69	0.03	0.07	2.97E-06	Yes*	No
Project Totals	4.69	0.03	0.07	2.97E-06		
Facility Totals	>1	0.03	0.07	2.97E-06		

*T-BACT is based on a poultry house by poultry house basis. Only the poultry house in the north western most location triggers T-BACT.

Discussion of T-BACT

Unit N-5576-4-1 (Broiler Houses):

T-BACT is required for the norther western-most poultry house because of emissions of Benzene which is a VOC.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Broiler Ranches (N-5576-4-1)

Particulate matter concentration from the broiler houses is not expected to exceed the applicable limit as demonstrated below:

$$\text{PM Conc. (gr/scf)} = \frac{(\text{PM emission rate}) \times (7,000 \text{ gr/lb})}{(\text{Air flow rate}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})}$$

$$\begin{aligned} \text{PM}_{10} \text{ emission rate for each house} &= 40.4 \text{ lb-PM}_{10}/\text{day} \div 28 \text{ houses} \\ &= 1.4 \text{ lb-PM}_{10}/\text{house-day} \end{aligned}$$

$$\begin{aligned} \text{PM emission rate for each house (Assuming 50\% of PM is PM}_{10}\text{):} \\ &= 1.4 \text{ lb-PM}_{10}/\text{house-day} \times 2 \text{ lb-PM/lb-PM}_{10} \\ &= 2.8 \text{ lb-PM/day} \end{aligned}$$

Minimum house ventilation rate = 2,700 scfm

$$\text{PM Conc. (gr/scf)} = \frac{[(2.8 \text{ lb/day}) \times (7,000 \text{ gr/lb})]}{[(2,700 \text{ ft}^3/\text{min}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})]}$$

$$\text{PM Conc.} = 0.005 \text{ gr/scf} < 0.1 \text{ gr/scf}$$

As shown above, PM emissions concentration is below the applicable limit. Therefore, compliance with Rule 4201 is expected and the following condition will be listed on the ATC to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4550 Conservation Management Practices (CMP)

This rule applies to agricultural operation sites located within the San Joaquin Valley Air Basin. The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites.

Pursuant to Section 5.1, effective on and after July 1, 2004, an owner/operator shall implement the applicable CMPs selected pursuant to Section 6.2 for each agricultural operation site.

Pursuant to Section 5.2, an owner/operator shall prepare and submit a CMP application for each agricultural operation site to the APCO for approval. The facility received District approval for its CMP plan on August 31, 2005. Continued compliance with the requirements of District Rule 4550 is expected.

Rule 4570 Confined Animal Facilities (CAF)

This rule applies to Confined Animal Facilities (CAF) located within the San Joaquin Valley Air Basin. The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from Confined Animal Facilities (CAF).

Pursuant to Section 5.1, owners/operators of any CAF shall submit, for approval by the APCO, a permit application for each Confined Animal Facility.

Pursuant to Section 5.1.2, owners/operators of any CAF that becomes a large CAF shall be required to do a 30-day public noticing and commenting period. With this modification this poultry ranch will become a large CAF, bird population in excess of 650,000 birds. The District will perform a 30-day public notice and comment period.

Pursuant to Section 5.1.3, owners/operators of any CAF shall include an emission mitigation plan within the permit application that lists the VOC mitigation measures that the facility will use to comply with all applicable requirements of Sections 5.5 or 5.6.

Pursuant to Section 5.3, owners/operators of any CAF shall implement all VOC emission mitigation measures, as contained in the permit application, on and after 365 days from the date of issuance of either the Authority-to-Construct or the Permit-to-Operate whichever is sooner.

Pursuant to Section 5.5, owners/operators of large CAFs shall comply with the Phase I Mitigation Measures in Section 5.5 until compliance with all applicable Phase II Mitigation Measures in Section 5.6 is demonstrated in accordance with the compliance schedule in Section 8.0.

Pursuant to Section 5.6, owners/operators of CAFs subject to the regulatory threshold in Table 2 shall comply with all applicable Phase II Mitigation Measures in accordance with the compliance schedule in Section 8.0.

Pursuant to Section 8.2 any owner/operator of new or modified facilities that become subject to the Regulatory Threshold requirements of this rule under Table 2 shall comply with the Phase II requirements of Section 6.0.

Pursuant to Table 2, this facility with a maximum bird capacity of 737,032 is a large CAF and is subject to Sections 5.5 and Section 5.6 of the rule.

Based on Phase II permit application form, the applicant has selected the following Phase II mitigation measures to comply with the requirements of this Rule (only the mitigation measures selected by the applicant are shown from Table 4.6 below):

Table 4.6 – Broiler, Duck, or Turkey Phase II Mitigation Measure Requirements	
A. Feed: Owners/operators of a broiler, duck, or turkey CAF shall implement at least one of the following feed mitigation measures:	
1.	a. Feed according to NRC guidelines; or
B. Housing:	
1.	Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues, pursuant to Section 5.4.
2.	Use drinkers that do not drip continuously.
3.	Inspect drinkers at least once every seven days and adjust the height, volume, and location of drinkers if necessary.
4.	Inspect water pipes and drinkers and repair leaks daily.

