San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 14 2013

Mr. Michael Kummer
Hilmar Cheese Company
P.O. Box 910
Hilmar, CA 95324

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1275
Project # N-1131453

Dear Mr. Kummer:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant proposes the addition of an anaerobic digester, replacement of a sulfur scrubber, and replacement of a digester gas-fired flare.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

cc: Mike Tollstrup, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

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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)
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

Newspaper notice for publication in Modesto Bee and for posting on valleyair.org

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NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of Hilmar Cheese Company at 9001 N Lander Ave in Hilmar, California. The applicant proposes the addition of an anaerobic digester, replacement of a sulfur scrubber, and replacement of a digester gas-fired flare.

The District's analysis of the legal and factual basis for this proposed action, project #N-1131453, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. There are no emission increases associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact the District at (559) 230-6000. Written comments on the proposed initial permit must be submitted by June 17, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

New Digester and Scrubber Served by Digester Gas-fired Flare

Facility Name:	Hilmar Cheese Company	Date:	May 5, 2013
Mailing Address:	P.O. Box 910 Hilmar, CA 95324	Engineer:	Stanley Tom
		Lead Engineer:	Joven Refuerzo
Contact Person:	Michael Kummer		
Telephone:	(209) 656-1171		
E-Mail:	mkummer@hilmarcheese.com		
Application No:	N-1275-23-8		
Project No:	N-1131453		
Deemed Complete:	May 2, 2013		

I. Proposal

Hilmar Cheese Company has requested an Authority to Construct (ATC) permit to modify the existing enclosed flare serving the wastewater treatment anaerobic digester operation. A replacement flare was installed as part of project N-1121076 but the flare could not meet the permitted CO emission limit of 0.154 lb/MMBtu during the initial source test. The facility has proposed to increase the flare CO emission limit to 0.30 lb/MMBtu in this project.

As the replacement flare could not meet the permitted CO emission limit listed in ATC N-1275-23-7, this ATC cannot be implemented. The ATC issued in this project will cancel and replace ATC N-1275-23-7. The following condition will be listed on the permit to ensure compliance:

- This Authority to Construct (ATC) cancels and supersedes ATC N-1275-23-7. [District Rule 2201]

As ATC N-1275-23-7 will be canceled and replaced by the ATC issued in this project, all of the proposals in project N-1121076 for ATC N-1275-23-7 will be re-proposed in this project. Current PTO N-1275-23-6 will be the base document for this project.

Hilmar Cheese Company has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Hilmar Cheese Company must apply to adrninistratively amend their Title V permit.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emissions 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 4301 Fuel Burning Equipment (12/17/92)
Rule 4311 Flares (6/18/09)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

II. Project Location

The facility is located at 9001 N Lander Ave in Hilmar, CA. The equipment 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.

III. Process Description

Hilmar Cheese Company produces cheese products for industrial and commercial sale. The wastewater from the cheese manufacturing operation is collected and transferred to an anaerobic digester, which generates a waste gas stream (commonly referred to as "biogas" or "digester gas") of which the primary constituents are methane (CH_4), carbon dioxide (CO_2), hydrogen sulfide (H_2S) as well as small amounts of non-methane organic compounds (NMOC). The waste gas from the digester is vented to a wet scrubber for H_2S control and then to an enclosed flare to incinerate the CH_4 present in the waste gas stream prior to discharge to the atmosphere.

The digester reactors are sealed units with gas directed to the scrubber. Tank covers with gas collection fans will be included in this project and the fans will exhaust into the supply air for the aerobic sequencing batch reactors. Off-gas control is being introduced to control potential odors from the reactor effluent aeration tanks.

The facility currently employs tanker trucks to transport waste organic material to municipal treatment plants for processing. On-site processing of this waste material will decrease the current diesel emissions from this transport and decrease the natural gas use by the boiler.

V. Equipment Listing

Pre-Project Equipment Description

N-1275-23-5: 2.5 MILLION GALLON PER DAY CHEESE WASTEWATER ANAEROBIC DIGESTER SERVED BY CEILCOTE SPT 14-84 WET SCRUBBER SYSTEM AND VAREC MODEL 244E ENCLOSED FLARE

Proposed Modification

N-1275-23-8: MODIFICATION OF 2.5 MILLION GALLON PER DAY CHEESE WASTEWATER ANAEROBIC DIGESTER SERVED BY CEILCOTE SPT 14-84 WET SCRUBBER SYSTEM AND VAREC MODEL 244E ENCLOSED FLARE: ADD A SECOND DIGESTER UNIT, REPLACE THE H2S SCRUBBER WITH TWO PACKED TOWER WET SCRUBBERS, LOWER THE H2S CONCENTRATION AT THE SCRUBBER OUTLET FROM 26 PPMV TO 14 PPMV AND REPLACE EXISTING VAREC MODEL 244E ENCLOSED FLARE WITH A 625 CFM VAREC MODEL 244E ENCLOSED FLARE

Post-Project Equipment Description

N-1275-23-8: 2.5 MILLION GALLON PER DAY CHEESE WASTEWATER SYSTEM WITH TWO ANAEROBIC DIGESTERS SERVED BY TWO CEILCOTE SPT-18-144 WET SCRUBBERS AND 625 CFM VAREC MODEL 244E ENCLOSED FLARE

Existing Anaerobic Digestion Process			
Unit Name	**# of Pumps**	**HP per Unit**	**HP**
EGSB transfer pump	2	60	120
EGSB recirculation pump	1	40	40
Mix tank pumps	4		2.67
Biogas compressor	1	50	50
Total			212.67

New Anaerobic Digestion Process			
Unit Name	**# of Pumps**	**HP per Unit**	**HP**
MARS transfer pump	1	60	60
MARS recirculation pump	2	60	120
MARS biogas blower	1	20	20
MARS pre-aeration off-gas	1	20	20
EGSB pre-aeration off-gas	1	20	20
EGSB pre-aeration recirculation pump	1	50	50
MARS effluent pump	1	50	50
Biogas compressor	1	50	50
Total			390

VI. Emission Control Technology Evaluation

Anaerobic Digester

Inside the digester under anaerobic conditions, biological organisms digest organic wastes in the wastewater from the cheese manufacturing process. This process generates waste gas, which primarily consists of methane (CH_4), carbon dioxide (CO_2), and hydrogen sulfide (H_2S). Per the applicant, no non-methane organic compounds (NMOC) were detected in the waste gas stream.

A wet scrubber is used to remove hydrogen sulfide (H_2S) from the digester gas stream prior to incineration in an enclosed flare. The increased biogas generation rate will require modifications of the sulfur scrubber to accommodate the increased gas flow. The existing scrubber will be replaced with two larger capacity vertical packed tower counter current wet chemical scrubbers. The two new scrubbers will be installed in parallel and will operated one at a time (one in service, the other on standby). Due to the low concentrations of H_2S present in the digester gas, it is not practical to establish the scrubber's maximum H_2S removal efficiency. Instead, the applicant is proposing to limit the H_2S concentration influent to the flare to 14 ppmv. The proposed H2S concentration limit should be achievable utilizing one of the two scrubbers.

Flare

The applicant is proposing to combust the CH_4 present in the digester gas in an enclosed flare. The flare is a commercially available unit that is designed specifically for this application. Digester gas combustion generates NO_x, SO_x, PM_{10}, CO and VOC emissions.

VII. General Calculations

A. Assumptions

- Operation schedule = 24 hr/day and 365 days/year (per applicant)
- Biogas F-factor = 8,738 dscf/MMBtu (per applicant)
- Biogas higher heating value = 780 Btu/scf (per gas analysis)
- Biogas percent methane = 77% (per gas analysis)
- Daily pre-project maximum flare gas flowrate = 313 scf/min x 60 min/day x 24 hours/day = 450,720 scf/day (per project N-1063515)
- Daily post-project maximum flare gas flowrate = 542 scf/min x 60 min/day x 24 hours/day = 780,480 scf/day (to pass Ambient Air Quality Analysis)
- Annual pre-project maximum flare gas flowrate = 450,720 scf/day x 365 days/year = 164,512,800 scf/year
- Annual post-project maximum flare gas flowrate = 780,480 scf/day x 365 days/year = 284,875,200 scf/year
- Pre-project scrubber outlet biogas H2S concentration = 26 ppmv (per applicant)
- Post-project scrubber outlet biogas H2S concentration = 14 ppmv (per applicant)

B. Emission Factors

The flare will only be fired on biogas fuel at all times.