Based on the mitigation measures selected by the applicant, the following conditions will be included on the ATC to ensure compliance:

General Conditions (Poultry housing permit unit):

- {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
- {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
- {4035} If a licensed veterinarian, a certified nutritionist, the California Department of Food and Agriculture (CDFA), or the United States Department of Agriculture (USDA) determines that any VOC mitigation measure (with a Rule 4570 reference) is detrimental to animal health and needs to be suspended, the Permittee must notify the District in writing within forty-eight (48) hours of the determination including the duration and the specific health condition requiring the mitigation measure to be suspended. If the situation is expected to exist longer than a thirty-day (30) period, the owner/operator shall submit a new emission mitigation plan designating a mitigation measure to be implemented in lieu of the suspended mitigation measure. [District Rule 2201 and Rule 4570]
- {3704} Owners/Operators shall maintain a record of the number of animals of each species and production group at the facility and shall maintain quarterly records of any changes to this information. [District Rule 4570]
- {3657} All records shall be kept and maintained for a minimum of five (5) years and shall be made available to the APCO, ARB and EPA upon request. [District Rule 4570]
- {3658} This permit does not authorize the violation of any conditions established for this facility (e.g. maximum number of animals or animal units, construction requirements, etc.) in the Conditional Use Permit (CUP), Special Use Permit (SUP), Site Approval, Site Plan Review (SPR), or other approval documents issued by a local, state, or federal agency. [District Rules 2070 and 2080]

Poultry Housing Permit (N-5576-4-1)

Feed:

➤ Feed according to National Research Council (NRC) guidelines.

- Permittee shall feed all broilers according to National Research Council (NRC) guidelines. [District Rules 2201 and 4570]

- {3512} Permittee shall maintain records of feed content, formulation, and quantity of feed additive utilized, to demonstrate compliance with National Research Council (NRC) guidelines. Records such as feed company guaranteed analyses (feed tags), ration sheets). [District Rule 4570]

Housing:

- Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues
 - {3675} Permittee shall use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues. [District Rule 4570]
 - {3676} Permittee shall maintain records to demonstrate that a dry housing cleaning method is maintained. For times when a wet cleaning method is required, the reason should be included as part of the records. [District Rule 4570]
- Use drinkers that do not drip continuously
 - {modified 3677} Permittee shall use drinkers that do not drip continuously. [District Rule 4570]
- Adjust the height, volume, and location of drinkers, if necessary, at least once every seven (7) days
 - {modified 3678} Permittee shall adjust the height, volume, and location of drinkers at least once every 7 days. [District Rule 4570]
 - {3679} Permittee shall maintain record of the dates adjustments were made to the height, volume, and location of drinkers. [District Rule 4570]
- Inspect water pipes and drinkers and repair leaks daily
 - {modified 3685} Permittee shall inspect water pipes and drinkers and repair leaks daily. [District Rule 4570]
 - {3686} Permittee shall record the date that water pipes and drinkers are inspected and leaks are repaired. [District Rule 4570]

Since the facility has proposed all the required mitigation measure required by this rule, compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

District CEQA Findings

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

The County of Stanislaus (County) is the public agency having principal responsibility for approving the Project. As such, the County served as the Lead Agency for the Project. The County determined the project to be exempt from CEQA according to CEQA Guidelines §15268 (Ministerial). The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381).

The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project design elements and permit conditions, project specific stationary source emissions will be reduced to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation:

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct N-5576-4-1 subject to the permit conditions on the attached draft Authority to Construct in Appendix A.

X. Billing Information:

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-5576-4-1	3020-01-D	280.0 hp electric motors	\$495

Appendices:

- A: Draft Authority to Construct permit N-5576-4-1
- B: Current Permit to Operate N-5576-4-0
- C: Quarterly Net Emissions Change
- D: BACT Top-down Analysis and BACT Guideline
- E: Natural Gas Costs
- F: RMR Summary

APPENDIX A

Draft Authority to Construct N-5576-4-1

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-5576-4-1

LEGAL OWNER OR OPERATOR: FOSTER FARMS, SANTA FE RANCH
MAILING ADDRESS: ATTN: ENV AFFAIRS
PO BOX 831
LIVINGSTON, CA 95334

LOCATION: 8330 EAST AVE
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

MODIFICATION OF BROILER RANCH CONSISTING OF 609,280 BROILERS; 28 MECHANICALLY VENTILATED POULTRY HOUSES, INCLUDING ELECTRIC FANS/EQUIPMENT TOTALING 280 HP: INCREASE MAXIMUM ALLOWABLE BIRD NUMBERS FROM 609,280 BROILERS TO 737,032 BROILERS

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {3658} This permit does not authorize the violation of any conditions established for this facility in the Conditional Use Permit (CUP), Special Use Permit (SUP), Site Approval, Site Plan Review (SPR), or other approval documents issued by a local, state, or federal agency. [Public Resources Code 21000-21177: California Environmental Quality Act]
4. Particulate matter emissions from each poultry house shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. The maximum number of birds the entire facility shall house is 737,032 birds. Each individual broiler house shall not house more than 26,323 birds. [District Rules 2201 and 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCCO

Arnaud Marjolle, Director of Permit Services

N-5576-4-1 Jan 8 2020 4 34PM - CRUZF Joint Inspection NOT Required

6. Emissions from each poultry house shall not exceed any of the following limits: 0.02 lb-PM10/bird-year, 0.0106 lb-VOC/bird-year, or 0.0143 lb-NH3/bird-year. [District Rule 2201]
7. Permittee shall house broilers in completely enclosed, mechanically-ventilated houses with environmental climate controls. [District Rules 2201 and 4570]
8. Permittee shall feed all broilers according to National Research Council (NRC) guidelines. [District Rules 2201 and 4570]
9. All broiler houses shall be inspected for mortality at least twice per day. Mortality shall be removed for proper disposal immediately after detection. Records of mortality inspection shall be maintained at least once per day. [District Rule 2201]
10. {4452} If a licensed veterinarian or a certified nutritionist determines that any VOC mitigation measure will be required to be suspended as a detriment to animal health or necessary for the animal to molt, the owners/operators must notify the District in writing within forty-eight (48) hours of the determination including the duration and the specific health condition requiring the mitigation measure to be suspended. If the situation is expected to exist longer than a thirty-day (30) period, the owner/operator shall submit a new emission mitigation plan designating a mitigation measure to be implemented in lieu of the suspended mitigation measure. [District Rule 4570]
11. {4449} Permittee shall maintain a record of the number of animals of each species and production group at the facility and shall maintain quarterly records of any changes to this information. [District Rule 4570]
12. {4455} Permittee shall maintain records of feed content, formulation, and quantity of feed additive utilized, to demonstrate compliance with National Research Council (NRC) guidelines. Records such as feed company guaranteed analyses (feed tags), ration sheets, or feed purchase records may be used to meet this requirement. [District Rule 4570]
13. {3675} Permittee shall use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues. [District Rule 4570]
14. {3676} Permittee shall maintain records to demonstrate that a dry housing cleaning method is maintained. For times when a wet cleaning method is required, the reason should be included as part of the records. [District Rule 4570]
15. {4567} Permittee shall use drinkers that do not drip continuously. [District Rule 4570]
16. {4568} Permittee shall inspect drinkers at least once every seven (7) days and adjust the height, volume, and location of drinkers if necessary. [District Rule 4570]
17. {4569} Permittee shall record the date that drinkers are inspected dates adjustments were made to the height, volume, and location of drinkers. [District Rule 4570]
18. {4570} Permittee shall inspect water pipes and drinkers and repair leaks daily. [District Rule 4570]
19. {4571} Permittee shall maintain records indicating that water pipes and drinkers are inspected daily and that any leaks are repaired. [District Rule 4570]
20. {4453} Permittee shall keep and maintain all records for a minimum of five (5) years and shall make records available to the APCO and EPA upon request. [District Rule 4570]

DRAFT

APPENDIX B

**Current Permit to Operate
N-5576-4-0**

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-5576-4-0

EXPIRATION DATE: 12/31/2023

EQUIPMENT DESCRIPTION:

BROILER RANCH CONSISTING OF 609,280 BROILERS; 28 MECHANICALLY VENTILATED POULTRY HOUSES, INCLUDING ELECTRIC FANS/EQUIPMENT TOTALING 280 HP

PERMIT UNIT REQUIREMENTS

1. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. This permit does not authorize the violation of any conditions established for this facility in the Conditional Use Permit (CUP), Special Use Permit (SUP), Site Approval, Site Plan Review (SPR), or other approval documents issued by a local, state, or federal agency. [Public Resources Code 21000-21177: California Environmental Quality Act]
4. If a licensed veterinarian or a certified nutritionist determines that any VOC mitigation measure will be required to be suspended as a detriment to animal health or necessary for the animal to molt, the owners/operators must notify the District in writing within forty-eight (48) hours of the determination including the duration and the specific health condition requiring the mitigation measure to be suspended. If the situation is expected to exist longer than a thirty-day (30) period, the owner/operator shall submit a new emission mitigation plan designating a mitigation measure to be implemented in lieu of the suspended mitigation measure. [District Rule 4570]
5. Permittee shall maintain a record of the number of animals of each species and production group at the facility and shall maintain quarterly records of any changes to this information. [District Rule 4570]
6. Permittee shall feed all animals according to National Research Council (NRC) guidelines. [District Rule 4570]
7. Permittee shall maintain records of feed content, formulation, and quantity of feed additive utilized, to demonstrate compliance with National Research Council (NRC) guidelines. Records such as feed company guaranteed analyses (feed tags), ration sheets, or feed purchase records may be used to meet this requirement. [District Rule 4570]
8. Permittee shall use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues. [District Rule 4570]
9. Permittee shall maintain records to demonstrate that a dry housing cleaning method is maintained. For times when a wet cleaning method is required, the reason should be included as part of the records. [District Rule 4570]
10. Permittee shall use drinkers that do not drip continuously. [District Rule 4570]
11. Permittee shall inspect drinkers at least once every seven (7) days and adjust the height, volume, and location of drinkers if necessary. [District Rule 4570]
12. Permittee shall record the date that drinkers are inspected dates adjustments were made to the height, volume, and location of drinkers. [District Rule 4570]
13. Permittee shall inspect water pipes and drinkers and repair leaks daily. [District Rule 4570]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

14. Permittee shall maintain records indicating that water pipes and drinkers are inspected daily and that any leaks are repaired. [District Rule 4570]
15. Permittee shall keep and maintain all records for a minimum of five (5) years and shall make records available to the APCO and EPA upon request. [District Rule 4570]

These terms and conditions are part of the Facility-wide Permit to Operate.