Pre-project Emission Factors

Pre-Project Flare Emission Factors Biogas Fuel		
Pollutant	lb/MMBtu	Source
NO_X	0.06	Current PTO
SO_X	0.0056	Mass balance equation below based on 26 ppmv H_2S in scrubber outlet
PM_{10}	0.02	Current PTO
CO	0.154	Current PTO
VOC	0.002	Current PTO

$$SOx = \frac{\left(18{,}780\frac{ft^3-fuel}{hr}\right)\left(\frac{26\,ft^3-H_2S}{10^6\,ft^3-fuel}\right)\left(34\frac{lb-H_2S}{lb-mol}\right)}{\left(379.5\frac{ft^3-H_2S}{lb-mol}\right)\left(\frac{34\,lb-H_2S}{32\,lb-S}\right)\left(\frac{32\,lb-S}{64\,lb-SO_2}\right)}$$

SOx = 0.08 lb/hr

SOx = 0.08 lb/hr ÷ (18,780 scf/hr x 780 Btu/scf) x 1E6/MM = 0.0056 lb/MMBtu

Post-project Emission Factors

Post-Project Flare Emission Factors Biogas Fuel		
Pollutant	lb/MMBtu	Source
NO_X	0.06	Current PTO
SO_X	0.003	Mass balance equation below based 14 ppmv H_2S in scrubber outlet
PM_{10}	0.02	Current PTO
CO	0.30	Applicant Proposal
VOC	0.002	Current PTO

$$SOx = \frac{\left(32{,}520\frac{ft^3-fuel}{hr}\right)\left(\frac{14\,ft^3-H_2S}{10^6\,ft^3-fuel}\right)\left(34\frac{lb-H_2S}{lb-mol}\right)}{\left(379.5\frac{ft^3-H_2S}{lb-mol}\right)\left(\frac{34\,lb-H_2S}{32\,lb-S}\right)\left(\frac{32\,lb-S}{64\,lb-SO_2}\right)}$$

SOx = 0.077 lb/hr

SOx = 0.077 lb/hr ÷ (32,520 scf/hr x 780 Btu/scf) x 1E6/MM = 0.003 lb/MMBtu

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The PE1 for each pollutant is calculated with the following equation:

- PE1 = EF (lb/MMBtu) × Heat Input (MMBtu/day or MMBtu/year) × Heating Value (Btu/scf)

Daily Pre-Project Emissions – Flare (Biogas Fuel)												
Pollutant	Emission Factors			Heat input						PE1 Total	
NO_X	0.06	(lb/MMBtu)	x	450,720	(scf/day)	x	780	(Btu/scf)	=	21.1	(lb/day)
SO_X	0.0056	(lb/MMBtu)	x	450,720	(scf/day)	x	780	(Btu/scf)	=	2.0	(lb/day)
PM_{10}	0.02	(lb/MMBtu)	x	450,720	(scf/day)	x	780	(Btu/scf)	=	7.0	(lb/day)
CO	0.154	(lb/MMBtu)	x	450,720	(scf/day)	x	780	(Btu/scf)	=	54.1	(lb/day)
VOC	0.002	(lb/MMBtu)	x	450,720	(scf/day)	x	780	(Btu/scf)	=	0.7	(lb/day)

Annual Pre-Project Emissions – Flare (Biogas Fuel)											
Pollutant	Emission Factors			Heat input						PE1 Total	
NO_X	0.06	(lb/MMBtu)	x	164,512,800	(scf/year)	x	780	(Btu/scf)	=	7,699	(lb/year)
SO_X	0.0056	(lb/MMBtu)	x	164,512,800	(scf/year)	x	780	(Btu/scf)	=	719	(lb/year)
PM_{10}	0.02	(lb/MMBtu)	x	164,512,800	(scf/year)	x	780	(Btu/scf)	=	2,566	(lb/year)
CO	0.154	(lb/MMBtu)	x	164,512,800	(scf/year)	x	780	(Btu/scf)	=	19,761	(lb/year)
VOC	0.002	(lb/MMBtu)	x	164,512,800	(scf/year)	x	780	(Btu/scf)	=	257	(lb/year)

2. Post Project Potential to Emit (PE2)

The PE2 for each pollutant is calculated with the following equation:

- PE2 = EF (lb/MMBtu) × Heat Input (MMBtu/day or MMBtu/year) × Heating Value (Btu/scf)

Daily Post-Project Emissions – Flare (Biogas Fuel)											
Pollutant	Emission Factors			Heat input						PE2 Total	
NO_X	0.06	(lb/MMBtu)	x	780,480	(scf/day)	x	780	(Btu/scf)	=	36.5	(lb/day)
SO_X	0.003	(lb/MMBtu)	x	780,480	(scf/day)	x	780	(Btu/scf)	=	1.8	(lb/day)
PM_{10}	0.02	(lb/MMBtu)	x	780,480	(scf/day)	x	780	(Btu/scf)	=	12.2	(lb/day)
CO	0.30	(lb/MMBtu)	x	780,480	(scf/day)	x	780	(Btu/scf)	=	182.6	(lb/day)
VOC	0.002	(lb/MMBtu)	x	780,480	(scf/day)	x	780	(Btu/scf)	=	1.2	(lb/day)

Annual Post-Project Emissions – Flare (Biogas Fuel)												
Pollutant	Emission Factors			Heat input						PE2 Total	
NO_X	0.06	(lb/MMBtu)	x	284,875,200	(scf/year)	x	780	(Btu/scf)	=	13,332	(lb/year)
SO_X	0.003	(lb/MMBtu)	x	284,875,200	(scf/year)	x	780	(Btu/scf)	=	667	(lb/year)
PM_{10}	0.02	(lb/MMBtu)	x	284,875,200	(scf/year)	x	780	(Btu/scf)	=	4,444	(lb/year)
CO	0.30	(lb/MMBtu)	x	284,875,200	(scf/year)	x	780	(Btu/scf)	=	66,661	(lb/year)
VOC	0.002	(lb/MMBtu)	x	284,875,200	(scf/year)	x	780	(Btu/scf)	=	444	(lb/year)

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

Pursuant to District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
N-1275-2-8		621		8,140	2,628
N-1275-4-9		621		8,140	913
N-1275-5-6		0		0	0
N-1275-6-3		0		0	0
N-1275-7-4		0		0	0
N-1275-9-7		627		8,140	2,639
N-1275-12-4		511		13,615	730
N-1275-14-2		0		0	0
N-1275-15-2		0		0	0
N-1275-16-3		0		0	0
N-1275-17-3	34,996	424	29,200	13,701	819
N-1275-18-4		840		10,877	1,168
N-1275-22-3		1,241		17,666	2,190
N-1275-23-6		719		19,761	257
N-1275-24-1		0		0	0
N-1275-25-2		0		0	0
N-1275-26-1		0		0	0
N-1275-28-1		167		17,608	323
N-1275-30-1		2,463		16,513	1,887
N-1275-35-2		0		0	0
N-1275-36-0		0		122	10
Pre-Project SSPE (SSPE1)	34,996	8,234	29,200	134,283	13,564

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

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
N-1275-2-8		621		8,140	2,628
N-1275-4-9		621		8,140	913
N-1275-5-6		0		0	0
N-1275-6-3		0		0	0
N-1275-7-4		0		0	0
N-1275-9-7		627		8,140	2,639
N-1275-12-4		511		13,615	730
N-1275-14-2		0		0	0
N-1275-15-2		0		0	0
N-1275-16-3		0		0	0
N-1275-17-3	34,996	424	29,200	13,701	819
N-1275-18-4		840		10,877	1,168
N-1275-22-3		1,241		17,666	2,190
N-1275-23-8		667		66,661	444
N-1275-24-1		0		0	0
N-1275-25-2		0		0	0
N-1275-26-1		0		0	0
N-1275-28-1		167		17,608	323
N-1275-30-1		2,463		16,513	1,887
N-1275-35-2		0		0	0
N-1275-36-0		0		122	10
Post-Project SSPE (SSPE2)	34,996	8,182	29,200	181,183	13,751

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

Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post-Project SSPE (SSPE2)	34,996	8,182	29,200	181,183	13,751
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	No

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)(i). Therefore, the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase	17.5	6.8	4.1	67.1	14.6	14.6	130,221
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	Y

GHG Calculations

The following table summarizes the external combustion equipment at the facility.