APPENDIX C

Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - BE, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the emission calculations in this evaluation, PE2_{quarterly} and BE_{quarterly} can be calculated as follows:

$$PE2_{quarterly} = PE2_{annual} \div 4 \text{ quarters/year}$$

$$BE_{quarterly} = BE_{annual} \div 4 \text{ quarters/year}$$

Santa Fe Ranch N-5576-4-1:

$$\begin{aligned} \Delta PE_{VOC} &= 7,812 \text{ lb-VOC/yr} - 9,992 \text{ lb-VOC/yr} &&= -2,180 \text{ lb/year} \\ \Delta PE_{PM_{10}} &= 14,741 \text{ lb-PM}_{10}\text{/yr} - 12,186 \text{ lb-PM}_{10}\text{/yr} &&= 2,555 \text{ lb/year} \\ \Delta PE_{NH_3} &= 10,540 \text{ lb-NH}_3\text{/yr} - 8,713 \text{ lb-NH}_3\text{/yr} &&= 1,827 \text{ lb/year} \end{aligned}$$

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
VOC	-545	-545	-545	-545
PM ₁₀	638	639	639	639
NH ₃	456	457	457	457

APPENDIX D

RMR Summary

APPENDIX D

BACT Guideline and BACT Analysis for Broiler House

Best Available Control Technology (BACT) Guideline 5.7.1
Last Update: 2/1/2008

Pollutant	Broiler House		
	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NH3	55% control 1) completely enclosed mechanical ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions; all birds fed in accordance with NRC or other District-approved guidelines; houses completely cleaned out at least twice per year; and all mortality removed from houses twice per day OR 2) acidifying litter amendments; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses twice per day	80% control (capture and biofiltration)	
VOC	19% control 1) completely enclosed mechanical ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions; all birds fed in accordance with NRC or other District-approved guidelines; houses completely cleaned out at least twice per year; and all mortality removed from houses twice per day OR 2) acidifying litter amendments; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses twice per day	1) 98% control (capture and thermal incineration) 2) 95% control (capture and catalytic incineration) 3) 95% control (capture and carbon adsorption) 4) 80% control (capture and biofiltration)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on [Details Page](#).

Top Down BACT Analysis for Broiler Houses

1. BACT Analysis for VOC Emissions:

The SJVUAPCD BACT Clearinghouse BACT guideline 5.7.1, 3rd quarter 2014, applies to broiler houses.

a. Step 1 - Identify all control technologies

The control technology options include:

- 1) Completely enclosed mechanical ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions; all birds fed in accordance with NRC or other District-approved guidelines; houses completely cleaned out at least twice per year; and all mortality removed from houses twice per day (Achieved-in-Practice)
- 2) Acidifying litter amendments; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses twice per day (Achieved-in-Practice)
- 3) Capture and thermal incineration (Technologically Feasible)
- 4) Capture and catalytic incineration (Technologically Feasible)
- 5) Capture and carbon adsorption (Technologically Feasible)
- 6) Capture and biofiltration (Technologically Feasible)

b. Step 2 - Eliminate options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

Control technologies for VOC:

VOC Emission Control Technology Rankings		
Rank	Control Efficiency	Status
1) Thermal Incineration	98%	Technologically Feasible
2) Catalytic Incineration	95%	Technologically Feasible
3) Carbon Adsorption	95%	Technologically Feasible
4) Biofiltration	80%	Technologically Feasible
5) Broiler House Construction and Litter Management Practices	19%	Achieved in Practice
6) Acidifying Litter Amendments	19%	Achieved in Practice

d. Step 4 - Cost Effectiveness Analysis

A cost effective analysis was done in 2014 for another Foster Farms facility under project N-1142470. Based on that control technology cost effectiveness analysis in 2014, will not be cost effective in 2019.

Thermal & Catalytic Incineration:

The following cost analysis demonstrates that the cost of natural gas alone, not including any capital costs, causes catalytic incineration to exceed the District VOC cost effective threshold. The temperature required for catalytic incineration is 600 °F. The temperature required for thermal incineration is 1,400 °F. Since the fuel requirements and fuel cost for thermal incineration are greater than catalytic incineration, the following analysis also demonstrates that thermal incineration would not be cost effective.

Broiler House Air Flow Rate

The maximum airflow rate for each new broiler house = 250,000 cfm (per applicant)

Fuel Requirement:

The gas leaving the broiler house is principally air, with a volumetric specific heat of 0.0194 Btu/scf - °F under standard conditions.

$$\text{Natural Gas Requirement} = (\text{flow})(C_{p\text{Air}})(\Delta T)(1-\text{HEF})$$

Where:

Flow (Q) = broiler house exhaust: 211,190 ft³/hr/house

C_{pAir} = specific heat of air: 0.0194 Btu/scf -°F .

ΔT = increase in the temperature of the contaminated air stream required for catalytic oxidation to occur (It will be assumed that the air stream would increase in temperature from 100 °F to 600 °F.)

HEF = heat exchanger factor: 0.7

$$\begin{aligned} \text{Natural Gas Requirement} &= (211,190 \text{ scf/hr})(0.0194 \text{ Btu/scf -}^\circ\text{F})(600^\circ\text{F} - 100^\circ\text{F})(1-0.7) \\ &= 614,563 \text{ Btu/house-hr} \end{aligned}$$

Fuel Cost for Incinerator:

The cost for natural gas shall be based upon the average industrial price for natural gas in California for the 12-month period from December 2009 to November 2010 from the Energy Information Administration (EIA) Website:

http://tonto.eia.doe.gov/dnav/ng/ng_sum_lsum_dcu_SCA_m.htm

Average Cost for natural gas = \$7.211/MMBtu

The oxidizer is assumed to operate 24 hours per day and 365 days per year.

The fuel costs to operate the incinerator are calculated as follows:

$$614,563 \text{ Btu/house-hr} \times 1 \text{ MMBtu}/10^6 \text{ Btu} \times 24 \text{ hr/day} \times 365 \text{ day/year} \times \$7.211/\text{MMBtu} \\ = \$38,821/\text{house-year}$$

District Standard Emissions

District Standard Emissions serve as a baseline from which to estimate potential emissions reductions achievable by technologically feasible controls. According to the District's BACT guideline, if there is no SJVAPCD prohibitory rule emission limit that applies to the particular new emission unit or if the existing emission unit does not have permitted emission limits, District standard emissions for the unit are equal to the emissions from similar equipment that is commonly available in the District. In no case shall the emissions used be higher than that allowed by State or Federal requirements. If insufficient information is available to make a determination regarding emissions from common available equipment in the District, District standard emissions will be estimated based on EPA's Compilation of Air Pollutant Emission Factors (AP-42), or other references as determined by the SJVAPCD to be appropriate.

As calculated in Section VII.C of this document, District standard emissions will be equal to the post-project annual PE. Thus:

$$\text{District standard emissions} = \text{PE}_2 = 11,055 \text{ lb-VOC/year} \div 28 \text{ houses} \\ = 395 \text{ lb-VOC/house-year}$$

Technologically Feasible Controlled Emissions (TFCE)

It will be shown that if thermal incineration with 98% control efficiency is not cost effective, catalytic incineration with lower control efficiency 95% will not be cost effective either. Thus

TFCE are calculated according to the following formula:

$$\text{TFCE} = \text{PE}_2 \times (1 - \text{CE}_{\text{Tech Feas BACT}})$$

$$\text{TFCE} = 395 \text{ lb/house-yr} \times (1 - 0.98)$$

$$\text{TFCE} = 7.9 \text{ lb/house-yr}$$

Emission Reductions Achievable from Technologically Feasible Option

$$\begin{aligned} \text{VOC Reductions} &= \text{District Standard Emissions} - \text{TFCE} \\ &= 395 \text{ lb/house-yr} - 7.9 \text{ lb/yr} \\ &= 387.1 \text{ lb/house-yr} \\ &= 0.19 \text{ tons/house-yr} \end{aligned}$$

Cost Effective Calculation:

$$\begin{aligned}\text{Cost of Reduction (\$/ton)} &= \text{Annual Fuel Cost of Tech Feas Option} / \text{VOC Reductions} \\ &\quad \text{from Tech Feas} \\ &= (\$38,821/\text{yr}) / (0.19 \text{ tons}/\text{yr}) \\ &= \$204,321/\text{ton}\end{aligned}$$

As shown above, the natural gas cost alone for thermal or catalytic incineration would cause the cost of the VOC reductions to be greater than the \$17,500/ton cost effectiveness threshold of the District BACT policy. The equipment is therefore not cost effective and is being removed from consideration at this time.

Carbon Adsorption:

Carbon adsorption occurs when air that contains contaminants is blown through a carbon unit and the pollutants are adsorbed onto the surface in the variously sized pores in the activated carbon unit.

Two main areas of cost are the cost of the device itself, and the operating cost of the carbon adsorption system.

The following cost analysis demonstrates that the cost of activated carbon alone, not including any other costs, causes carbon adsorption to exceed the District cost effective threshold. Treated activated carbon can control both VOC and ammonia emissions. Although this technology can control both pollutants, a cost effective threshold has not been established for ammonia. Therefore, only achieved-in-practice options will be considered for ammonia at this time and a multi-pollutant cost effective analysis for VOC and ammonia will not be performed.

District Standard Emissions

As calculated in Section VII.C of this document, District standard emissions will be equal to the post-project annual PE. Thus:

$$\text{District standard emissions} = \text{PE}_2 = 395 \text{ lb-VOC}/\text{house-yr}$$

Technologically Feasible Controlled Emissions (TFCE)

TFCE are calculated according to the following formula:

$$\text{TFCE} = \text{PE}_2 \times (1 - \text{CE}_{\text{Tech Feas BACT}})$$

$$\text{TFCE} = 395 \text{ lb}/\text{house-yr} \times (1 - 0.95)$$

$$\text{TFCE} = 19.8 \text{ lb}/\text{house-yr}$$

Emission Reductions Achievable from Technologically Feasible Option

$$\begin{aligned}\text{VOC Reductions} &= \text{District Standard Emissions} - \text{TFCE} \\ &= 395 \text{ lb/house-yr} - 19.8 \text{ lb/yr} \\ &= 375.2 \text{ lb/house-yr}\end{aligned}$$

Amount of Activated Carbon Required for VOC Control

Carbon can adsorb 20% of its weight in VOCs.⁸

$$\begin{aligned}\text{Carbon required} &= (375.2 \text{ lb-VOC/year}) \times 1 \text{ lb-Carbon}/0.2 \text{ lb-VOC} \\ &= 1,876 \text{ lb-carbon/year}\end{aligned}$$

Cost for Activated Carbon for VOC Control:

Assuming a price for carbon of \$2.00/lb (taken from GEAR 12 - Motor Vehicle and Mobile Equipment Coating Operations)

$$\text{Carbon cost} = 1,876 \text{ lb-carbon/yr} \times \$2.00/\text{lb} = \$3,752/\text{house-year}$$

Cost of VOC Emission Reductions

$$\begin{aligned}\text{Cost of Reduction (\$/ton)} &= \text{Annual Cost of Tech Feas Option} / \text{VOC Reductions from Tech Feas} \\ &= (\$3,752/\text{yr}) / ((375.2 \text{ lb-VOC}/\text{yr}) (1 \text{ ton}/2,000 \text{ lb})) \\ &= \$20,000/\text{ton}\end{aligned}$$

As shown above, the cost of the activated carbon alone for carbon adsorption would cause the cost of the VOC reductions to be greater than the \$17,500/ton cost effectiveness threshold of the District BACT policy. Therefore, this option is not cost effective and is being removed from consideration at this time.