Permit	Equipment	Rating
N-1275-2-8	Boiler	25.1 MMBtu/hr
N-1275-4-9	Boiler	25.1 MMBtu/hr
N-1275-9-7	Boiler	25.1 MMBtu/hr
N-1275-12-4	Spray Drier	20.7 MMBtu/hr
N-1275-17-3	Process Heater	17.0 MMBtu/hr
N-1275-18-4	Boiler	33.6 MMBtu/hr
N-1275-22-3	Boiler	50.4 MMBtu/hr
N-1275-28-1	Spray Drier	6.7 MMBtu/hr
N-1275-30-1	Boiler	50.4 MMBtu/hr
Total		254.1 MMBtu/hr

Basis and Assumptions

- Emission factors and global warming potentials (GWP) are taken from EPA 40 CFR Part 98, Subpart A, Tables C-1 and C-2:

Natural Gas
CO2 53.02 kg/MMBtu (116.89 lb/MMBtu)
CH4 1.0×10^{-3} kg/MMBtu (0.0022 lb/MMBtu)
N2O 1.0×10^{-4} kg/MMBtu (0.00022 lb/MMBtu)

GWP for CH4 = 21 lb-CO2(eq) per lb-CH4
GWP for N2O = 310 lb-CO2(eq) per lb-N2O

Calculations

CO2 Emissions = 254.1 MMBtu/hr x 116.89 lb/MMBtu x 8,760 hr/year
= 260,187,321.2 lb-CO2(eq)/year
CH4 Emissions = 254.1 MMBtu/hr x 0.0022 lb/MMBtu x 8,760 hr/year x 21 lb-CO2(eq) per lb-CH4
= 102,837.3 lb-CO2(eq)/year
N2O Emissions = 254.1 MMBtu/hr x 0.00022 lb/MMBtu x 8,760 hr/year x 310 lb-CO2(eq) per lb-N2O
= 151,807.5 lb-CO2(eq)/year

Total = 260,187,321.2 + 102,837.3 + 151,807.5 = 260,441,966 lb-CO2(eq)/year
Total = 260,441,966 lb-CO2(eq)/year ÷ 2,000 lb/ton = **130,221 short tons-CO2(eq)/year**

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

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 = Pre-project Potential to Emit 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 = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

NOx

Offset calculations will be required for all of the units within the SLC; therefore, Baseline Emissions will be calculated for all units within the SLC.

Clean Emissions Unit, Located at a Major Source
Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Clean Emissions Unit Determination				
Permit	Description	BACT Guideline	Achieved in Practice	Clean Emissions Unit?
N-1275-2-8	25.1 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 7 ppmv @ 3% O2
N-1275-4-9	25.1 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 7 ppmv @ 3% O2
N-1275-9-7	25.1 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 7 ppmv @ 3% O2
N-1275-12-4	20.7 MMBtu/hr spray drier	1.6.11	Low NOx burner fired on natural gas with LPG as backup fuel	Yes, low NOx burner fired on natural gas
N-1275-17-3	17.0 MMBtu/hr process heater	1.1.1	20 ppmv @ 3% O2	Yes, 9 ppmv @ 3% O2
N-1275-18-4	33.6 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 7 ppmv @ 3% O2
N-1275-22-3	50.4 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 9 ppmv @ 3% O2
N-1275-23-6	313 scfm flare	1.4.4	0.06 lb/MMBtu	Yes, 0.06 lb/MMBtu
N-1275-28-1	6.7 MMBtu/hr spray drier	1.6.15	20 ppmv @ 3% O2 Low NOx burner fired on natural gas with LPG as backup fuel	Yes, ultra low NOx burner fired on natural gas
N-1275-30-1	50.2 MMBtu/hr boiler	1.1.2	9 ppmv @ 3% O2	Yes, 5 ppmv @ 3% O2

Therefore, all units within the SLC at this facility qualify as clean emission units for NOx and $BE_{SLC} = PE1_{SLC}$ for this project.

SOx, PM10, CO, or VOC

As shown in Section VII.C.5 above, the facility is not a Major Source for SOx, PM10, CO, or VOC.

Therefore, BE = 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."

As discussed in Section VII.C.5 above, the facility is not a Major Source for SOx, PM10, or VOC; therefore, the project does not constitute a SB 288 Major Modification for SOx, PM10, or VOC.

As discussed in Section VII.C.5 above, the facility is an existing Major Source for NO_X; however, the project by itself would need to be a significant increase in order to trigger a SB 288 Major Modification. The emissions unit within this project does not have a total potential to emit which is greater than SB 288 Major Modification thresholds (see table below). Therefore, the project cannot be a significant increase and the project does not constitute a SB 288 Major Modification.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification?
NO_x	13,332	50,000	No

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 SOx, PM10, or VOC, this project does not constitute a Federal Major Modification for SOx, PM10, or VOC. Additionally, since the facility is not a major source for PM_{10} (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

NOx

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
NO_X	0

The Net Emissions Increases (NEI) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission increases are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

If the proposed modification results in an increase in design capacity or potential to emit, or impacts the ability of the emission unit to operate at a higher utilization rate, then the emission increase is calculated as follows:

Net Emission Increase (NEI) = PAE – BAE

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

Projected Actual Emissions

For the flare in this project, the projected actual emissions are assumed to be equal to the post-project potential to emit (PE2).

Flare NOx Projected Actual Emissions (PAE)		
Permit Unit	NOx Emissions (lb/year)	NOx Emissions (ton/year)
N-1275-23-8 (Flare)	13,332	6.7

Baseline Actual Emissions

The actual emission values were provided by the applicant and/or taken from the facility emission inventory submittals.

- BAE (Flare) = Fuel Use (MMscf/year) × Emission Factor (lb/MMBtu) × Heating Value (Btu/scf)

Flare NOx Annual Actual Emissions (BAE)					
Year	Fuel Use (MMscf/year)	Emission Factor (lb/MMBtu)	Heating Value (Btu/scf)	NO_X Emissions (lb/year)	NO_X Emissions (tons/year)
2008	51.72	0.06	780	2,420	1.21
2009	80.87	0.06	780	3,785	1.89
2010	104.62	0.06	780	4,896	2.45
2011	73.63	0.06	780	3,446	1.72
2012	44.65	0.06	780	2,090	1.04
Total				16,637	8.31
Average				3,327	1.66

The applicant has chosen 2009 and 2010 to be the baseline period for the federal major modification calculations.

Flare Baseline Actual Emissions (BAE)			
Permit Unit	Two Year Average	NOx Emissions (lb/year)	NOx Emissions (tons/year)
N-1275-23-8 (Flare)	2009-2010	4,341	2.17

Net Emissions Increase

Net Emissions Increase (NEI) is calculated as follows:

NEI = PAE – BAE

Net Emissions Increase (NEI)			
Pollutant	PAE (lb/year)	BAE (lb/year)	NEI (lb/year)
NOx	13,332	4,341	8,991

The NEI for this project will be greater than the Federal Major Modification threshold for NOx. Therefore, this project does not qualify for a "Less-Than-Significant Emissions Increase" exclusion and is thus determined to be a Federal Major Modification for NOx.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

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

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	6.7	0.3	33.3	2.2	2.2	12,818
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

GHG Calculations

Basis and Assumptions

- Emission factors and global warming potentials (GWP) are taken from EPA 40 CFR Part 98, Subpart A, Tables C-1 and C-2:

  Biogas
  CO2 52.07 kg/MMBtu (114.79 lb/MMBtu)
  CH4 3.2×10^{-3} kg/MMBtu (0.00705 lb/MMBtu)
  N2O 6.3×10^{-4} kg/MMBtu (0.00139 lb/MMBtu)

  GWP for CH4 = 21 lb-CO2(eq) per lb-CH4
  GWP for N2O = 310 lb-CO2(eq) per lb-N2O

Calculations

CO2 Emissions = 284,875,200 scf/year x 780 Btu/scf x 114.79 lb/MMBtu
= 25,506,642.9 lb-CO2(eq)/year
CH4 Emissions = 284,875,200 scf/year x 780 Btu/scf x 0.00705 lb/MMBtu x 21 lb-CO2(eq) per lb-CH4
= 32,897.1 lb-CO2(eq)/year
N2O Emissions = 284,875,200 scf/year x 780 Btu/scf x 0.00139 lb/MMBtu x 310 lb-CO2(eq) per lb-N2O
= 95,747.1 lb-CO2(eq)/year

Total = 25,506,642.9 + 32,897.1 + 95,747.1 = 25,635,278.1 lb-CO2(eq)/year
Total = 25,635,278.1 lb-CO2(eq)/year ÷ 2,000 lb/ton = **12,818 short tons-CO2(eq)/year**

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

10. 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:

NOx and PM10

$QNEC_{SLC} = PE2_{SLC} - PE1_{SLC}$, where:

$QNEC_{SLC}$ = Quarterly Net Emissions Change for units covered by the SLC.
$PE2_{SLC}$ = PE2 for all units covered by the SLC.
$PE1_{SLC}$ = PE1 for all units covered by the SLC.