Biofiltration:

Biofiltration is a method of reducing pollutants in which exhaust air that contains contaminants is blown through a media (e.g., soil, compost, wood chips) that supports a microbial population. The microbes utilize the pollutants such as VOCs and ammonia as nutrients and oxidize the compounds as they pass through the filter.

The following cost analysis demonstrates that the cost of biofiltration exceeds the District cost effective threshold. Biofiltration can control both VOC and ammonia emissions. Although, this technology can control both pollutants, a cost effective threshold has not been established for ammonia. Therefore, only achieved-in-practice options will be considered for ammonia at this time and a multi-pollutant cost effective analysis for VOC and ammonia will not be performed.

⁸ District GEAR 9 - Soil Remediation Project Utilizing an Activated Carbon System

Cost of Biofiltration

The cost estimate for a biofiltration system is taken from the "Final Draft Staff Report with Appendices for Amended Revised Proposed Amendments to District Rule 4570" (dated October 21, 2010), Appendix E, Section IV. This staff report can be viewed at the following web address:

http://www.valleyair.org/Workshops/postings/2010/10-21-10_r4570/R4570App-E-Class2OCT.pdf

The cost estimates for a biofiltration are based on the above referenced report. The cost is largely dependent on the airflow rate that the biofilter must handle. Biofilters used to treat exhaust air should be sized to treat the maximum ventilation rate, which is typically the warm weather rate. The higher cost value is representative of a biotrickling filter, which may be necessary to handle the high air flow rates from the houses.

Capital Cost for a biofilter (2010): \$3-35/cfm

Operating Costs for a biofilter (2010): \$2.12-20.00/cfm-yr

For a conservative estimate, the lowest values will be used, thus:

Capital Cost for a biofilter (2010): \$3/cfm

Operating Costs for a biofilter (2010): \$2.12/cfm-yr

Adjusting for inflation (using US Bureau of Labor Statistics, <http://data.bls.gov/cgi-bin/cpicalc.pl>):

Capital Cost for a biofilter (2019): \$3.56/cfm

Operating Costs for a biofilter (2019): \$2.52/cfm-yr

The maximum airflow rate for each new broiler house = 211,190 cfm (per applicant)

The capital and operating costs are calculated as follows:

Capital Cost for a biofilter = $\$3.56/\text{cfm} \times 211,190 \text{ cfm} = \$751,836$

Operating Costs for a biofilter = $\$2.52/\text{cfm-yr} \times 211,190 \text{ cfm} = \$532,199/\text{yr}$

Annualized Capital Cost of Biofiltration

Pursuant to District Policy APR 1305, Section X (11/09/1999), the cost for the purchase of the biofilter will be spread over the expected life of the system using the capital recovery equation. Although, the biofilter media (e.g., soil, compost, wood chips) must be replaced after 3-5 years, this does not constitute a significant cost of the system. Therefore, the expected life of the system (fans, media, ductwork, plenum, etc.) is estimated at 10 years. A 10% interest rate is assumed in the equation and the assumption will be made that the equipment has no salvage value at the end of the ten-year cycle.

$$A = [P \times i(1+i)^n] / [(1+i)^n - 1]$$

Where:

A	=	Annual Cost
P	=	Present Value
i	=	Interest Rate (10%)
N	=	Equipment Life (10 years)

$$A = [\$751,836 \times 0.1(1.1)^{10}] / [(1.1)^{10} - 1]$$

$$= \$122,358/\text{year}$$

Total Annual Cost Estimates

The total annualized capital cost and operating costs for the biofilter are given below. For the least expensive biofilters, the biofilter media (e.g., soil, compost, wood chips) must be replaced after 3-5 years in order to remain effective and this may be an additional cost. There would also be increased electricity usage to overcome the pressure drop caused by the biofilter. This cost was not quantified.

$$\begin{aligned} \text{Total annual cost} &= (\text{total annualized capital cost}) + (\text{operating cost for a biofilter}) \\ &= (\$122,358/\text{yr}) + (\$532,199/\text{yr}) \\ &= \$654,557/\text{year} \end{aligned}$$

District Standard Emissions

As calculated in Section VII.C of this document, District standard emissions will be equal to the post-project annual PE. Thus:

$$\text{District standard emissions} = \text{PE}_2 = 395 \text{ lb-VOC/house-yr}$$

Technologically Feasible Controlled Emissions

Technologically feasible controlled emissions are calculated based on a capture efficiency of 80% and a control efficiency of 85%, as follows:

$$\text{Annual VOC (lb-VOC/house-year)} \times [\text{Capture Efficiency}] \times [\text{Biofilter Control Efficiency}]$$

Tech Feasible Emissions are calculated as follows:

$$\begin{aligned} \text{Tech Feasible Emissions} &= \text{PE} \times [\text{Capture Efficiency}] \times [\text{Biofilter Control Efficiency}] \\ &= (395 \text{ lb-VOC/yr}) \times (1 - 0.80) \times (1 - 0.85) \\ &= 11.9 \text{ lb-VOC/yr} \end{aligned}$$

Emission Reductions Achievable from Technologically Feasible Option

$$\begin{aligned} \text{VOC Reductions} &= \text{District Standard Emissions} - \text{Tech Feasible Emissions} \\ &= 395 \text{ lb/yr} - 11.9 \text{ lb/yr} \\ &= 383.1 \text{ lb/yr} \end{aligned}$$

Cost Effective Calculation:

$$\begin{aligned}\text{Cost of Reduction (\$/ton)} &= \text{Annual Fuel Cost of Tech Feas Option/ VOC Reductions} \\ &\quad \text{from Tech Feas} \\ &= (\$654,557/\text{yr}) / ((383.1 \text{ lb-VOC}/\text{yr}) (1 \text{ ton}/2,000 \text{ lb})) \\ &= \$3,417,160/\text{ton}\end{aligned}$$

As shown above, the capital cost alone for a biofilter would cause the cost of the VOC reductions to be greater than the \$17,500/ton cost effectiveness threshold of the District BACT policy. Therefore, this option is not cost effective and is being removed from consideration at this time.