SOx, CO, and VOC

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	8,749	8,749	0
SO_X	167	180	-13
PM_{10}	7,300	7,300	0
CO	16,665	4,940	11,725
VOC	111	64	47

VIII. Compliance

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 for the following*:

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 a Major Modification.

*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.

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

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

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

AIPE = PE2 – 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)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
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 = PE2 – (PE1 * (EF2 / EF1))

BACT Applicability						
Pollutant	Daily PE2 (lb/day)	Daily PE1 (lb/day)	EF2 (lb/MMBtu)	EF1 (lb/MMBtu)	AIPE (lb/day)	BACT Triggered?
NO_x	36.5	21.1	0.06	0.06	15.4	Yes
SO_x	1.8	2.0	0.003	0.0056	0.7	No
PM_{10}	12.2	7.0	0.02	0.02	5.2	Yes
CO	182.6	54.1	0.30	0.154	128.5	No*
VOC	1.2	0.7	0.002	0.002	0.5	No

* CO emissions with a SSPE2 of less than 200,000 pounds per year.

As demonstrated above, the AIPE is greater than 2.0 lb/day for NOx, PM_{10}, and CO emissions for the flare. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above. Therefore BACT is triggered for NOx and PM_{10}.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.8 above, this project does constitute a Federal Major Modification for NOx. Therefore BACT is triggered for NOx.

2. BACT Discussion

The increase in emissions are associated with the flare. The flare is used to control the digester gas that is generated by the digester system and therefore is an emission control device. In accordance with District definitions, an emission control device is not an emission unit. Per District Rule 2201, only emission units can trigger BACT. Therefore, an emission control device cannot be subject to BACT requirements.

District BACT Guideline 1.4.4 applies to digester gas-fired flares. This BACT guideline was established prior to the District formalizing a position of BACT on control equipment. The guideline was simply a place to list the criteria to be a well controlled flare, but as the flare would not trigger BACT, it is inappropriate to have a BACT guideline for a flare. However, upon review of the BACT Guideline 1.4.4, the proposed flare will operate with NOx emissions of 0.06 lb/MMBtu and smokeless operation with a 5% opacity limit which meets the achieved in practice BACT

requirements for this type of operation. Therefore, the proposed flare is minimizing the generation of collateral pollutants and is equivalent to the best control alternatives available for this type of operation.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	34,996	8,182	29,200	181,183	13,751
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	No	No	No

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_X and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for NO_X is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = $(\Sigma[PE2 - BE]_{SLC} + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Rule 2201

BE = 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 = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As calculated in Section VII.C.6 above, the BE from the units in the SLC are equal to the PE1 since all of the units in the SLC are Clean Emission Units.

Also, there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – $BE]_{SLC}$ + ICCE) x DOR

$PE2_{SLC}$ (NO_X) = 34,996 lb/year
BE_{SLC} (NO_X) = 34,996 lb/year
ICCE = 0 lb/year

Offsets Required (lb/year) = ([34,996 – 34,996] + 0) x DOR
= 0 lb NO_X/year

As demonstrated in the calculation above, the amount of offsets is zero. Therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB288 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.

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in VII.C.8, this project does constitute a Federal Major Modification for NOx; therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

The following table compares pollutant will trigger public noticing requirements. As seen 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	34,996	34,996	20,000 lb/year	No
SO_X	8,234	8,182	54,750 lb/year	No
PM_{10}	29,200	29,200	29,200 lb/year	No
CO	134,283	181,183	200,000 lb/year	No
VOC	13,564	13,751	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. 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	34,996	34,996	0	20,000 lb/year	No
SO_x	8,182	8,234	-52 → 0	20,000 lb/year	No
PM_{10}	29,200	29,200	0	20,000 lb/year	No
CO	181,183	134,283	46,900	20,000 lb/year	Yes
VOC	13,751	13,564	187	20,000 lb/year	No

As demonstrated above, the SSIPE for CO is greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal Major Modification for NOx for the flare and SSIPE greater than 20,000 lb/year for CO. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (USEPA), and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

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.

The flare heat input will be limited in the permit and calculated as follows:

Daily heat input limit = 780,480 scf/day x 780 Btu/scf x MM/10^6 = 608.7 MMBtu/day

- The flare heat input shall not exceed 608.7 MMBtu/day. [District Rules 2201 and 4102]
- Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu; 0.02 lb-PM10/MMBtu; 0.30 lb-CO/MMBtu; or 0.002 lb-VOC/MMBtu. [District Rules 2201 and 4311]
- The sulfur content of the biogas being incinerated by the flare shall not exceed 14 ppmv (as H2S). [District Rules 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is required to demonstrate compliance with Rule 2201.

The following conditions will be placed on the permit to ensure compliance with the assumptions made for Rule 2201. Source testing will be required within 60 days of initial start-up.

- Source testing to measure NOx, CO and VOC emissions from the digester-fired flare shall be conducted within 60 days of initial start-up and at least once every twelve (12) months thereafter. [District Rules 2201 and 4311]

- For source test purposes, NOx emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 2201 and 4311]
- For source test purposes, CO emissions from the flare shall be determined using EPA Method 10 or 10B, ARB Methods 1 through 5 with 10, or ARB Method 100. [District Rule 2201]
- For source test purposes, VOC emissions from the flare shall be determined using EPA Method 25 or 25a. [District Rules 2201 and 4311]
- Stack gas oxygen (O2) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 2201 and 4311]
- Operator shall determine digester gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201]

2. Monitoring

The following conditions will be placed on the permit to ensure compliance with the assumptions made for Rule 2201.

- At least once every 120 days, the hydrogen sulfide concentration of the biogas shall be determined by an independent, certified laboratory using one of the following test methods: EPA Method 11, EPA Method 15, ASTM Method D1072, D3031, D4084, D3246, or D5504. Once three consecutive 120-day laboratory tests show compliance with the permitted hydrogen sulfide concentration limit, the laboratory testing frequency may be reduced to annually. If a subsequent annual laboratory test shows a violation of the permitted hydrogen sulfide concentration limit then 120-day laboratory testing shall resume and continue until three consecutive 120-day laboratory tests show compliance. Once compliance is shown on three consecutive 120-day laboratory tests, the laboratory testing frequency may return to annually. [District Rules 1081 and 2201]
- At least once every two weeks, the facility shall test the biogas to demonstrate compliance with the permitted hydrogen sulfide concentration limit using a properly calibrated gas chromatograph. Once 12 consecutive biweekly tests show compliance, the testing frequency may be reduced to monthly. If a subsequent test shows a violation of the permitted hydrogen sulfide concentration limit then biweekly testing shall resume and continue until 12 consecutive tests show compliance. Once compliance is shown on 12 consecutive biweekly tests, the testing frequency may return to monthly. It is not necessary for the facility to perform gas chromatograph testing during the week in which either the 120-day or annual laboratory testing is performed. [District Rules 1081 and 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition will appear on the permit:

- Permittee shall maintain daily and annual records of quantity of digester gas combusted in the flare, annual test results of higher heating value of digester gas, and daily heat input for the flare. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 4311]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Attachment D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NOx, CO, and SOx. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NOx, CO, or SOx.

The proposed location is in a non-attainment area for the state's PM10 as well as federal and state PM2.5 thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM10 and PM2.5.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or federal major modification to demonstrate to the satisfaction of the District that all other major Stationary Sources owned by such person (or by entity controlling, controlled by, or under common control with such person) in California which are subject to emission limitations are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a federal major modification, therefore this requirement is applicable. Hilmar Cheese Company's compliance certification is included in Attachment B.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a second anaerobic digester reactor, replace the existing sulfur scrubber, and replace the existing flare.

Since the project will provide digester gas to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Attachment C); therefore, the facility must apply to modify their Title V permit with an Administrative Amendment prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

Except for back-up utility units that are exempt under paragraph (b)(2), Section 64.2 states that the requirements of this subpart shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a Part 70 or 71 permit if the unit satisfies all of the following criteria:

1) the unit must have an emission limit for the pollutant;
2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, catalytic oxidizers, etc; and
3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

Pollutant	Major Source Threshold (lb/year)
VOC	20,000
NO_X	20,000
CO	200,000
PM_{10}	140,000
SO_X	140,000

This permit contains emission limits for NO_X, CO, VOC, PM_{10} and SO_X emissions for the flare. However, the flare is not equipped with any add on control devices. Therefore, the CAM requirements of 40 CFR 64 are not applicable to this permit.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to digester operations and biogas-fired flares.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to digester operations and biogas-fired flares.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

The following condition will be added to the permit to ensure compliance:

- Visible emissions from the flare serving the anaerobic digesters shall not equal or exceed Ringelmann 1/4 or 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 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 and the following condition will be added to the permit 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.

There is no increase in fuel use for the flare associated with this project compared to project N-1121076, therefore the health risk assessment performed for project N-1121076 is still valid for this project.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Attachment D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-1275-23-8	0.0 per million	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Attachment D of this report, the emissions increases for this project was determined to be less than significant.

Rule 4201 Particulate Matter Concentration

Section 3.0 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.

Particulate matter calculations were performed for each piece of equipment by the following equation:

F-Factor for digester gas: 8,738 dscf/MMBtu
PM_{10} Emission Factor: 0.02 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%

$$GL = \left(\frac{0.02\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{8{,}738\ ft^3}{MMBtu} \right)$$

$$GL = 0.016\ grain/dscf < 0.1\ grain/dscf$$

Since the particulate matter concentration is ≤ 0.1 grains per dscf, compliance with Rule 4201 is expected.

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

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

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter. As shown below, each unit's maximum hourly emission rates are below the Rule 4301 limits.

District Rule 4301 Limits			
Unit	**NO_2**	**Total PM**	**SO_2**
N-1275-23-8 (Digester Gas)	1.52	0.51	0.08
Rule 4301 Limit	**140 lb/hr**	**10 lb/hr**	**200 lb/hr**

As shown above, compliance with this rule is expected.

Rule 4311 Flares

Rule 4311 limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx), and sulfur oxides (SOx) from the operation of flares.

Section 5.1 states flares permitted to operate only during an emergency are not subject to the requirements of Section 5.6 and 5.7. The flare in this project is not an emergency flare; therefore, Sections 5.6 and 5.7 are applicable.

Section 5.2 requires that the flame be present at all times when combustible gases are vented through the flare.

The following condition will be listed on the permit to ensure compliance:

- A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]

Section 5.3 requires that the flare outlet be equipped with an automatic ignition system, or operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares.

The following condition will be listed on the permit to ensure compliance:

- Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311]

Section 5.4 requires that except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated.

The following condition will be listed on the permit to ensure compliance:

- Flare shall be equipped with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device capable of continuously detecting at least one pilot flame or the flare flame is present. The flame detection device shall be kept operational at all times except during flare maintenance when the flare is isolated from gas flow. During essential planned power outages when the flare is operating, the pilot monitor is allowed to be non-functional if the flare flame is clearly visible to onsite operators. All pilot monitor downtime shall be reported annually pursuant to Rule 4311, Section 6.2.3.6. [District Rule 4311]

Section 5.5 requires flares that use flow-sensitive automatic ignition systems and which do not use a continuous pilot flame to use purge gas for purging.

The following condition will be listed on the permit to ensure compliance:

- If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311]

Section 5.6 states that open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. The requirements of this section shall not apply to Coanda effect flares. The flare in this project is an enclosed flare; therefore, Section 5.6 is not applicable.

Section 5.7 states that ground-level enclosed flares meet the defined emission standards. The flare involved with this project is a ground-level enclosed flare.

Type of Flare and Heat Release Rate in MMBtu/hr	VOC (lb/MMBtu)	NOx (lb/MMBtu)
Without Steam-assist		
10-100 MMBtu	0.0027	0.1330

The following condition will be listed on the permit to ensure compliance:

- Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu; 0.02 lb-PM10/MMBtu; 0.30 lb-CO/MMBtu; or 0.002 lb-VOC/MMBtu. [District Rules 2201 and 4311]

Section 5.8 states that effective on and after July 1, 2011, flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. The facility submitted an FMP on June 29, 2010 and a revised FMP on June 29, 2011.

The following condition will be listed on the permit to ensure compliance:

- Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311]

Section 5.9 sites Petroleum Refinery SO2 Performance Targets. The flare does not serve a petroleum refinery; therefore, Section 5.9 is not applicable.

Section 5.10 states the operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare.

The following condition will be listed on the permit to ensure compliance:

- The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]

Section 5.11 states that the operator of a petroleum refinery or a flare with a flaring capacity equal to or greater than 50 MMBtu/hr shall monitor the flare pursuant to Sections

6.6, 6.7, 6.8, 6.9, and 6.10. The flare is not part of petroleum refinery; therefore, Section 5.11 is not applicable.

Section 6.1 states that the records listed in Sections 6.1.1 through 6.1.7 shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request.

The following condition will be placed on the permit to ensure compliance:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4311]

Section 6.1.1 requires the operator of flares that are subject to Section 5.6 to make available to the APCO upon request the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5).

The flare is not subject to Section 5.6; therefore, Section 6.1.1 is not applicable.

Section 6.1.2 requires the operator of flares that are subject to Section 5.7 to make available to the APCO upon request a copy of the source testing result conducted pursuant to Section 6.4.2.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.3 requires the operator of flares that are used during an emergency, to maintain a record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation.

The following condition will be placed on the permit to ensure compliance:

- Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311]

Section 6.1.4 applies only to operators claiming an exemption pursuant to Section 4.3. This project is not claiming an exemption pursuant to Section 4.3; therefore, Section 6.1.4 is not applicable.

Sections 6.1.5 applies only to flares operated at petroleum refineries or those with a flaring capacity greater than or equal to 5 MMBtu/hr subject to a flare minimization plan.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.6 applies to flares subject to flare minimization plans pursuant to Section 5.8.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.7 applies to flares subject to flare minimization requirements pursuant to Section 5.8 and to flares operated at petroleum refineries or those with a flaring capacity equal to or greater than 50 MMBtu/hr.

The following condition will be listed on the permit to ensure compliance:

- The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]

Section 6.2 applies to flares subject to a flare minimization plan.

Section 6.2.1 states the operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311]

Section 6.2.2 states the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following:

6.2.2.1 The results of an investigation to determine the primary cause and contributing factors of the flaring event;
6.2.2.2 Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented;
6.2.2.3 If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and
6.2.2.4 The date, time, and duration of the flaring event.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311]

Section 6.2.3 states the operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following:

6.2.3.1 The total volumetric flow of vent gas in standard cubic feet for each day.
6.2.3.2 Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6.
6.2.3.3 If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month.
6.2.3.4 If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month.
6.2.3.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow.
6.2.3.6 Flare monitoring system downtime periods, including dates and times.
6.2.3.7 For each day and for each month provide calculated sulfur dioxide emissions.

6.2.3.8 A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5.

The flare is not subject to Sections 6.6, 6.7, 6.8, 6.9, and 6.10.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; if the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311]

Section 6.3 lists test methods to be used to demonstrate compliance with this rule. Alternate equivalent test methods may be used provided the test methods have been approved by the APCO and EPA.

Section 6.3.1 states for VOC, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". The VOC concentration in ppmv shall be converted to pounds per million Btu (lb/MMBtu) by using the following equation:

VOC in lb/MMBtu = [(ppmvd dry) x (F, dscf/MMBtu)] / [(1.135 x 10^6) x (20.9 – %O2)]

Where: F = As determined by EPA Method 19

Section 6.3.2 states NOx emissions in pounds per million BTU shall be determined by using EPA Method 19.

Section 6.3.3 states NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100.

The following conditions will be listed on the permit to ensure compliance:

- For source test purposes, NOx emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 2201 and 4311]
- For source test purposes, VOC emissions from the flare shall be determined using EPA Method 25 or 25a. [District Rules 2201 and 4311]
- Stack gas oxygen (O2) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 2201 and 4311]

Section 6.3.4 applies to flares subject to vent gas composition monitoring requirements pursuant to Section 6.6. The flare in this project is not subject to Section 6.6.

Section 6.3.5 applies to flares subject to vent gas flow verification requirements pursuant to Section 6.2.3.8. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA:

6.3.5.1 EPA Methods 1 and 2;
6.3.5.2 A verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10.
6.3.5.3 Tracer gas dilution or velocity.
6.3.5.4 Other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter.

The following condition will be listed on the permit to ensure compliance:

- For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311]

Section 6.4 applies only to flares subject to Section 5.6 and 5.7.

Section 6.4.1 states upon request, the operator of flares that are subject to Section 5.6 shall make available, to the APCO, the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5). The flare is not subject to Section 5.6.

Section 6.4.2 states the operator of ground-level enclosed flares shall conduct source testing at least once every 12 months to demonstrate compliance with Section 5.7. The operator shall submit a copy of the testing protocol to the APCO at least 30 days in advance of the scheduled testing. The operator shall submit the source test results not later than 45 days after completion of the source testing.

The following conditions will be listed on the permit to ensure compliance:

- Source testing to measure NOx, CO and VOC emissions from the digester-fired flare shall be conducted within 60 days of initial start-up and at least once every twelve (12) months thereafter. [District Rules 2201 and 4311]
- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rules 1081 and 4311]

- The results of each source test shall be submitted to the District within 45 days thereafter. [District Rules 1081 and 4311]

Section 6.5 applies to flares operated at a petroleum refinery or any flare that has a flaring capacity of greater than or equal to 5.0 MMBtu/hr subject to a flare minimization plan.

Section 6.5.1 states by July 1, 2010, the operator of a petroleum refinery flare or any flare that has a flaring capacity of greater than or equal to 5.0 MMBtu per hour shall submit a flare minimization plan (FMP) to the APCO for approval. The FMP shall include, but not be limited to:

6.5.1.1 A description and technical specifications for each flare and associated knock-out pots, surge drums, water seals and flare gas recovery systems.
6.5.1.2 Detailed process flow diagrams of all upstream equipment and process units venting to each flare, identifying the type and location of all control equipment.
6.5.1.3 A description of equipment, processes, or procedures the operator plans to install or implement to eliminate or minimize flaring and planned date of installation or implementation.
6.5.1.4 An evaluation of prevention measures to reduce flaring that has occurred or may be expected to occur during planned major maintenance activities, including startup and shutdown.
6.5.1.5 An evaluation of preventative measures to reduce flaring that may be expected to occur due to issues of gas quantity and quality. The evaluation shall include an audit of the vent gas recovery capacity of each flare system, the storage capacity available for excess vent gases, and the scrubbing capacity available for vent gases including any limitations associated with scrubbing vent gases for use as a fuel; and shall determine the feasibility of reducing flaring though the recovery, treatment and use of the gas or other means.
6.5.1.6 An evaluation of preventative measures to reduce flaring caused by the recurrent failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. The evaluation shall determine the adequacy of existing maintenance schedules and protocols for such equipment. For purposes of this section, a failure is recurrent if it occurs more than twice during any five year period as a result of the same cause as identified in accordance with Section 6.2.2.
6.5.1.7 Any other information requested by the APCO as necessary for determination of compliance with applicable provisions of this rule.

The facility submitted a FMP on June 29, 2010 and submitted a revised FMP on June 29, 2011. Therefore, the requirements of this section have been satisfied.

Section 6.5.2 states every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan.

The following condition will be listed on the permit to ensure compliance:

- Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan. [District Rule 4311]

Section 6.5.3 states an updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if:

6.5.3.1 The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and
6.5.3.2 The ATC is deemed complete after June 18, 2009, and
6.5.3.3 The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions.

The following condition will be listed on the permit to ensure compliance:

- An updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: (1) The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and (2) The ATC is deemed complete after June 18, 2009, and (3) The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. [District Rule 4311]

Section 6.5.4 states when submitting the initial FMP, or updated FMP, the operator shall designate as confidential any information claimed to be exempt from public disclosure under the California Public Records Act, Government Code Section 6250 et seq. If a document is submitted that contains information designated confidential, the operator shall provide a justification for this designation and shall submit a separate copy of the document with the information designated confidential redacted.

The facility has not requested confidentiality for any submitted FMPs.

Sections 6.6 through 6.9 applies to flares operated at a petroleum refinery or any flare that has a flaring capacity of greater than or equal to 50 MMBtu/hr. The flare does not fall under either category; therefore, Sections 6.6 through 6.9 are not applicable.

Section 6.10 applies to flares operated at a petroleum refinery. The flare is not operated at a petroleum refinery; therefore, Section 6.10 is not applicable.

Therefore, compliance with the requirements of this section is expected.

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO_2) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO_2 = (n x R x T) ÷ P
n = moles SO_2
T (standard temperature) = 60 °F or 520 °R
R (universal gas constant) = $\frac{10.73 \text{psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot °\text{R}}$

F-Factor for Digester gas: 8,738 dscf/MMBtu

$$\frac{0.003\,lb - SOx}{MMBtu} \times \frac{MMBtu}{8{,}738\,dscf} \times \frac{1\,lb \cdot mol}{64\,lb} \times \frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot °R} \times \frac{520°R}{14.7\,psi} \times \frac{1{,}000{,}000 \cdot parts}{million} = 2.0\frac{parts}{million}$$

Since the SOx concentration is ≤ 2,000 ppmv, the flare is expected to comply with Rule 4801.

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.

The County of Merced (County) is the public agency having principal responsibility for approving the project. As such, the County served as the Lead Agency (CCR §15367). In approving the project, the Lead Agency prepared and adopted a Mitigated Negative Declaration. The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment.

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), (CCR §15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. 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)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct N-1275-23-8 subject to the permit conditions on the attached draft Authority to Construct in Attachment E.

X. Billing Information

The flare maximum heat input rating is based up on the following calculation:

625 scf/min x 60 min/hr x 780 Btu/scf x MM/10^6 = 29.25 MMBtu/hr

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1275-23-8	3020-02-H	29.25 MMBtu/hr flare	$1030.00

Attachments

A: Current Permit to Operate
B: Compliance Certification
C: Certificate of Conformity
D: Health Risk Assessment and Ambient Air Quality Analysis
E: Draft Authority to Construct Permit

Attachment A

Current Permit to Operate

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: N-1275-23-6 **EXPIRATION DATE:** 09/30/2017

EQUIPMENT DESCRIPTION:
2.5 MILLION GALLON PER DAY CHEESE WASTEWATER ANAEROBIC DIGESTER SERVED BY CEILCOTE SPT 14-84 WET SCRUBBER SYSTEM AND VAREC MODEL 244E ENCLOSED FLARE

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Visible emissions from the flare serving the anaerobic digesters shall not equal or exceed Ringelmann 1/4 or 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
5. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
6. The anaerobic digester system and its associated piping shall be maintained leak free. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This flare shall only be fired on biogas collected from the anaerobic digester system. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The facility-wide NOx emissions shall not exceed 34,996 pounds during any rolling 12-month period. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The facility-wide PM10 emissions shall not exceed 29,200 pounds during any rolling 12-month period. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu (as NO2); 0.02 lb-PM10/MMBtu; 0.154 lb-CO/MMBtu; or 0.002 lb-VOC/MMBtu (as methane). [District Rule 2201] Federally Enforceable Through Title V Permit
11. The sulfur content of the biogas being incinerated by the flare shall not exceed 26 ppmv (as H2S). [District Rule 2201] Federally Enforceable Through Title V Permit
12. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Merced County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
13. Source testing to measure NOx, CO and VOC emissions from the digester-fired flare shall be conducted at least once every 12 months. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
14. The results of each source test shall be submitted to the District within 45 days thereafter. [District Rules 1081 and 4311] Federally Enforceable Through Title V Permit
15. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rules 1081 and 4311] Federally Enforceable Through Title V Permit
17. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 1081] Federally Enforceable Through Title V Permit
18. For source test purposes, NOx emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 1081, 2201 and 4311] Federally Enforceable Through Title V Permit
19. For source test purposes, CO emissions from the flare shall be determined using EPA Method 10 or 10B, ARB Methods 1 through 5 with 10, or ARB Method 100. [District Rule 1081, 2201] Federally Enforceable Through Title V Permit
20. For source test purposes, VOC emissions from the flare shall be determined using EPA Method 25 or 25a. [District Rules 1081, 2201 and 4311] Federally Enforceable Through Title V Permit
21. Stack gas oxygen (O2) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 1081, 2201 and 4311] Federally Enforceable Through Title V Permit
22. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The higher heating value (HHV) of the natural gas shall be determined and recorded at least annually. The testing shall be be conducted by an independent testing laboratory and shall be performed utilizing one of the following test methods: ASTM D 1826-88 D 1945-81 in conjunction with ASTM D 3588-89. [District Rules 1081 and 4351] Federally Enforceable Through Title V Permit
24. Sampling ports for biogas testing shall be provided in accordance with District requirements. [District Rule 1081] Federally Enforceable Through Title V Permit
25. At least once every 120 days, the hydrogen sulfide concentration of the biogas shall be determined by an independent, certified laboratory using one of the following test methods: EPA Method 11, EPA Method 15, ASTM Method D1072, D3031, D4084, D3246, or D5504. Once three consecutive 120-day laboratory tests show compliance with the permitted hydrogen sulfide concentration limit, the laboratory testing frequency may be reduced to annually. If a subsequent annual laboratory test shows a violation of the permitted hydrogen sulfide concentration limit then 120-day laboratory testing shall resume and continue until three consecutive 120-day laboratory tests show compliance. Once compliance is shown on three consecutive 120-day laboratory tests, the laboratory testing frequency may return to annually. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
26. At least once every two weeks, the facility shall test the biogas to demonstrate compliance with the permitted hydrogen sulfide concentration limit using a properly calibrated gas chromatograph. Once 12 consecutive biweekly tests show compliance, the testing frequency may be reduced to monthly. If a subsequent test shows a violation of the permitted hydrogen sulfide concentration limit then biweekly testing shall resume and continue until 12 consecutive tests show compliance. Once compliance is shown on 12 consecutive biweekly tests, the testing frequency may return to monthly. It is not necessary for the facility to perform gas chromatograph testing during the week in which either the 120-day or annual laboratory testing is performed. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
27. The gas chromatograph used for the biweekly testing shall be calibrated according to the manufacturer's recommendations. Records of the gas chromatograph equipment calibration shall be kept and shall be made available for District inspection upon request. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
28. Biogas sampling shall be conducted using the methods and procedures approved by the District. The District shall be notified each time the biogas sampling frequency changes. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

29. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

30. Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit

31. Flare shall be equipped with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device capable of continuously detecting at least one pilot flame or the flare flame is present. The flame detection device shall be kept operational at all times except during flare maintenance when the flare is isolated from gas flow. During essential planned power outages when the flare is operating, the pilot monitor is allowed to be non-functional if the flare flame is clearly visible to onsite operators. All pilot monitor downtime shall be reported annually pursuant to Rule 4311, Section 6.2.3.6. [District Rule 4311] Federally Enforceable Through Title V Permit

32. If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit

33. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311] Federally Enforceable Through Title V Permit

34. The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311] Federally Enforceable Through Title V Permit

35. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Federally Enforceable Through Title V Permit

36. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit

37. The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; if the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit

38. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311] Federally Enforceable Through Title V Permit

39. Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan. [District Rule 4311] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. An updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: (1) The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and (2) The ATC is deemed complete after June 18, 2009, and (3) The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. [District Rule 4311] Federally Enforceable Through Title V Permit

41. The anaerobic digester system and its associated piping shall be inspected for leaks at least annually. Any leak detected on the basis of sight, smell, or sound, shall be recorded and a corrective action shall be taken to eliminate the leak. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Records of leak inspections shall contain at least an identification of a person performing an inspection, date and time of the inspection, leak location, and corrective action taken to eliminate leaks. The records shall be maintained, kept, and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

43. Records of the facility-wide NOx and PM10 emissions, on a rolling 12-month basis shall be kept. The records shall be updated at least monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The permittee shall maintain records of: (1) the name of the sampler, and the date and time of biogas sampling for H2S, (2) the name of the tester, and the date and time of biogas testing for H2S, (3) test results showing the biogas concentration (in ppmv) of H2S. [District Rule 1081] Federally Enforceable Through Title V Permit

45. Permittee shall maintain daily and annual records of quantity of digester gas combusted in the flare, annual test results of higher heating value of digester gas, and daily heat input for the flare. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

46. Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311] Federally Enforceable Through Title V Permit

47. Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311] Federally Enforceable Through Title V Permit

48. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 2201 and 4311] Federally Enforceable Through Title V Permit

Attachment B
Compliance Certification

RECEIVED
JUL 11 2012
Permits Services
SJVAPCD

July 3, 2012

Mr. Stanley Tom
San Joaquin Valley APCD
1990 East Gettysburg Ave.
Fresno, CA 93726-0244

RE: Hilmar Cheese Company: Modification to Permit to Operate No. N-1275-23-5; Certification of Compliance

Dear Mr. Tom,

Pursuant to SJVAPCD (District) Rule 2201 Section 4.15.2, the Hilmar Cheese Company respectfully submits this Compliance Assertion regarding compliance by other owned, operated, or controlled major stationary sources in California.

I hereby certify that the Hilmar Cheese Company does not own, operate or control any other major stationary source in California. This certification shall speak as to the date of its execution.

Should you have any questions, or requests for additional information, please contact Michael Kummer at (209) 656-1171(work) or (209) 678-2923(cell).

Sincerely,

John Jeter
CEO and President

9001 North Lander Ave. • P.O. Box 910 • Hilmar, CA 95324 • (209) 667-6076 • Fax (209) 634-1408

Attachment C
Certificate of Conformity

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: Hilmar Cheese Company, Inc.	FACILITY ID: N – 1275
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: Hilmar Cheese Company, Inc.	
3. Agent to the Owner: Tedd Struckmeyer	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial **all** circles for confirmation):

(TS) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

(TS) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(TS) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(TS) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

6 MAY 2013
Date

Tedd Struckmeyer
Name of Responsible Official (please print)

Vice President, Engineering & Business Development
Title of Responsible Official (please print)

Attachment D

Health Risk Assessment and Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Mark Schonhoff – Permit Services
From:	Trevor Joy, AQS – Technical Services
Date:	July 18, 2012
Facility Name:	Hilmar Cheese
Location:	9001 N Lander Ave in Hilmar
Application #(s):	N-1275-23-7
Project #:	1121076

A. RMR SUMMARY

Categories	Unit 23-7 Flare	Project Totals	Facility Totals
Prioritization Score	0.0	0.0	>1
Acute Hazard Index	0.00	0.00	0.05
Chronic Hazard Index	0.00	0.00	0.06
Maximum Individual Cancer Risk (10^{-6})	0.0	0.0	0.7
T-BACT Required?	No		
Special Permit Conditions?	Yes		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 52

{1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

Flare increase in usage shall not exceed 229 Scf/min.

B. RMR REPORT

I. Project Description

Technical Services received a revised request on May 31, 2012 to perform an Ambient Air Quality Analysis and a Risk Management Review for the proposed modification to unit 23 – the increased yearly flare usage.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Emissions were calculated using the "Digester Gas - External Combustion" spreadsheet. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for the facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined analysis was required and performed. AERMOD was used, with the parameters outlined below and concatenated meteorological data for Modesto 2005 to 2009 to determine the maximum dispersion factor at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameter Unit 23			
Closest Receptor - Business (m)	**100**	**Closest Receptor – Resident (m)**	**381**
Increase in Waste Gas Usage (Scf/min)	**229**	**Hours of Operation**	**8760**
Release Height (m)	**9.9**	**Gas Exit Temperature (K)**	**588**
Stack Inside Diameter (m)	**1.7**	**Gas Exit Velocity (m/s)**	**2.9**

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}; as well as a RMR. The emission rates used for criteria pollutant modeling were

[redacted]	NOx	Sox	CO	PM10	PM2.5
Lbs/hr	0.64	0.0	1.7	0.22	0.22
Lbs/yr	5633	0	14,458	1878	1878

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

Steam Generator	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass
SO_x	Pass[2]	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[3]	Pass[3]
PM2.5	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures. The criteria pollutant 1-hour value passed using TIER I NO_2 NAAQS modeling
[2]The project was compared to the 1-hour SO2 National Ambient Air Quality Standard that became effective on August 23, 2010 using the District's approved procedures.
[3]The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

Note: this project was modified from the originally proposed project, reducing the daily fuel usage to pass the AAQA. Any increase in daily fuel usage will require an AAQA being run to consider 329760 SCF/day fuel usage plus the daily fuel increase.

III. Conclusion

The acute and chronic indices are below 1.0; and the cancer risk is less then 1 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

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. RMR request from the project engineer
B. Prioritization score with toxic emissions summary
C. HEARTS – Facility Summary
D. AAQA spreadsheet

Attachment E

Draft Authority to Construct Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1275-23-8

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY
MAILING ADDRESS: ATTN EHS COORDINATOR
P O BOX 910
HILMAR, CA 95324

LOCATION: 9001 N LANDER AVE
HILMAR, CA 95324

EQUIPMENT DESCRIPTION:
MODIFICATION OF 2.5 MILLION GALLON PER DAY CHEESE WASTEWATER ANAEROBIC DIGESTER SERVED BY CEILCOTE SPT 14-84 WET SCRUBBER SYSTEM AND VAREC MODEL 244E ENCLOSED FLARE: ADD A SECOND DIGESTER UNIT, REPLACE THE H2S SCRUBBER WITH TWO PACKED TOWER WET SCRUBBERS, LOWER THE H2S CONCENTRATION AT THE SCRUBBER OUTLET FROM 26 PPMV TO 14 PPMV AND REPLACE EXISTING VAREC MODEL 244E ENCLOSED FLARE WITH A 625 CFM VAREC MODEL 244E ENCLOSED FLARE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This Authority to Construct (ATC) cancels and supersedes ATC N-1275-23-7. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Visible emissions from the flare serving the anaerobic digesters shall not equal or exceed Ringelmann 1/4 or 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit

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.

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-1275-23-8 : May 7 2013 1:43PM – TOMS : Joint Inspection NOT Required

6. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
7. The anaerobic digester system and its associated piping shall be maintained leak free. [District Rule 2201] Federally Enforceable Through Title V Permit
8. This flare shall only be fired on biogas collected from the anaerobic digester system. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The facility-wide NOx emissions shall not exceed 34,996 pounds during any rolling 12-month period. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The facility-wide PM10 emissions shall not exceed 29,200 pounds during any rolling 12-month period. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The flare heat input shall not exceed 608.7 MMBtu/day. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
12. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu (as NO2); 0.02 lb-PM10/MMBtu; 0.30 lb-CO/MMBtu; or 0.002 lb-VOC/MMBtu (as methane). [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
13. The sulfur content of the biogas being incinerated by the flare shall not exceed 14 ppmv (as H2S). [District Rule 2201] Federally Enforceable Through Title V Permit
14. Source testing to measure NOx, CO and VOC emissions from the digester-fired flare shall be conducted within 60 days of initial start-up and at least once every twelve (12) months thereafter. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
15. For source test purposes, NOx emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
16. For source test purposes, CO emissions from the flare shall be determined using EPA Method 10 or 10B, ARB Methods 1 through 5 with 10, or ARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
17. For source test purposes, VOC emissions from the flare shall be determined using EPA Method 25 or 25a. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
18. Stack gas oxygen (O2) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rules 1081 and 4311] Federally Enforceable Through Title V Permit
20. The results of each source test shall be submitted to the District within 45 days thereafter. [District Rules 1081 and 4311] Federally Enforceable Through Title V Permit
21. Operator shall determine digester gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Sampling ports for biogas testing shall be provided in accordance with District requirements. [District Rule 1081] Federally Enforceable Through Title V Permit
23. At least once every 120 days, the hydrogen sulfide concentration of the biogas shall be determined by an independent, certified laboratory using one of the following test methods: EPA Method 11, EPA Method 15, ASTM Method D1072, D3031, D4084, D3246, or D5504. Once three consecutive 120-day laboratory tests show compliance with the permitted hydrogen sulfide concentration limit, the laboratory testing frequency may be reduced to annually. If a subsequent annual laboratory test shows a violation of the permitted hydrogen sulfide concentration limit then 120-day laboratory testing shall resume and continue until three consecutive 120-day laboratory tests show compliance. Once compliance is shown on three consecutive 120-day laboratory tests, the laboratory testing frequency may return to annually. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

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24. At least once every two weeks, the facility shall test the biogas to demonstrate compliance with the permitted hydrogen sulfide concentration limit using a properly calibrated gas chromatograph. Once 12 consecutive biweekly tests show compliance, the testing frequency may be reduced to monthly. If a subsequent test shows a violation of the permitted hydrogen sulfide concentration limit then biweekly testing shall resume and continue until 12 consecutive tests show compliance. Once compliance is shown on 12 consecutive biweekly tests, the testing frequency may return to monthly. It is not necessary for the facility to perform gas chromatograph testing during the week in which either the 120-day or annual laboratory testing is performed. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

25. The gas chromatograph used for the biweekly testing shall be calibrated according to the manufacturer's recommendations. Records of the gas chromatograph equipment calibration shall be kept and shall be made available for District inspection upon request. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

26. Biogas sampling shall be conducted using the methods and procedures approved by the District. The District shall be notified each time the biogas sampling frequency changes. [District Rule 1081] Federally Enforceable Through Title V Permit

27. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

28. Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit

29. Flare shall be equipped with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device capable of continuously detecting at least one pilot flame or the flare flame is present. The flame detection device shall be kept operational at all times except during flare maintenance when the flare is isolated from gas flow. During essential planned power outages when the flare is operating, the pilot monitor is allowed to be non-functional if the flare flame is clearly visible to onsite operators. All pilot monitor downtime shall be reported annually pursuant to Rule 4311, Section 6.2.3.6. [District Rule 4311] Federally Enforceable Through Title V Permit

30. If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit

31. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311] Federally Enforceable Through Title V Permit

32. The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311] Federally Enforceable Through Title V Permit

33. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Federally Enforceable Through Title V Permit

34. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit

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35. The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; if the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit

36. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311] Federally Enforceable Through Title V Permit

37. Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan. [District Rule 4311] Federally Enforceable Through Title V Permit

38. An updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: (1) The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and (2) The ATC is deemed complete after June 18, 2009, and (3) The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. [District Rule 4311] Federally Enforceable Through Title V Permit

39. The anaerobic digester system and its associated piping shall be inspected for leaks at least annually. Any leak detected on the basis of sight, smell, or sound, shall be recorded and a corrective action shall be taken to eliminate the leak. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Records of leak inspections shall contain at least an identification of a person performing an inspection, date and time of the inspection, leak location, and corrective action taken to eliminate leaks. The records shall be maintained, kept, and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

41. The permittee shall determine and record the annual facility-wide NOx and PM10 emissions, based a rolling 12-month period, using the operational records of each permit unit, and all emission calculations as well as each assumption and each process variable used in the respective calculations. The records shall be updated at least monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

42. The permittee shall maintain records of: (1) the name of the sampler, and the date and time of biogas sampling for H2S, (2) the name of the tester, and the date and time of biogas testing for H2S, (3) test results showing the biogas concentration (in ppmv) of H2S. [District Rule 1081] Federally Enforceable Through Title V Permit

43. Permittee shall maintain daily and annual records of quantity of digester gas combusted in the flare, annual test results of higher heating value of digester gas, and daily heat input for the flare. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

44. Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311] Federally Enforceable Through Title V Permit

45. Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311] Federally Enforceable Through Title V Permit

46. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4311] Federally Enforceable Through Title V Permit