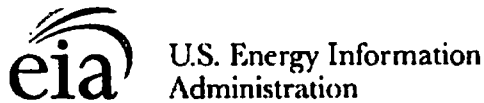
The facility is proposing completely enclosed mechanically ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions (e.g. temperature, humidity and ventilation) within the houses. The facility is also proposing to feed all birds in accordance with National Research Council (NRC) or other District-approved guidelines and to remove all mortality from houses twice per day. Since there is not a more effective control option, no further cost analysis is required.

e. Step 5 - Select BACT

BACT for VOC for this operation is determined to be completely enclosed mechanically ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions (e.g. temperature, humidity, ventilation) within the houses; feeding all birds in accordance with National Research Council (NRC) or other District-approved guidelines; and removal of all mortality from houses twice per day.

APPENDIX E

Natural Gas Costs



NATURAL GAS

OVERVIEW **DATA** ANALYSIS & PROJECTIONS

GLOSSARY FAQs

Referring Pages:

- Average Commercial Price
- U.S. Natural Gas Prices
- Average Commercial Price

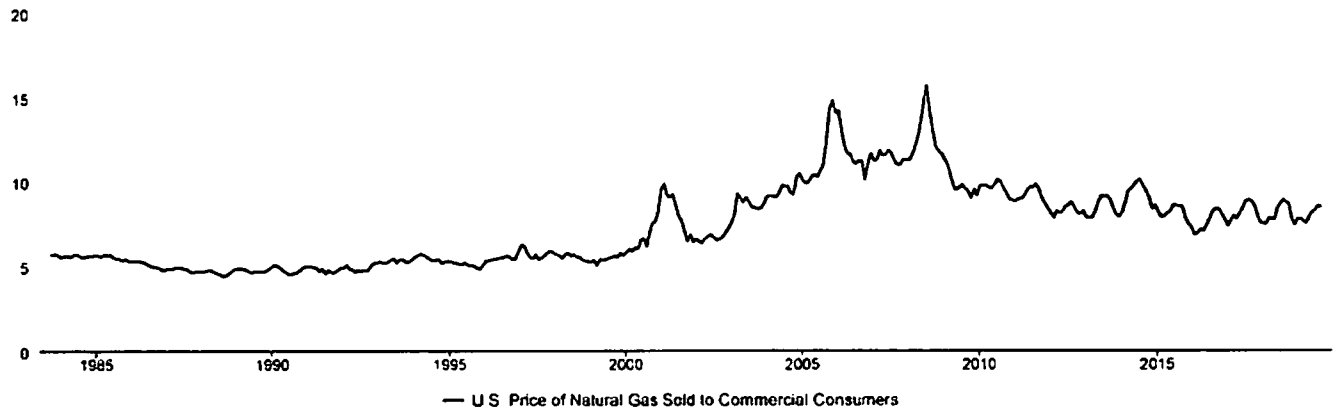
View History: Monthly Annual

Download Data (XLS File)

U.S. Price of Natural Gas Sold to Commercial Consumers

DOWNLOAD

Dollars per Thousand Cubic Feet



Source: U.S. Energy Information Administration

Chart Tools

no analysis applied

This series is available through the EIA open data API and can be downloaded to Excel or embedded as an interactive chart or map on your website.

U.S. Price of Natural Gas Sold to Commercial Consumers (Dollars per Thousand Cubic Feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1973	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1974	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1976	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1977	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1978	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1979	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1980	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1982	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1983	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.62	5.67	5.62
1984	5.49	5.54	5.57	5.52	5.60	5.67	5.60	5.47	5.53	5.54	5.56	5.60
1985	5.62	5.53	5.59	5.65	5.59	5.65	5.44	5.42	5.37	5.30	5.39	5.25
1986	5.25	5.28	5.25	5.23	5.19	5.09	5.02	4.90	4.93	4.88	4.74	4.73
1987	4.80	4.79	4.80	4.90	4.88	4.87	4.78	4.77	4.60	4.62	4.66	4.67
1988	4.60	4.69	4.69	4.71	4.61	4.53	4.48	4.37	4.41	4.53	4.69	4.78
1989	4.81	4.80	4.79	4.77	4.64	4.57	4.65	4.61	4.67	4.61	4.71	4.81
1990	4.97	5.05	4.92	4.82	4.63	4.56	4.45	4.55	4.55	4.66	4.81	4.92
1991	4.94	4.94	4.89	4.87	4.65	4.80	4.50	4.73	4.57	4.58	4.71	4.84
1992	4.85	5.03	4.77	4.77	4.59	4.72	4.64	4.73	4.69	4.90	5.12	5.11
1993	5.23	5.14	5.10	5.19	5.31	5.40	5.15	5.34	5.35	5.18	5.21	5.33
1994	5.50	5.58	5.67	5.60	5.47	5.37	5.25	5.31	5.36	5.11	5.19	5.24

1995	5.23	5.14	5.12	5.08	5.04	5.16	5.03	4.99	4.98	4.82	4.77	5.00
1996	5.29	5.25	5.36	5.34	5.40	5.43	5.46	5.56	5.46	5.33	5.40	5.78
1997	6.19	6.14	5.73	5.46	5.39	5.64	5.35	5.43	5.58	5.74	5.86	5.72
1998	5.65	5.59	5.40	5.64	5.73	5.51	5.64	5.46	5.49	5.31	5.22	5.23
1999	5.19	5.28	4.97	5.31	5.34	5.29	5.43	5.45	5.55	5.46	5.72	5.57
2000	5.77	5.95	5.78	6.03	5.97	6.49	6.55	6.08	6.92	7.48	7.57	8.20
2001	9.50	9.80	9.14	9.01	9.19	8.50	7.90	7.61	6.66	6.39	6.79	6.35
2002	6.51	6.40	6.28	6.56	6.68	6.80	6.62	6.45	6.54	6.64	6.89	7.16
2003	7.48	7.98	9.20	8.97	8.71	9.00	8.73	8.40	8.41	8.28	8.36	8.62
2004	9.06	9.10	9.05	9.02	9.23	9.71	9.65	9.66	9.26	9.17	10.21	10.42
2005	10.02	9.83	9.91	10.25	10.35	10.22	10.58	11.01	12.59	14.29	14.76	14.01
2006	14.16	12.95	12.07	11.57	11.61	11.09	10.98	11.20	11.16	10.05	11.05	11.61
2007	11.18	11.22	11.79	11.50	11.51	11.81	11.63	11.19	10.92	10.93	11.23	11.24
2008	11.20	11.49	12.03	12.63	13.51	14.68	15.64	14.19	13.12	12.06	11.72	11.61
2009	11.28	10.98	10.46	9.70	9.42	9.53	9.74	9.52	9.35	8.93	9.45	9.10
2010	9.65	9.71	9.70	9.57	9.50	9.72	10.04	9.94	9.56	9.27	8.86	8.82
2011	8.74	8.88	8.89	9.02	9.35	9.57	9.58	9.77	9.46	8.94	8.62	8.30
2012	8.04	7.76	8.16	8.04	8.14	8.44	8.52	8.71	8.35	8.07	7.99	8.18
2013	7.75	7.78	7.77	8.15	8.71	9.07	9.04	9.04	8.80	8.28	7.94	7.81
2014	8.11	8.69	9.35	9.49	9.70	9.94	10.06	9.67	9.39	8.97	8.29	8.53
2015	8.15	7.81	7.85	8.03	8.13	8.52	8.49	8.46	8.43	7.79	7.39	7.23
2016	6.75	6.86	7.08	6.98	7.32	7.72	8.14	8.30	8.28	7.96	7.67	7.27
2017	7.58	7.89	7.68	8.04	8.31	8.75	8.81	8.76	8.52	7.97	7.51	7.42
2018	7.39	7.74	7.71	7.65	8.34	8.58	8.84	8.69	8.57	7.69	7.34	7.70
2019	7.70	7.58	7.44	7.76	8.08	8.22	8.45	8.41				

- = No Data Reported, -- = Not Applicable, NA = Not Available, W = Withheld to avoid disclosure of individual company data

Release Date: 10/31/2019
Next Release Date: 11/29/2019

Referring Pages:

- Average Commercial Price
- U.S. Natural Gas Prices
- Average Commercial Price

NATURAL GAS COSTS - SEPTEMBER 2018
TO AUGUST 2019 => \$7.211 / 1000 SCF

APPENDIX F

RMR Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Fred Cruz – Permit Services
From: Will Worthley – Technical Services
Date: November 18, 2019
Facility Name: Foster Farms, Santa Fe Ranch
Location: 8330 East Avenue, Turlock, CA
Application No: N-5576-4-1
Project No: N-1193108

1. Summary:

1.1 RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
4-1	4.69	0.03	0.07	2.97E-06	Yes*	No
Project Totals	4.69	0.03	0.07	2.97E-06		
Facility Totals	>1	0.03	0.07	2.97E-06		

*T-BACT is based on a poultry house by poultry house basis. Only the poultry house in the northwestern most location triggers T-BACT.

1.2 Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 4-1

1. No special requirements.

T-BACT is required for the norther western most poultry house because of emissions of Benzene which is a VOC.

2. Project Description:

Technical Services received a request on November 8, 2019 to perform a Risk Management Review (RMR) for the following:

- Unit -4-1: MODIFICATION OF BROILER RANCH CONSISTING OF 609,280 BROILERS; 28 MECHANICALLY VENTILATED POULTRY HOUSES, INCLUDING ELECTRIC FANS/EQUIPMENT TOTALING 280 HP; INCREASE MAXIMUM ALLOWABLE BIRD NUMBERS FROM 609,280 BROILERS TO 737,032 BROILERS

3. RMR Report:

3.1 Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices (Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Toxic emissions for this proposed unit were calculated using emission factors generated from a 2004 source test conducted on a Broiler House in the District.
- Toxic emissions for this proposed unit were calculated using emission factors based on the table, "Mineral Composition of Manures" (page iv in Appendix III) in 1990 A Review of Poultry Manure Management: Directions for the Future, Agriculture and Agri-Food Canada Poultry Section.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2013-2017 from Modesto (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit Id	Process Id	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
4	1	VOC	LB	0.22	1,916
4	1	PM	LB	0.29	2,555
4	1	NH3*	LB	0.21	1,827

*Ammonia emissions were calculated by the processing engineer.

Line Volume Source Parameters				
Unit Id	Unit Description	Building Height (m)	Plume Width (m)	Closest Receptor (m)
1	Chicken Broiler House Fans*	3.05	3.05	25

*There were 28 houses with 2 volume sources on each house.

4. Conclusion:

4.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. However, the cancer risk for one or more units in this project is greater than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary