



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



AUG 12 2015

Michael Kummer
Hilmar Cheese Company Inc. - Turlock Site
PO Box 910
Hilmar, CA 95324

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-9141
Project Number: N-1151264

Dear Mr. Kummer:

Enclosed for your review and comment is the District's analysis of Hilmar Cheese Company Inc. - Turlock Site's application for an Authority to Construct for a new milk drying plant, at 3600 W Canal Street in Turlock CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. James Harader of Permit Services at (209) 557-6445.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:JH

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
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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

San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
New Milk Drying Plant

Facility Name: Hilmar Cheese Company	Date: July 23, 2015
Mailing Address: PO Box 910	Engineer: James Harader
Hilmar, CA 95324	Lead Engineer: Nick Peirce
Contact Person: Michael Kummer	
Telephone: (209) 656-1171	
ATC Application #'s: N-9141-1-0, '2-0, '3-0, '4-0, '5-0, '6-0, '7-0, '8-0, '9-0, and '10-0	
ATC Project #: N-1151264	
Deemed Complete: April 28, 2015	

I. PROPOSAL

Hilmar Cheese Company is requesting Authority to Construct (ATC) permits for the installation of a new milk drying plant. The plant will consist of the following equipment:

- ATC N-9141-1-0: Natural Gas-Fired Boiler #1
- ATC N-9141-2-0: Natural Gas-Fired Boiler #2
- ATC N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine
- ATC N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine
- ATC N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse
- ATC N-9141-6-0: Vibro Fluidizer Served by a Baghouse
- ATC N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors
- ATC N-9141-8-0: Vacuum Pump Served by a Dust Collector
- ATC N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector
- ATC N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

II. APPLICABLE RULES

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permit (06/21/01)
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 4202	Particulate Matter – Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4304	Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4320	Boilers, Steam Generators, and Process Heaters – Phase 3 (10/16/08)

Rule 4351 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702 Internal Combustion Engines - Phase 2 (8/18/11)
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

III. PROJECT LOCATION

The new milk plant will be located at 3600 W Canal Street in Turlock, CA. The District has verified that the equipment will not be located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. PROCESS DESCRIPTION

N-9141-1-0: Natural Gas-Fired Boiler #1

The applicant is proposing to install natural gas-fired boiler. The boiler will be used to create steam and hot water, to be used at the dried milk processing plant.

N-9141-2-0: Natural Gas-Fired Boiler #2

The applicant is proposing to install a second natural gas-fired boiler. The boiler will be used to create steam and hot water, to be used at the dried milk processing plant.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The applicant is proposing to install a cogeneration plant powered by a lean-burn natural gas-fired internal combustion engine. The cogeneration system will create steam and power that will be used by the dried milk processing plant. The internal combustion engine will be served by a selective catalytic reduction system and an oxidation catalyst.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The applicant is proposing to install a second cogeneration plant powered by a lean-burn natural gas-fired internal combustion engine. The second cogeneration system will also create steam and power that will be used by the dried milk processing plant. The internal combustion engine will be served by a selective catalytic reduction system and an oxidation catalyst.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The plant will include a natural gas-fired process heater. The process heater will be used to indirectly provide heat to a milk drying chamber. Milk will be dried inside the drying chamber, and will leave the chamber to be further dried and processed in the vibro fluidizer. The milk drying chamber is served by a baghouse. The maximum throughput is 203 tons of dried milk per day.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

In the vibro fluidizer, the moist powder is vibrated on an air distributor plate. The effect of the vibration combined with the upward and forward directed flow of drying air through the perforated plate create ideal processing conditions and powder transport. After the final drying, the powdered milk exits the vibro fluidizer. The vibro fluidizer is served by a baghouse.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The vacuum powder conveyance operation transfers the powdered milk. This system is served by inline filters and a dust collection system.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The vacuum pump further transfers the powdered milk into the surge hopper. This unit is served by a dust collection system.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

Nitrogen is introduced into the surge hopper and forms a nitrogen layer above the powdered milk. The nitrogen layer protects the powdered milk from spoilage. This unit is served by a dust collection system.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

Finally, the powdered milk is packaged. The packaging operation is served by a baghouse.

V. EQUIPMENT LISTING

Equipment Description

- N-9141-1-0: 24.492 MMBTU/HR CLEAVER BROOKS CBEX ELITE BOILER EQUIPPED WITH A CLEAVER BROOKS CBEX ELITE ULTRA-LOW NOX NATURAL GAS-FIRED BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER (BOILER #1)
- N-9141-2-0: 24.492 MMBTU/HR CLEAVER BROOKS CBEX ELITE BOILER EQUIPPED WITH A CLEAVER BROOKS CBEX ELITE ULTRA-LOW NOX NATURAL GAS-FIRED BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER (BOILER #2)

- N-9141-3-0: COGENERATION PLANT #1 CONSISTING OF A 3681 BHP NATURAL GAS FIRED GE JENBACHER J616 GS-F02 LEAN-BURN INTERNAL COMBUSTION ENGINE POWERING AN ELECTRICAL GENERATOR. THE ENGINE IS SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM AND AN OXIDATION CATALYST
- N-9141-4-0: COGENERATION PLANT #2 CONSISTING OF A 3681 BHP NATURAL GAS FIRED GE JENBACHER J616 GS-F02 LEAN-BURN INTERNAL COMBUSTION ENGINE POWERING AN ELECTRICAL GENERATOR. THE ENGINE IS SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM AND AN OXIDATION CATALYST
- N-9141-5-0: MILK DRYING OPERATION WITH A 30.4 MMBTU/HR EXOTHERMICS PRJ291019954 INDIRECT-FIRED PROCESS HEATER WITH AN ULTRA-LOW NOX ECLIPSE MINNOX 8250 CCS-T BURNER SYSTEM, AND A MILK DRYING CHAMBER WITH PARTICULATE EMISSIONS SERVED BY A 69,681 CFM GEA PROCESS ENGINEERING TRC-7000-240-1098 BAGHOUSE
- N-9141-6-0: POWDERED MILK VIBROFLUIDIZER SERVED BY A 13,466 CFM GEA PROCESS ENGINEERING BF-L-10-135 BAGHOUSE
- N-9141-7-0: POWDERED MILK VACUUM CONVEYANCE SYSTEM WITH FOUR VACUUM PUMPS SERVED BY GEA VACUUM INLINE FILTERS AND A GEA 300 BF O/L USDA FILTER SYSTEM (988 CFM)
- N-9141-8-0: VACUUM PUMP SERVED BY A SOLBERG VACUUM FILTER (71 CFM)
- N-9141-9-0: SURGE HOPPER NITROGEN PURGE OPERATION SERVED BY A GEA CUSTOM VENT FILTER (52 CFM)
- N-9141-10-0: POWDERED MILK PACKAGING OPERATION SERVED BY A 2,650 CFM DYNEQUIP DUST COLLECTOR

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

N-9141-1-0: Natural Gas-Fired Boiler #1

This boiler is equipped with ultra low-NO_x burners that reduce NO formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas ultra low-NO_x burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_x. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

This boiler is equipped with a flue gas recirculation system. The use of flue gas recirculation can reduce nitrogen oxides (NO_x) emissions by 60% to 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since thermal NO_x is formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NO_x.

N-9141-2-0: Natural Gas-Fired Boiler #2

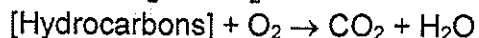
This boiler is equipped with ultra low-NO_x burners that reduce NO formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas ultra low-NO_x burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_x. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

This boiler is equipped with a flue gas recirculation system. The use of flue gas recirculation can reduce nitrogen oxides (NO_x) emissions by 60% to 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since thermal NO_x is formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NO_x.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The IC engine will be equipped with an oxidation catalyst and a selective catalytic reduction system (SCR).

Oxidation catalysts typically include a monolith honeycomb structure that is coated with a metal catalyst material. The structure has many small parallel channels that provide high catalytic contact area to the engine exhaust gases. As the hot gases contact the catalyst material, the following reactions occur:



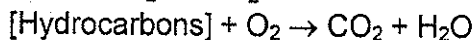
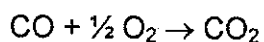
Typically, an oxidation catalyst will convert approximately 90% of CO to CO₂, and approximately 50% of hydrocarbons to CO₂ and H₂O.

Engine emissions will also be controlled by a selective catalytic reduction (SCR) system. Selective catalytic reduction systems selectively reduce NOx emissions by injecting ammonia (NH₃) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, ammonia, and oxygen react on the surface of the catalyst to form molecular nitrogen (N₂) and water. SCR is capable of over 90 percent NOx reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NOx and NH₃ to pass through the catalyst unreacted. Ammonia slip will be limited to 5 ppmvd @ 15% O₂ for the engine.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The IC engine will be equipped with an oxidation catalyst and a selective catalytic reduction system (SCR).

Oxidation catalysts typically include a monolith honeycomb structure that is coated with platinum group metal catalyst material. The structure has many small parallel channels that provide high catalytic contact area to the engine exhaust gases. As the hot gases contact the catalyst material, the following reactions occur:



Typically, an oxidation catalyst will convert approximately 90% of CO to CO₂, and approximately 50% of hydrocarbons to CO₂ and H₂O.

Engine emissions will also be controlled by a selective catalytic reduction (SCR) system. Selective catalytic reduction systems selectively reduce NOx emissions by injecting ammonia (NH₃) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, ammonia, and oxygen react on the surface of the catalyst to form molecular nitrogen (N₂) and water. SCR is capable of over 90 percent NOx reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NOx and NH₃ to pass through the catalyst unreacted. Ammonia slip will be limited to 5 ppmvd @ 15% O₂ for the engine.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The milk dryer process heater is equipped with ultra low-NOx burners that reduce NO formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas ultra low-NOx burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NOx. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

The milk drying chamber is served by a baghouse. The baghouse is guaranteed by the manufacturer to operate with a maximum grain loading rate of 0.003 grains/dscf.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The vibro fluidizer is served by a baghouse. The baghouse is guaranteed by the manufacturer to operate with a maximum grain loading rate of 0.003 grains/dscf.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The vacuum powder conveyance operation is served by inline filters and a dust collection system, in series. The inline filters and dust collection system, in series, is expected to operate with a maximum grain loading rate of 0.0004 grains/dscf.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The vacuum pump is served by a dust collector. The dust collection system is expected to operate with a maximum grain loading rate of 0.003 grains/dscf.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The surge hopper is controlled by a dust collector. The dust collection system is expected to operate with a maximum grain loading rate of 0.003 grains/dscf.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The powdered milk packaging operation is served by a dust collector. The baghouse is guaranteed to operate with a maximum grain loading rate of 0.0004 grains/dscf.

VII. GENERAL CALCULATIONS

A. Assumptions

N-9141-1-0: Natural Gas-Fired Boiler #1, and N-9141-2-0: Natural Gas-Fired Boiler #2

- All calculations and physical constants used are corrected to Standard Conditions as defined in District Rule 1020, Section 3.47 (60 °F and 14.7 lb/in²).
- Maximum Daily Operating Hours: 24 hr/day
- Maximum Annual Operating Hours: 8,760 hr/year
- EPA F-factor for Natural Gas (adjusted to 60 °F): 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Natural Gas Higher Heating Value: 1,000 Btu/scf (District Practice)

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine, and N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

- All calculations and physical constants used are corrected to Standard Conditions as defined in District Rule 1020, Section 3.47 (60 °F and 14.7 lb/in²).
- Maximum Daily Operating Hours: 24 hr/day
- Maximum Annual Operating Hours: 8,760 hr/year
- EPA F-factor for Natural Gas (adjusted to 60 °F): 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Fuel Higher heating value: 1,000 Btu/scf
- BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
- Thermal efficiency of engine: commonly $\approx$ 35%

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

- All calculations and physical constants used are corrected to Standard Conditions as defined in District Rule 1020, Section 3.47 (60 °F and 14.7 lb/in²).
- Maximum Daily Operating Hours: 24 hr/day
- Maximum Annual Operating Hours: 8,760 hr/year
- EPA F-factor for Natural Gas (adjusted to 60 °F): 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Natural Gas Higher Heating Value: 1,000 Btu/scf (District Practice)
- All PM from the baghouse exhaust is PM10.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

- All PM from the baghouse exhaust is PM10.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

- All PM from the dust collector exhaust is PM10.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

- All PM from the dust collector exhaust is PM10.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

- All PM from the dust collector exhaust is PM10.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

- All PM from the dust collector exhaust is PM10.

B. Emission Factors

N-9141-1-0: Natural Gas-Fired Boiler #1

Emission Factors for Boiler #1		
Pollutant	EF2 (lb/MMBtu)	Source
NO _x	0.0062 (equivalent to 5 ppmvd @ 3% O ₂)	Manufacturer
SO _x	0.00285	District Policy APR 1720
PM ₁₀	0.003	District FYI 328
CO	0.148 (equivalent to 200 ppmvd @ 3% O ₂)	Manufacturer
VOC	0.004 (equivalent to 10 ppmvd @ 3% O ₂)	Manufacturer

N-9141-2-0: Natural Gas-Fired Boiler #2

Emission Factors for Boiler #2		
Pollutant	EF2 (lb/MMBtu)	Source
NO _x	0.0062 (equivalent to 5 ppmvd @ 3% O ₂)	Manufacturer
SO _x	0.00285	District Policy APR 1720
PM ₁₀	0.003	District FYI 328
CO	0.148 (equivalent to 200 ppmvd @ 3% O ₂)	Manufacturer
VOC	0.004 (equivalent to 10 ppmvd @ 3% O ₂)	Manufacturer

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

Emission Factors for Cogeneration Plant #1		
Pollutant	EF2 (g/bhp-hr)	Source
NO _x	0.024 (equivalent to 2 ppmvd @ 15% O ₂)	Manufacturer
SO _x	0.0094	GEAR 11NG
PM ₁₀	0.02	Manufacturer
CO	0.068 (equivalent to 8 ppmvd @ 15% O ₂)	Manufacturer
VOC	0.034 (equivalent to 7 ppmvd @ 15% O ₂)	Manufacturer
NH ₃	0.017 (equivalent to 5 ppmvd @ 15% O ₂)	Manufacturer

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

Emission Factors for Cogeneration Plant #1		
Pollutant	EF2 (g/bhp-hr)	Source
NO _x	0.024 (equivalent to 2 ppmvd @ 15% O ₂)	Manufacturer
SO _x	0.0094	GEAR 11NG
PM ₁₀	0.02	Manufacturer
CO	0.068 (equivalent to 8 ppmvd @ 15% O ₂)	Manufacturer
VOC	0.034 (equivalent to 7 ppmvd @ 15% O ₂)	Manufacturer
NH ₃	0.017 (equivalent to 5 ppmvd @ 15% O ₂)	Manufacturer

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

Emission Factors for Process Heater		
Pollutant	EF2 (lb/MMBtu)	Source
NO _x	0.0062 (equivalent to 5 ppmvd @ 3% O ₂)	Manufacturer
SO _x	0.00285	District Policy APR 1720
PM ₁₀	0.003	District FYI 328
CO	0.148 (equivalent to 200 ppmvd @ 3% O ₂)	Manufacturer
VOC	0.004 (equivalent to 10 ppmvd @ 3% O ₂)	Manufacturer

Emission Factor for Milk Dryer Chamber		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.003	Manufacturer

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

Emission Factor for Vibro Fluidizer		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.003	Manufacturer

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

Emission Factor for Vacuum Powder Conveyance Operation		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.0004	Manufacturer

N-9141-8-0: Vacuum Pump Served by a Dust Collector

Emission Factor for Vacuum Pump		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.003	Manufacturer

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

Emission Factor for Surge Hopper Nitrogen Purge		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.003	Applicant

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

Emission Factor for Packaging Operation		
Pollutant	EF2 (grains/dscf)	Source
PM10	0.0004	Manufacturer

C. Calculations

1. Pre-Project Potential to Emit (PE1)

These are new units; therefore, pre-project emissions are equal to zero.

2. Post Project Potential to Emit (PE2)

N-9141-1-0: Natural Gas-Fired Boiler #1

The post-project daily emissions from the boiler are calculated using the following equation:

$$PE2_{\text{Daily}} = 25.1 \text{ MMBtu/hr} \times 24 \text{ hr/day} \times EF2 \text{ (lb/MMBtu)}$$

The post-project annual emissions from the boiler are calculated using the following equation:

$$PE2_{\text{Annual}} = 25.1 \text{ MMBtu/hr} \times 8760 \text{ hr/year} \times EF2 \text{ (lb/MMBtu)}$$

The following table summarizes the post-project emission calculations for the boiler.

Post-Project Emissions from Boiler #1			
Pollutant	EF2 (lb/MMBtu)	PE2 (lb/day)	PE2 (lb/year)
NOx	0.0062	3.7	1,363
SOx	0.00285	1.7	627
PM10	0.003	1.8	660
CO	0.148	89.2	32,542
VOC	0.004	2.4	880

N-9141-2-0: Natural Gas-Fired Boiler #2

The post-project daily emissions from the boiler are calculated using the following equation:

$$PE2_{\text{Daily}} = 25.1 \text{ MMBtu/hr} \times 24 \text{ hr/day} \times EF2 \text{ (lb/MMBtu)}$$

The post-project annual emissions from the boiler are calculated using the following equation:

$$PE2_{\text{Annual}} = 25.1 \text{ MMBtu/hr} \times 8760 \text{ hr/year} \times EF2 \text{ (lb/MMBtu)}$$

The following table summarizes the post-project emission calculations for the boiler.

Post-Project Emissions from Boiler #2			
Pollutant	EF2 (lb/MMBtu)	PE2 (lb/day)	PE2 (lb/year)
NOx	0.0062	3.7	1,363
SOx	0.00285	1.7	627
PM10	0.003	1.8	660
CO	0.148	89.2	32,542
VOC	0.012	2.4	880

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The post-project daily emissions from the engine are calculated using the following equation:

$$PE2_{\text{Daily}} = 3,681 \text{ BHP} \times 24 \text{ hr/day} \times EF2 \text{ (g/bhp-hr)} \times \text{lb}/453.6 \text{ g}$$

The post-project annual emissions from the engine are calculated using the following equation:

$$PE2_{\text{Annual}} = 3,681 \text{ BHP} \times 8760 \text{ hr/year} \times EF2 \text{ (g/bhp-hr)} \times \text{lb}/453.6 \text{ g}$$

The following table summarizes the post-project emission calculations for the engine.

Post-Project Emissions from Cogeneration Plant #1			
Pollutant	EF2 (g/bhp-hr)	PE2 (lb/day)	PE2 (lb/year)
NOx	0.024	4.7	1,706
SOx	0.0094	1.8	668
PM10	0.02	3.9	1,422
CO	0.068	13.2	4,834
VOC	0.034	6.6	2,417
NH ₃	0.017	3.3	1,208

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The post-project daily emissions from the engine are calculated using the following equation:

$$PE2_{\text{Daily}} = 3,681 \text{ BHP} \times 24 \text{ hr/day} \times EF2 \text{ (g/bhp-hr)} \times \text{lb}/453.6 \text{ g}$$

The post-project annual emissions from the engine are calculated using the following equation:

$$PE2_{\text{Annual}} = 3,681 \text{ BHP} \times 8760 \text{ hr/year} \times EF2 \text{ (g/bhp-hr)} \times \text{lb}/453.6 \text{ g}$$

The following table summarizes the post-project emission calculations for the engine.

Post-Project Emissions from Cogeneration Plant #2			
Pollutant	EF2 (g/bhp-hr)	PE2 (lb/day)	PE2 (lb/year)
NOx	0.024	4.7	1,706
SOx	0.0094	1.8	668
PM10	0.02	3.9	1,422
CO	0.068	13.2	4,834
VOC	0.034	6.6	2,417
NH ₃	0.017	3.3	1,208

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The post-project daily emissions from the process heater are calculated using the following equation:

$$PE2_{\text{Daily}} = 30.4 \text{ MMBtu/hr} \times 24 \text{ hr/day} \times EF2 \text{ (lb/MMBtu)}$$

The post-project annual emissions from the process heater are calculated using the following equation:

$$PE2_{\text{Annual}} = 30.4 \text{ MMBtu/hr} \times 8760 \text{ hr/year} \times EF2 \text{ (lb/MMBtu)}$$

The following table summarizes the post-project emission calculations for the process heater.

Post-Project Emissions from the Process Heater			
Pollutant	EF2 (lb/MMBtu)	PE2 (lb/day)	PE2 (lb/year)
NOx	0.0062	4.5	1,651
SOx	0.00285	2.1	759
PM10	0.003	2.2	799
CO	0.148	108.0	39,413
VOC	0.004	2.9	1,065

The post-project daily emissions from the milk drying chamber are calculated using the following equation:

$$PE2_{\text{Daily}} = 69,681 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the milk drying chamber are calculated using the following equation:

$$PE2_{\text{Annual}} = 69,681 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the milk drying chamber.

Post-Project Emissions from the Milk Drying Chamber			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.003	43.0	15,696

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The post-project daily emissions from the vibro fluidizer are calculated using the following equation:

$$PE2_{\text{Daily}} = 13,466 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the vibro fluidizer are calculated using the following equation:

$$PE2_{\text{Annual}} = 13,466 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the vibro fluidizer.

Post-Project Emissions from the Vibro Fluidizer			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.003	8.3	3,033

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The post-project daily emissions from the vacuum conveyance operation are calculated using the following equation:

$$PE2_{\text{Daily}} = 988 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the vacuum conveyance operation are calculated using the following equation:

$$PE2_{\text{Annual}} = 988 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the vacuum conveyance operation.

Post-Project Emissions from the Vacuum Conveyance Operation			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.0004	0.1	30

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The post-project daily emissions from the vacuum pump are calculated using the following equation:

$$PE2_{\text{Daily}} = 71 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the vacuum pump are calculated using the following equation:

$$PE2_{\text{Annual}} = 71 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the vacuum pump.

Post-Project Emissions from the vacuum pump			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.003	0.0	16

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The post-project daily emissions from the surge hopper nitrogen purge process are calculated using the following equation:

$$PE2_{\text{Daily}} = 52 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the surge hopper nitrogen purge process are calculated using the following equation:

$$PE2_{\text{Annual}} = 52 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the surge hopper nitrogen purge process:

Post-Project Emissions from the Surge Hopper Nitrogen Purge Process			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.003	0.0	12

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The post-project daily emissions from the powdered milk packaging operation are calculated using the following equation:

$$PE2_{\text{Daily}} = 2,650 \text{ CFM} \times 60 \text{ min/hr} \times 24 \text{ hr/day} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The post-project annual emissions from the powdered milk packaging operation are calculated using the following equation:

$$PE2_{\text{Annual}} = 2,650 \text{ CFM} \times 60 \text{ min/hr} \times 8760 \text{ hr/year} \times EF(\text{grains/dscf}) \times \text{lb}/7000 \text{ grains}$$

The following table summarizes the post-project emission calculations for the powdered milk packaging operation.

Post-Project Emissions from the Powdered Milk Packaging Operation			
Pollutant	EF2 (grains/dscf)	PE2 (lb/day)	PE2 (lb/year)
PM10	0.0004	0.2	80

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

Pursuant to Section 4.9 of 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.

This is a new facility; therefore, SSPE1 is equal to zero for all pollutants.

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

Pursuant to Section 4.10 of 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 (lb/year)						
Permit Unit	NOx	SOx	PM 10	CO	VOC	NH ₃
N-9141-1-0	1,363	627	660	32,542	880	0
N-9141-2-0	1,363	627	660	32,542	880	0
N-9141-3-0	1,706	668	1,422	4,834	2,417	1,208
N-9141-4-0	1,706	668	1,422	4,834	2,417	1,208
N-9141-5-0	1,651	759	16,495	39,413	1,065	0
N-9141-6-0	0	0	3,033	0	0	0
N-9141-7-0	0	0	30	0	0	0
N-9141-8-0	0	0	16	0	0	0
N-9141-9-0	0	0	12	0	0	0
N-9141-10-0	0	0	80	0	0	0
SSPE2	7,789	3,349	23,830	114,165	7,659	2,416

5. Major Source Determination

District Rule 2201 Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the threshold values in the following table. Section 3.24.2 states that for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits which have been banked since September 19, 1991 for Actual Emission Reductions that have occurred at this source and which have not been used on-site.

Major Source Thresholds			
Pollutant	SSPE2 (lb/year)	Major Source Thresholds (lb/year)	Major Source?
NOx	7,789	20,000	No
SOx	3,349	140,000	No
PM ₁₀	23,830	140,000	No
CO	114,165	200,000	No
VOC	7,659	20,000	No

Additionally, a major source of PM_{2.5} is defined as one with the potential to emit 100 tons/yr (200,000 lb/yr) or more of PM_{2.5}. Since PM_{2.5} is a subset of PM₁₀, it is evident that SSPE2 for PM_{2.5} emissions is less than or equal to 100 tons/yr; thus, this facility is not a major source for PM_{2.5}.

District Rule 2410 Major Source Determination:

This is a new facility; therefore, the facility is not an existing PSD Major Source.

6. Baseline Emissions (BE)

The baseline emission (BE) calculations are performed pollutant by pollutant to determine the amount of offsets required, where necessary, when the SSPE1 is greater than the offset threshold.

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 Section 3.22.

This is a new facility; therefore, BE is equal to zero for all emission units and all pollutants.

7. SB288 Modification

This facility is not a Major Source for any pollutant; therefore, an SB288 Modification cannot be triggered.

8. Federal Major Modification

This facility is not a Major Source for any pollutant; therefore, a Federal Major Modification cannot be triggered.

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

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

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

I. Project Emissions Increase - New Major Source Determination

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

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

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	3.9	3.8	1.7	57.1	11.9	11.9
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

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*:

- Any new emissions unit with a potential to emit exceeding 2.0 pounds per day,
- The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding 2.0 pounds per day,
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding 2.0 pounds per day, and/or
- 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

N-9141-1-0: Natural Gas-Fired Boiler #1

New Emissions Unit BACT Applicability for Boiler #1				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	3.7	> 2.0	n/a	Yes
SO _x	1.7	> 2.0	n/a	No
PM ₁₀	1.8	> 2.0	n/a	No
CO	89.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	114,165	No
VOC	2.4	> 2.0	n/a	Yes

As shown in the above table, boiler #1 triggers BACT for NO_x and VOC emissions.

N-9141-2-0: Natural Gas-Fired Boiler #2

New Emissions Unit BACT Applicability for Boiler #2				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	3.7	> 2.0	n/a	Yes
SO _x	1.7	> 2.0	n/a	No
PM ₁₀	1.8	> 2.0	n/a	No
CO	89.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	114,165	No
VOC	2.4	> 2.0	n/a	Yes

As shown in the previous table, boiler #2 triggers BACT for NO_x and VOC emissions.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

New Emissions Unit BACT Applicability for Cogeneration Engine #1				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	4.7	> 2.0	n/a	Yes
SO _x	1.8	> 2.0	n/a	No
PM ₁₀	3.9	> 2.0	n/a	Yes
CO	13.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	114,165	No
VOC	6.6	> 2.0	n/a	Yes

As shown in the above table, natural gas-fired cogeneration engine #1 triggers BACT for NO_x, PM₁₀, and VOC emissions. Additionally, the SCR control device emits ammonia; however, the SCR control device does not meet the definition of an emission unit; therefore the SCR control device is not subject to BACT requirements and BACT is not required for the ammonia emissions from the control device.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

New Emissions Unit BACT Applicability for Cogeneration Engine #2				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	4.7	> 2.0	n/a	Yes
SO _x	1.8	> 2.0	n/a	No
PM ₁₀	3.9	> 2.0	n/a	Yes
CO	13.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	114,165	No
VOC	6.6	> 2.0	n/a	Yes

As shown in the above table, natural gas-fired cogeneration engine #2 triggers BACT for NO_x, PM₁₀, and VOC emissions. Additionally, the SCR control device emits ammonia; however, the SCR control device does not meet the definition of an emission unit; therefore the SCR control device is not subject to BACT requirements and BACT is not required for the ammonia emissions from the control device.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

New Emissions Unit BACT Applicability for Process Heater				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	4.5	> 2.0	n/a	Yes
SO _x	2.1	> 2.0	n/a	Yes
PM ₁₀	2.2	> 2.0	n/a	Yes
CO	108.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	114,165	No
VOC	2.9	> 2.0	n/a	Yes

As shown in the above table, the natural gas-fired process heater triggers BACT for NO_x, SO_x, PM₁₀, and VOC emissions.

New Emissions Unit BACT Applicability for Milk Drying Chamber				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	43.0	> 2.0	n/a	Yes

As shown in the above table, the milk drying chamber triggers BACT for PM₁₀ emissions.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

New Emissions Unit BACT Applicability for Vibro Fluidizer				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	8.3	> 2.0	n/a	Yes

As shown in the above table, the vibro fluidizer triggers BACT for PM₁₀ emissions.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

New Emissions Unit BACT Applicability for Powder Conveyance				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	0.1	> 2.0	n/a	No

As shown in the above table, the vacuum powder conveyance operation does not trigger BACT.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

New Emissions Unit BACT Applicability for Vacuum Pump				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	0.0	> 2.0	n/a	No

As shown in the above table, the vacuum pump does not trigger BACT.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

New Emissions Unit BACT Applicability for Nitrogen Purge				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	0.0	> 2.0	n/a	No

As shown in the above table, the surge hopper nitrogen purge operation does not trigger BACT.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

New Emissions Unit BACT Applicability for Milk Packaging				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
PM ₁₀	0.2	> 2.0	n/a	No

As shown in the above table, the milk packaging operation does not trigger BACT.

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

There are no emissions units being relocated from one stationary source to another.

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

There are no modified emission units in this project.

d. Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB288 or Federal Major Modification.

2. BACT Guideline

N-9141-1-0: Natural Gas-Fired Boiler #1

The District adopted District Rule 4320 for boilers on October 16, 2008. The NOx emission limit requirements in District Rule 4320 were lower than the limits contained within BACT Guideline 1.1.1 for boilers rated 20 MMBtu/hr and above. Therefore, the District rescinded BACT Guideline 1.1.1 and a project-specific BACT analysis is required for boilers.

N-9141-2-0: Natural Gas-Fired Boiler #2

The District adopted District Rule 4320 for boilers on October 16, 2008. The NOx emission limit requirements in District Rule 4320 were lower than the limits contained within BACT Guideline 1.1.1 for boilers rated 20 MMBtu/hr and above. Therefore, the District rescinded BACT Guideline 1.1.1 and a project-specific BACT analysis is required for boilers.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

BACT Guideline 3.3.12, 3rd quarter 2015, which appears in Appendix III of this report, covers non-agricultural fossil-fuel fired IC engines.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

BACT Guideline 3.3.12, 3rd quarter 2015, which appears in Appendix III of this report, covers non-agricultural fossil-fuel fired IC engines.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The District adopted District Rule 4320 for process heaters on October 16, 2008. The NOx emission limit requirements in District Rule 4320 were lower than the limits contained within BACT Guideline 1.1.1 for process heaters rated 20 MMBtu/hr and above. Therefore, the District rescinded BACT Guideline 1.1.1 and a project-specific BACT analysis is required for process heaters.

BACT Guideline 1.6.11, 3rd quarter 2015, which appears in Appendix IV of this report, covers milk spray dryer operations.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The vibro fluidizer operation is part of the milk spray drying operation. BACT Guideline 1.6.11, 3rd quarter 2015, which appears in Appendix IV of this report, covers milk spray dryer operations.

3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

N-9141-1-0: Natural Gas-Fired Boiler #1

This boiler triggers BACT for NOx and VOC emissions. Pursuant to the top-down BACT Analysis in Appendix II of this document, BACT is satisfied with:

NOx: 5 ppmvd @ 3% O₂ or 0.0062 lb/MMBtu
VOC: Use of PUC-Quality Natural Gas Fuel

The applicant is proposing this level of control; therefore BACT requirements are satisfied.

N-9141-2-0: Natural Gas-Fired Boiler #2

This boiler triggers BACT for NOx and VOC emissions. Pursuant to the top-down BACT Analysis in Appendix II of this document, BACT is satisfied with:

NOx: 5 ppmvd @ 3% O₂ or 0.0062 lb/MMBtu
VOC: Use of PUC-Quality Natural Gas Fuel

The applicant is proposing this level of control; therefore BACT requirements are satisfied.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

This cogeneration engine triggers BACT for NOx, PM10, and VOC emissions. Pursuant to the top-down BACT Analysis in Appendix III of this document, BACT is satisfied with:

NOx: 2 ppmvd @ 15% O₂
PM10: 0.06 g/bhp-hr
VOC: 25 ppmvd @ 15% O₂ or 0.15 g/bhp-hr

The applicant is proposing this level of control; therefore BACT requirements are satisfied.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

This cogeneration engine triggers BACT for NO_x, PM₁₀, and VOC emissions. Pursuant to the top-down BACT Analysis in Appendix III of this document, BACT is satisfied with:

NO_x: 2 ppmvd @ 15% O₂

PM₁₀: 0.06 g/bhp-hr

VOC: 25 ppmvd @ 15% O₂ or 0.15 g/bhp-hr

The applicant is proposing this level of control; therefore BACT requirements are satisfied.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The process heater triggers BACT for NO_x, SO_x, PM₁₀, and VOC emissions. Pursuant to the top-down BACT Analysis in Appendix II of this document, BACT is satisfied with:

NO_x: 5 ppmvd @ 3% O₂ or 0.0062 lb/MMBtu

SO_x, PM₁₀, VOC: Use of PUC-Quality Natural Gas Fuel

The applicant is proposing this level of control; therefore BACT requirements are satisfied for the process heater.

The milk drying chamber triggers BACT for PM₁₀ emissions. Pursuant to the top-down BACT Analysis in Appendix IV of this document, BACT is satisfied with:

PM₁₀: Use of a Baghouse

The applicant is proposing this level of control; therefore BACT requirements are satisfied for the milk drying chamber.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The vibro fluidizer triggers BACT for PM₁₀ emissions. Pursuant to the top-down BACT Analysis in Appendix IV of this document, BACT is satisfied with:

PM₁₀: Use of a Baghouse

The applicant is proposing this level of control; therefore BACT requirements are satisfied for the vibro fluidizer.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offsets shall be triggered on a pollutant by pollutant basis and shall be required if the Post-project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201. As shown in the table below, offsets are not triggered.

Pollutant	SSPE2 (lb/yr)	Offset Thresholds (lb/yr)	Offsets Triggered?
NO _x	7,789	20,000	No
SO _x	3,349	54,750	No
PM ₁₀	23,830	29,200	No
CO	114,165	200,000	No
VOC	7,659	20,000	No

Quantity of Offsets Required

Since offsets are not triggered, the quantity of offsets required is equal to zero.

C. Public Notification

1. Applicability

Public noticing is required for:

- Any new Major Source, which is a new facility that is also a Major Source,
- Major Modifications,
- Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- Any project which results in the offset thresholds being surpassed, and/or
- Any project with an SSPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

This equipment will not be operating at a New Major Source.

b. Major Modification

As demonstrated in Section VII.C.7 above, this project does not qualify as a SB288 or Federal Major Modification.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. CO emissions from the milk drying process heater (N-9141-5-0) are greater than 100 pounds a day; therefore a public notice is required for this project.

d. Offset Threshold

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

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	0	7,789	20,000 lb/year	No
SO _x	0	3,349	54,750 lb/year	No
PM ₁₀	0	23,830	29,200 lb/year	No
CO	0	114,165	200,000 lb/year	No
VOC	0	7,659	20,000 lb/year	No

As demonstrated above, an offset threshold will not be surpassed within this project.

e. SSPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSPE) of more than 20,000 lb/year of any affected pollutant. For this project, SSPE will be calculated as the difference between SSPE2 and SSPE1, i.e. $SSPE = SSPE2 - SSPE1$. The SSPE is compared to the SSPE Public Notice thresholds in the following tables:

Stationary Source Increase in Permitted Emissions [SSPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSPE (lb/year)	SSPE Public Notice Threshold	Public Notice Required?
NO _x	7,789	0	7,789	20,000 lb/year	No
SO _x	3,349	0	3,349	20,000 lb/year	No
PM ₁₀	23,830	0	23,830	20,000 lb/year	Yes
CO	114,165	0	114,165	20,000 lb/year	Yes
VOC	7,659	0	7,659	20,000 lb/year	No
NH ₃	2,416	0	2,416	20,000 lb/year	No

As demonstrated above, the SSPE for PM10 and CO emissions are greater than 20,000 lb/year; therefore public noticing for SSPE purposes is required.

F. Significant TV Modification

This project does not trigger a Significant Title V Modification; therefore, a public notice isn't required for this purpose.

2. Public Notice Action

As discussed above, public noticing is required for this project. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC permits for this equipment.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity.

N-9141-1-0: Natural Gas-Fired Boiler #1

The following conditions will be included on the Authority to Construct permit:

- *This boiler shall only be fired on PUC-quality natural gas. [District Rule 2201]*
- *Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*

N-9141-2-0: Natural Gas-Fired Boiler #2

The following conditions will be included on the Authority to Construct permit:

- *This boiler shall only be fired on PUC-quality natural gas. [District Rule 2201]*
- *Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The following conditions will be included on the Authority to Construct permit:

- *This engine shall only be fired on PUC-quality natural gas. [District Rule 2201]*
- *Emissions from the engine shall not exceed any of the following limits: 2 ppmvd NOx @ 15% O₂ (equivalent to 0.024 g-NOx/bhp-hr), 0.0094 g-SOx/bhp-hr, 0.02 g-PM10/bhp-hr, 8 ppmvd CO @ 15% O₂ (equivalent to 0.068 g-CO/bhp-hr), 7 ppmvd VOC @ 15% O₂ (equivalent to 0.034 g-VOC/bhp-hr), and 5 ppmvd NH₃ @ 15% O₂ (equivalent to 0.017 g-NH₃/bhp-hr). [District Rules 2201, 4701, and 4702]*

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The following conditions will be included on the Authority to Construct permit:

- *This engine shall only be fired on PUC-quality natural gas. [District Rule 2201]*
- *Emissions from the engine shall not exceed any of the following limits: 2 ppmvd NOx @ 15% O₂ (equivalent to 0.024 g-NOx/bhp-hr), 0.0094 g-SOx/bhp-hr, 0.02 g-PM10/bhp-hr, 8 ppmvd CO @ 15% O₂ (equivalent to 0.068 g-CO/bhp-hr), 7 ppmvd VOC @ 15% O₂ (equivalent to 0.034 g-VOC/bhp-hr), and 5 ppmvd NH₃ @ 15% O₂ (equivalent to 0.017 g-NH₃/bhp-hr). [District Rules 2201, 4701, and 4702]*

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The following conditions will be included on the Authority to Construct permit:

- *This process heater shall only be fired on PUC-quality natural gas. [District Rule 2201]*
- *Emissions from this process heater shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*
- *The throughput for the milk dryer shall not exceed 203 tons of dried milk in any one day. [District Rule 2201]*
- *PM10 Emissions from the milk drying chamber served by a baghouse shall not exceed 0.212 lb/ton of dried milk produced. [District Rule 2201]¹*

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The following condition will be included on the Authority to Construct permit:

- *PM10 Emissions from the vibro fluidizer served by a baghouse shall not exceed 0.003 grains/dscf. [District Rule 2201]*

¹ PM10 Source testing is required for the milk drying chamber served by the baghouse. Grains/dscf limits are not appropriate for units that must be source tested, since the operator can easily alter the grains/dscf reading for the unit by lowering the throughput. Therefore, the emission factor for the milk dryer served by a baghouse will be written in terms of lb/ton of dried milk.

EF = 43.0 lb-PM10/day ÷ 203 tons dried milk/day = 0.212 lb-PM10/ton of dried milk.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The following condition will be included on the Authority to Construct permit:

- *PM10 Emissions from the vacuum powder conveyance system served by inline filters and a dust collection system shall not exceed 0.0004 grains/dscf. [District Rule 2201]*

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The following condition will be included on the Authority to Construct permit:

- *PM10 Emissions from the vacuum pump served by a dust collection system shall not exceed 0.003 grains/dscf. [District Rule 2201]*

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The following condition will be included on the Authority to Construct permit:

- *PM10 Emissions from the surge nitrogen process served by a filter shall not exceed 0.003 grains/dscf. [District Rule 2201]*

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The following condition will be included on the Authority to Construct permit:

- *PM10 Emissions from the powdered milk packaging operation served by a dust collection system shall not exceed 0.0004 grains/dscf. [District Rule 2201]*

E. Compliance Assurance

1. Source Testing

N-9141-1-0: Natural Gas-Fired Boiler #1

The boiler is subject to District Rule 4320. Source testing requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-2-0: Natural Gas-Fired Boiler #2

The boiler is subject to District Rule 4320. Source testing requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Source testing requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation. Additional source test requirements for ammonia slip will also be discussed in the District Rule 4702 section of this evaluation. An initial test to verify the PM10 emission rate for the engine will be required.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Source testing requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation. Additional source test requirements for ammonia slip will also be discussed in the District Rule 4702 section of this evaluation. An initial test to verify the PM10 emission rate for the engine will be required.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The process heater is subject to District Rule 4320. Source testing requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from the milk drying chamber are equal to 43.0 lb/day; therefore, initial source testing is required. The following conditions will be included on the Authority to Construct permit:

- *Source testing to measure PM10 emissions from the exhaust of the baghouse serving the milk drying chamber shall be conducted within 60 days of initial start-up. [District Rule 2201]*
- *Source testing to measure PM10 emissions from the exhaust of the baghouse serving the milk drying chamber shall be conducted using EPA Methods 201A and 202. Alternatively, the results of a total particulate matter test using CARB Method 5 may be used to demonstrate compliance with the PM10 emission limit provided the results include both the filterable (front half) and condensable (back half) particulates, and that all particulate matter is assumed to be PM10. Should the permittee decide to use different test methodology, the methodology shall first be approved by the District prior to its use. [District Rule 2201]*

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from this operation are less than 30 pounds per day; therefore, a source test is not required.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from this operation are less than 30 pounds per day; therefore, a source test is not required.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from this operation are less than 30 pounds per day; therefore, a source test is not required.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from this operation are less than 30 pounds per day; therefore, a source test is not required.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

Pursuant to District Policy APR 1705, initial source testing is required for non-combustion equipment served by a baghouse if the expected PM10 emissions are greater than 30 pounds per day. If the expected PM10 emissions are greater than 70 pounds per day, annual testing is required. Emissions from this operation are less than 30 pounds per day; therefore, a source test is not required.

2. Monitoring

N-9141-1-0: Natural Gas-Fired Boiler #1

The boiler is subject to District Rule 4320. Monitoring requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-2-0: Natural Gas-Fired Boiler #2

The boiler is subject to District Rule 4320. Monitoring requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Monitoring requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation. Additional monitoring requirements for ammonia slip will also be discussed in the District Rule 4702 section of this evaluation.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Monitoring requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation. Additional monitoring requirements for ammonia slip will also be discussed in the District Rule 4702 section of this evaluation.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The process heater is subject to District Rule 4320. Monitoring requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

The baghouse will be equipped with a pressure differential gauge. The following conditions will be included on the permit:

- *The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]*
- *The baghouse shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 12 inches water column. [District Rule 2201]*
- *{3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]*

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The baghouse will be equipped with a pressure differential gauge. The following conditions will be included on the permit:

- *The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]*
- *The baghouse shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 12 inches water column. [District Rule 2201]*
- *{3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]*

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The vacuum inline filters will be equipped with a pressure differential gauge. The following conditions will be included on the permit:

- *The vacuum inline filters shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]*
- *The vacuum inline filters shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 4 inches water column. [District Rule 2201]*
- *Differential operating pressure shall be monitored and recorded on each day that the vacuum inline filters operate. [District Rule 2201]*

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The dust collection system is not equipped with a pressure differential gauge. Therefore, no monitoring requirements are applicable to this operation.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The dust collection system is not equipped with a pressure differential gauge. Therefore, no monitoring requirements are applicable to this operation.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The baghouse will be equipped with a pressure differential gauge. The following conditions will be included on the permit:

- *The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]*

- *The baghouse shall operate at all times with a minimum differential pressure of 4 inches water column and a maximum differential pressure of 8 inches water column. [District Rule 2201]*
- *{3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]*

3. Recordkeeping

N-9141-1-0: Natural Gas-Fired Boiler #1

The boiler is subject to District Rule 4320. Recordkeeping requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-2-0: Natural Gas-Fired Boiler #2

The boiler is subject to District Rule 4320. Recordkeeping requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

The engine is subject to District Rule 4702. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The process heater is subject to District Rule 4320. Recordkeeping requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

In addition to those requirements, the following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 2201]*
- *Permittee shall keep a daily record of the quantity of dried milk produced. [District Rule 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, 2201, 4305, 4306, and 4320]*

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 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 2201]*

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 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 2201]*

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 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 2201]*

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 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 2201]*

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The following recordkeeping requirements will be included on the Authority to Construct:

- *Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 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 2201]*

4. Reporting

No reporting requirements are applicable to this project.

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 **Appendix V** of this document for the AAQA summary sheet.

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2520 Federally Mandated Operating Permits

This proposal does not exceed any of the thresholds that would require the facility to obtain a federally mandated operating permit; therefore, District Rule 2520 requirements are not applicable to this project.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Dc applies to steam generating units that are constructed, reconstructed, or modified after 6/9/89 and have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. Subpart Dc has standards for SO_x and PM₁₀. The two boilers (N-9141-1-0 and -2-0), and the natural gas-fired process heater (N-9141-5-0) are subject to the requirements of this subpart.

60.42c – Standards for Sulfur Dioxide

Since coal is not combusted by these units, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The units are not fired on coal, mixtures of coal with other fuels, wood, mixtures of wood with other fuels, or oil; therefore, the units are not subject to the requirements of this section.

60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide

Since the units in this project are not subject to the sulfur dioxide requirements of this subpart, testing to demonstrate compliance is not required.

60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter

Since the units in this project are not subject to the particulate matter requirements of this subpart, testing to demonstrate compliance is not required.

60.46c – Emission Monitoring for Sulfur Dioxide

Since the units in this project are not subject to the sulfur dioxide requirements of this subpart, no monitoring is required.

60.47c – Emission Monitoring for Particulate Matter

Since the units in this project are not subject to the particulate matter requirements of this subpart, no monitoring is required.

60.48c – Reporting and Recordkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

- (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

The design heat input capacity and type of fuel combusted at the facility will be listed on each unit's equipment description. No further conditions are required to show compliance with this requirement.

- (2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the units in this project are not subject to §60.42c or §40.43c.

- (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor to comply with NSPS requirements.

- (4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator

This requirement is not applicable since the units in this project will not be equipped with an emerging technology used to control SO₂ emissions.

Section 60.48 c (g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be included on Authorities to Construct N-9141-1-0, -2-0, and -5-0.

- *A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48 (c)(g)]*
- *Owner/operator shall maintain monthly of the type and quantity of fuel combusted by the boiler/process heater. [District Rule 2201 and 40 CFR 60.48(c)(g)]*

Section 60.48 c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 is more stringent and requires that records be kept for five years.

40 CFR 60 Subpart JJJJ – National Emission Standards for Hazardous Air Pollutants for Stationary Spark Ignition Internal Combustion Emissions (RICE)

Pursuant to § 60.4230 of Subpart JJJJ, the cogeneration engines (N-9141-3-0 and -4-0) are subject to this federal regulation. However, the District has not been delegated authorization from EPA to enforce the requirements of this regulation for non-Part 70 sources (Major Sources). The applicant will be so notified in a permit condition.

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

40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)

Pursuant to § 63.6585 of Subpart ZZZZ, this cogeneration engines (N-9141-3-0 and '-4-0) are subject to this federal regulation. However, the District has not been delegated authorization from EPA to enforce the requirements of 40 CFR 63 Subpart ZZZZ for non-Part 70 sources (Major Sources). The applicant will be so notified in a permit condition.

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. Therefore, the following condition will be included on the each Authority to Construct permit:

- *{15} 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. [District Rule 4101]*

Visible emissions from a baghouse or dust collector are expected to be 5% opacity or less. For the units with baghouses/dust collectors, N-9141-5, '-6, '-7, '-8, '-9, and '-10, the following condition will be included on each Authority to Construct:

- *Visible emissions from the baghouse/dust collector shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]*

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. Therefore, the following condition will be listed on each Authority to Construct permit:

- *{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. A full copy of the RMR summary is available in Appendix V.

RMR Summary*							
Categories	NG/Steam Generator (Unit 1-0)	NG/Steam Generator (Unit 2-0)	NG ICE (Unit 3-0)	NG ICE (Unit 4-0)	NG Heater (Unit 5-0)	Project Totals	Facility Totals
Prioritization Score	0.00	0.00	0.62	0.62	0.00	1.25	<1
Acute Hazard Index	0.00	0.00	0.01	0.01	0.00	0.03	0.03
Chronic Hazard Index	0.00	0.00	0.01	0.01	0.00	0.02	0.02
Maximum Individual Cancer Risk	7.15E-08	7.0E-08	1.22E-06	1.22E-06	6.13E-09	2.59E-06	2.59E-06
T-BACT Required?	No	No	Yes	Yes	No		
Special Permit Conditions?	Yes	Yes	No	No	Yes		

* Units N-9141-6-0, '-7-0, '-8-0, '-9-0, and '-10-0 do not emit any toxic air contaminants.

Special Permit Conditions

N-9141-1-0: Natural Gas-Fired Boiler #1

- {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-9141-2-0: Natural Gas-Fired Boiler #2

- {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-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

- The baghouse 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-9141-6-0: Vibro Fluidizer Served by a Baghouse

- The baghouse 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]

T-BACT Analysis for N-9141-3-0, Cogeneration Plant #1 with a Natural Gas-Fired IC Engine, and for N-9141-4-0, Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

Each cogeneration engine triggers Toxic Best Available Control Technology (T-BACT) for particulate emissions. According to District Policy APR 1905, *"Risk Management Policy for Permitting New and Modified Sources"*, T-BACT is the most stringent emission limitation or control technique for hazardous air pollutants that:

1. has been achieved in practice for such emissions unit and class of source; or
2. is contained in any State Implementation Plan approved by the Environmental Protection Agency for such emissions unit category and class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed emissions unit demonstrates to the satisfaction of the APCO that such limitation or control technique is not presently achievable; or
3. is contained in any Federal Standard promulgated pursuant to FCAA Section 111 (NSPS) or Section 112 (MACT) for such emissions unit category and class of source; or
4. is any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be technologically feasible for such class or category of sources or for a specific source, and cost effective as determined by the District.

The District's typically considers T-BACT to be satisfied if a unit meeting Achieved in Practice (AIP) BACT. Pursuant to the BACT/T-BACT Top-Down Analysis in Appendix III of this document, T-BACT for PM10 is satisfied with the following:

PM10: 0.06 g/bhp-hr

The applicant is proposing this level of control; therefore T-BACT requirements are satisfied for the two cogeneration engines.

Rule 4201 Particulate Matter Concentration

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

N-9141-1-0: Natural Gas-Fired Boiler #1

F-Factor for NG:	8,578 dscf/MMBtu at 60 °F
PM10 Emission Factor:	0.003 lb-PM10/MMBtu
Percentage of PM as PM10 in Exhaust:	100%

$$GL = \left(\frac{0.003 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected for this unit.

N-9141-2-0: Natural Gas-Fired Boiler #2

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F

PM10 Emission Factor: 0.003 lb-PM10/MMBtu

Percentage of PM as PM10 in Exhaust: 100%

$$GL = \left(\frac{0.003 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected for this unit.

N-9141-3-0: Cogeneration Plant #1 with a Natural Gas-Fired IC Engine

$$0.02 \quad \frac{\text{g-PM}_{10}}{\text{bhp-hr}} \times \frac{1 \text{ bhp-hr}}{2,542.5 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{8,578 \text{ dscf}} \times \frac{0.35 \text{ Btu}_{out}}{1 \text{ Btu}_{in}} \times \frac{15.43 \text{ grain}}{\text{g}} = 0.004 \quad \frac{\text{grain-PM}}{\text{dscf}}$$

Since 0.004 grain-PM/dscf is $\leq$ to 0.1 grain per dscf, compliance with Rule 4201 is expected for this unit.

N-9141-4-0: Cogeneration Plant #2 with a Natural Gas-Fired IC Engine

$$0.02 \quad \frac{\text{g-PM}_{10}}{\text{bhp-hr}} \times \frac{1 \text{ bhp-hr}}{2,542.5 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{8,578 \text{ dscf}} \times \frac{0.35 \text{ Btu}_{out}}{1 \text{ Btu}_{in}} \times \frac{15.43 \text{ grain}}{\text{g}} = 0.004 \quad \frac{\text{grain-PM}}{\text{dscf}}$$

Since 0.004 grain-PM/dscf is $\leq$ to 0.1 grain per dscf, compliance with Rule 4201 is expected for this unit.

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM10 Emission Factor: 0.003 lb-PM10/MMBtu
Percentage of PM as PM10 in Exhaust: 100%

$$GL = \left(\frac{0.003 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected for the process heater.

The grain loading limit for the milk drying chamber served by a baghouse is 0.003 grains/dscf. Therefore, compliance is also expected for that operation.

N-9141-6-0: Vibro Fluidizer Served by a Baghouse

The grain loading limit for this operation is 0.003 grains/dscf. Therefore, compliance is expected.

N-9141-7-0: Vacuum Powder Conveyance Operation Served by Dust Collectors

The grain loading limit for this operation is 0.0004 grains/dscf. Therefore, compliance is expected.

N-9141-8-0: Vacuum Pump Served by a Dust Collector

The grain loading limit for this operation is 0.003 grains/dscf. Therefore, compliance is expected.

N-9141-9-0: Surge Hopper Nitrogen Purge Process Served by a Dust Collector

The grain loading limit for this operation is 0.003 grains/dscf. Therefore, compliance is expected.

N-9141-10-0: Powdered Milk Packaging Operation Served by a Baghouse

The grain loading limit for this operation is 0.0004 grains/dscf. Therefore, compliance is expected.

Rule 4202 Particulate Matter Emission Rate

Per section 4.1, particulate matter (PM) emissions from any source operation shall not exceed the allowable hourly emission rate (E) as calculated using the following applicable formulas:

$$E = 3.59 P^{0.62} \quad (\text{when, } P = \text{process weight rate} \leq 30 \text{ tons/hr})$$

The Rule 4202 requirements do not apply to the two boilers, the two cogeneration engines, and the process heater. The remainder of the emission units is subject to the Rule 4202 requirements. The following table compares the Rule 4202 allowable hourly emission rate with the expected hourly PM emission rate for each permit unit.

Permit Unit	PM Emission Rate					
	Rule 4202			Expected PM Emissions		
	Maximum Process Rate		Maximum PM Emission Rate	PM10 Emission Rate ²	PM Emission Rate ³	PM Emission Rate ⁴
	tons/day	tons/hour ⁵	lb/hour	lb/day	lb/day	lb/hour
N-9141-5-0 Milk Drying Chamber	203	8.5	13.53	43.0	43.0	1.79
N-9141-6-0 Vibro-fluidizer	203	8.5	13.53	8.3	8.3	0.35
N-9141-7-0 Vacuum Powder Conveying	203	8.5	13.53	0.1	0.1	0.004
N-9141-8-0 Vacuum Pump	203	8.5	13.53	0.0	0.0	0.00
N-9141-9-0 Surge Hopper	203	8.5	13.53	0.0	0.0	0.00
N-9141-10-0 Powdered Milk Packaging	203	8.5	13.53	0.2	0.2	0.01

As shown, the expected PM emissions are less than the maximum allowed in each case. Thus, compliance with Rule 4201 requirements is expected.

² See Section VII of this evaluation.

³ Except as noted, 50% of PM emissions are expected to be PM₁₀.

⁴ PM Emission Rate (lb/hour) = PM Emission rate (lb/day) ÷ 24 hr/day

⁵ Calculated as follows: tons/Hour = tons/day ÷ 24 hr/day

Rule 4301 Fuel Burning Equipment

Pursuant to section 2.0, the provisions of this rule apply to any piece of fuel burning equipment. Section 3.1 defines fuel burning equipment as “any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer”.

IC engines produce power mechanically, not by indirect heat transfer. Therefore, the two cogeneration IC engines do not meet the definition of fuel burning equipment and Rule 4301 requirements do not apply to the IC engines in this project.

The two boilers and the process heater are subject to the requirements of District Rule 4301. As shown in the table below, these units comply with the lb/hr limits of District Rule 4301.

District Rule 4301 Limits			
Pollutant	NO ₂	Total PM	Sulfur (as SO ₂)
N-9141-1-0 Boiler #1	0.15	0.08	0.07
N-9141-2-0 Boiler #2	0.15	0.08	0.07
N-9141-5-0 Process Heater	0.19	0.09	0.09
Rule Limit (lb/hr)	140	10	200

This rule also limits combustion contaminants to ≤ 0.1 gr/scf @ 12%CO₂. Units fired on natural gas are expected to be in compliance with the 0.1 gr/scf limit.

Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

The boilers and process heater are potentially subject to District Rule 4304 requirements. This rule includes tune-up requirements for boilers, process heaters, and steam generators. For units where the operator is performing monthly monitoring using a portable analyzer, tune-ups are not required. The applicant has chosen to monitor emissions monthly using a portable analyzer for each unit. Therefore, compliance with Rule 4304 is not required and no further analysis is necessary.

Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

The boilers and process heater are natural gas-fired units rated greater than 5 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4305, the boiler is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*.

Additionally, the boilers and process heater are subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Since the emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305

Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase 3

The natural gas-fired boilers and process heater are subject to District Rule 4306 requirements pursuant to Section 2.0 of District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*.

Additionally, these units are subject to District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

Each of the natural gas-fired boilers, N-9141-1-0 and -2-0, and the indirect-fired process heater, N-9141-5-0, are subject to District Rule 4320 requirements pursuant to Section 2.0 of District Rule 4320.

Section 5.2, NO_x and CO Emissions Limits

Section 5.2 requires these units to not exceed the limits specified in the following table. All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen.

Since each unit is rated greater than 20 MMBtu/hr, the applicable emission limit category is Section 5.2, Table 1, Category B, from District Rule 4320.

Rule 4320 Emissions Limits		
Category	Operated on gaseous fuel	
	NO _x Limit	CO Limit
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through G units	7 ppmv or 0.008 lb/MMBtu	400 ppmv

Each of the proposed units will be limited to 5 ppmvd NO_x and 100 ppmvd CO, both @ 3% O₂.

N-9141-1-0: Natural Gas-Fired Boiler #1

The following condition will be included on the Authority to Construct permit:

- *Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*

N-9141-2-0: Natural Gas-Fired Boiler #2

The following condition will be included on the Authority to Construct permit:

- *Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*

N-9141-5-0: Indirect-Fired Milk Dryer and Drying Chamber Served by a Baghouse

The following condition will be included on the Authority to Construct permit:

- *Emissions from this process heater shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O₂ (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306 and 4320]*

Section 5.3, Annual Fee Calculation

Annual Fees are required if the unit will not be meeting the emission limits in Section 5.2 of this rule. Since the proposed units will meet the emissions limits of Section 5.2, the annual fee requirements are not applicable.

Section 5.4, Particulate Matter Control Requirements

Section 5.4.1 of this rule requires the operator to comply with one of the following requirements:

1. Fire the boiler/process heater exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
2. Limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet;

3. Install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂;

Each unit will be fired exclusively on PUC-quality natural gas.. Therefore, this requirement has been satisfied.

Section 5.5, Low Use

Each unit's annual heat input will exceed the 1.8 billion Btu heat input per calendar year criteria limit addressed by this section. Since the units are not subject to Section 5.5, the requirements of this section do not apply to these units.

Section 5.6, Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during startup or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5. The applicant has not requested any relief from the Rule 4320 emission limits during start-up or shutdown; therefore, no start-up or shutdown provisions will be included on the permits.

Section 5.7, Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 emissions limits shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO_x, CO and O₂, or install and maintain APCO-approved alternate monitoring.

The facility has proposed to use a pre-approved alternate monitoring scheme to satisfy the requirements of this section. The following conditions will be included on Authorities to Construct N-9141-1-0, '-2-0, and '-5-0:

- *The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]*
- *If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after one hour of operation after detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may*

fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]

- *All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]*
- *The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]*

Since the units are not subject to the requirements listed in Section 5.5.1 or 5.5.2, they are also not subject to Section 5.7.2 and 5.7.3 requirements.

Section 5.7.4 allows units operated at seasonal sources and subject to 40 CFR 60 Subpart DB to install a parametric monitoring system in lieu of a CEMS. The proposed units are not operated at a seasonal source. Therefore, these units are not subject to 5.7.4 requirements.

Section 5.7.6 outlines requirements for monitoring SO_x emissions. The following condition will be included on Authorities to Construct N-9141-1-0, '-2-0, and '-5-0.

- *Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]*

Section 6.1, Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate non-compliance with the applicable requirements of this rule shall constitute a violation of this rule. The following condition will be included on Authorities to Construct N-9141-1-0, '-2-0, and '-5-0.

- *All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320]*

Section 6.1.2 requires that the operator of a unit subject to Section 5.5 shall record the amount of fuel use at least on a monthly basis. Since the units are not subject to the requirements listed in Section 5.5, they are not subject to this recordkeeping requirement.

Section 6.1.3 requires that the operator of a unit subject to Section 5.5.1 or 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics have been performed. The units are not subject to Sections 5.5.1 or 6.3.1. Therefore, this recordkeeping requirement is not applicable.

Section 6.1.4 requires that the operator of a unit with startup or shutdown provisions keep records of the duration of the startup or shutdowns. The facility is not requesting any start-up or shutdown relief for emission limits. Therefore, this recordkeeping requirement is not applicable.

Section 6.1.5 requires that the operator of a unit fired on liquid fuel during PUC-quality natural gas curtailment periods record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period. These units are not fired on liquid fuel during PUC curtailment. Therefore, this section does not apply.

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO _x	ppmv	EPA Method 7E or ARB Method 100
NO _x	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O ₂	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	N/A	EPA Method 2
Stack Gas Moisture Content	N/A	EPA Method 4

The following permit conditions will be listed on Authorities to Construct N-9141-1-0, '-2-0, and '-5-0:

- *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 Rule 1081]*
- *NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]*
- *CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]*

- *Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]*
- *Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320]*
- *Stack gas moisture content shall be determined using EPA Method 4. [District Rules 4305, 4306, and 4320].*

Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every twelve months. Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

The following permit conditions will be listed on Authorities to Construct N-9141-1-0, '-2-0, and '-5-0:

- *Source testing to measure NO_x and CO emissions from the boiler/process heater shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320]*
- *Source testing to measure NO_x and CO emissions from the boiler/process heater shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 4305, 4306, and 4320]*
- *The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]*

Conclusion

Compliance with District Rule 4320 requirements is expected.

Rule 4351 Boilers, Steam Generators, and Process Heaters – Phase 1

This rule applies to boilers, steam generators, and process heaters at NO_x Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. This facility will not be a NO_x Major Source; therefore, this rule is not applicable.

Rule 4701 Internal Combustion Engines - Phase 1

The cogeneration engines are subject to the requirements of District Rule 4702, which are more stringent than the requirements for District Rule 4701. Therefore, compliance with the requirements of District Rule 4702 ensures compliance with District Rule 4701 requirements.

Rule 4702 Stationary Internal Combustion Engines - Phase 2

Section 1.0, Purpose:

The purpose of this rule is to limit the emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

Section 2.0, Applicability:

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower. Each of the new cogeneration engines, N-9141-3-0 and '4-0, are subject to the requirements of this rule.

Section 5.0, Emission Limits:

A full-time non-agricultural lean-burn IC engine must meet the following limits per Table 2 of Rule 4702:

NO_x: 11 ppmvd @ 15% O₂
CO: 2,000 ppmvd @ 15% O₂
VOC: 750 ppmvd @ 15% O₂

As shown earlier in this evaluation, the NO_x, CO, and VOC emission rates for the engines are equal to 2 ppmvd NO_x, 8 ppmvd CO, and 7 ppmvd VOC, each referenced to 15% O₂. Therefore, compliance with this requirement is expected.

Section 5.7, Sulfur Oxides Emission Control Requirements:

Section 5.7 states that non-agricultural spark-ignited engines must meet one of the following requirements:

1. Operate the engine exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases; or
2. Limit gaseous fuel sulfur content to no more than five grains of total sulfur per on hundred standard cubic feet; or
3. Use California Reformulated Gasoline for gasoline-fired spark-ignited engines; or
4. Use California Reformulated Diesel for compression-ignited engines; or
5. Operate the engine on liquid fuel that contains no more than 15 ppm sulfur, as determined by the test method specified in Section 6.4.6; or
6. Install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight as determined by the test method specified in Section 6.4.6.

The proposed engines are only fired on PUC-quality natural gas; therefore, compliance with the sulfur oxide emission control requirements is expected.

Section 5.8, Monitoring Requirements:

Section 5.8.1 requires engines equipped with an external control device to either install, operate, and maintain continuous monitoring equipment for NO_x, CO, and oxygen, or to install, operate, and maintain APCO-approved alternate monitoring. The proposed engines are equipped with a selective catalytic reduction system and oxidation catalyst, and the applicant is proposing to perform monthly alternative monitoring with a portable analyzer. The following conditions will be included on Authorities to Construct N-9141-3-0 and '4-0:

- *The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ concurrently at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]*
- *The permittee shall monitor and record the stack concentration of NH₃ at least once every calendar quarter (in which a source test is not performed). NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 2201]*
- *If either the NO_x, CO, or NH₃ concentrations corrected to 15% O₂, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4701 and 4702]*

- {3787} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4701 and 4702]
- The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x, CO, and NH₃ concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4701 and 4702]

Section 5.8.2 is only applicable to engines that are not subject to Section 5.8.1. These engines are subject to section 5.8.1; therefore, Section 5.8.2 is not applicable.

Section 5.8.3 requires the owner/operator to submit and receive approval from the APCO for each engine with an alternative monitoring system, adequate verification of the alternative monitoring system's applicability. This would include data demonstrating the system's accuracy under typical operating conditions for the specific application and any other information or data deemed necessary in assessing the acceptability of the alternative monitoring system. These engines are not equipped with "alternative monitoring systems". Rather, the facility has proposed to take direct exhaust readings with a District-Approved portable analyzer. Therefore, this requirement is not applicable.

Section 5.8.4 is applicable to units equipped with CEMS. The applicant is not proposing to use a CEMS for these units; therefore, this requirement is not applicable.

Section 5.8.5 states that the operator must have the data gathering and retrieval capabilities of an installed monitoring system described in Section 5.8 approved by the APCO. The applicant has not proposed to utilize an alternative monitoring system; rather, they are using District-Approved portable analyzers to directly measure emissions. Therefore, this requirement is not applicable.

Section 5.8.6 requires the operator/owner to install and operate a non-resettable elapsed operating time meter on each engine. In lieu of installing a non-resettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Stationary Equipment Registration condition. The owner of the engines shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included Authorities to Construct N-9141-3-0 and '-4-0:

- This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702]

Section 5.8.7 requires the facility to submit an Inspection and Monitoring (I&M) plan for each engine. The facility submitted an I&M plan with their ATC application. Therefore, this requirement has been satisfied.

Section 5.8.8 states that for each engine, the operator/owner must collect data through the I&M plan in a form approved by the APCO. This requirement will be satisfied.

Sections 5.8.9 and 5.8.10 lists requirements for quarterly portable analyzer monitoring. The conditions written earlier in this evaluation for the alternate monitoring plan ensure compliance with the requirements of Sections 5.8.9 and 5.8.10.

Section 5.8.11 is only applicable to units for which an alternative emission control plan has been submitted pursuant to Section 8.0 of this Rule. The proposed engines are not subject to the requirements of Section 5.8.11.

Section 5.10, SOx Emissions Monitoring Requirements:

Section 5.10.1 lists monitoring requirements for units complying with the SOx emission limits using Sections 5.7.2, 5.7.5, or 5.7.6. These units comply with this requirement by using PUC-quality natural gas (Section 5.7.1). Therefore, the SOx emission monitoring requirements are not applicable to these engines.

Section 6.2, Recordkeeping:

Section 6.2.1 requires that the following records be maintained for at least five years, and be made available to the APCO upon request:

1. Total hours of operation.
2. The type of fuel used.
3. Maintenance or modifications performed,
4. Monitoring data,
5. Compliance source test results, and
6. Any other information necessary to demonstrate compliance with this rule.

The following condition will be included on Authority to Construct permits N-9141-3-0 and -4-0:

- *The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]*

Section 6.3, Compliance Testing, and Section 6.4, Test Methods

Section 6.3.2 states that the engines must be tested upon startup, and at least once every 24 months thereafter.

Section 6.3.3 states that source testing must be conducted with the engines operating at conditions representative of normal source testing. For the purpose of determining compliance, the arithmetic average of three 30-consecutive minute test runs shall apply. If two of the three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15 percent oxygen.

Section 6.4 requires the use of the following test methods:

1. Oxides of nitrogen – EPA Method 7E, or ARB Method 100.
2. Carbon monoxide – EPA Method 10, or ARB Method 100.
3. Stack gas oxygen – EPA Method 3 or 3A, or ARB Method 100.
4. Volatile Organic Compounds – EPA Method 25A or 25B, or ARB Method 100.

The following conditions will be included on Authorities to Construct N-9141-3-0 and -4-0:

- *Source testing to measure NOx, CO, VOC, PM10 and NH3 emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 4701 and 4702]*
- *Source testing to measure NOx, CO, VOC, and NH3 emissions from this unit shall be conducted at least once every 24 months. [District Rules 4701 and 4702]*
- *Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]*
- *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. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]*
- *{3210} The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081, 4701, and 4702]*
- *Source testing for ammonia slip shall be conducted utilizing BAAQMD method ST-1B. [District Rule 1081]*
- *{109} 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 Rule 1081]*
- *{110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]*

Section 6.5, Inspection and Monitoring (I&M) Plan

Section 6.5.1.1 states that engines equipped with an exhaust control device are subject to District Rule 4702 I&M plan requirements. The proposed engines are each equipped with an SCR/Oxidation Catalyst system. Therefore, the I&M plan requirements apply to the two engines.

Section 6.5.2 states that the I&M plan must include procedures requiring the operator to establish ranges for control equipment parameters, engine operating parameters, and engine exhaust oxygen concentrations that source testing has shown result in pollutant concentrations within the limits. The manufacturer of the engine and control device has stated that the engine and control device is equipped with systems that continuously monitor and adjust the engine tuning, SCR tuning in an active control method. Sensors in the exhaust measure key parameters at the exhaust of the engine, the inlet to the catalyst unit, and the outlet of the catalyst unit.

The LEAN-NO_x controller in the engine is allowed to self-adjust (to preset limits) based on exiting exhaust parameters. If the adjustment limit is reached, the engine will alarm and the engine controller starts an auto shutdown sequence for the generator.

The SCR injection control system is allowed to self-adjust (to preset limits) based on entering and exiting exhaust parameters for the catalyst system. If the adjustment limit is reached, this controller sends an alarm to the engine controller, and the engine controller starts an auto shutdown sequence for the generator.

Section 6.5.3 states that the I&M plan must include procedures for monthly inspections, as approved by the APCO. The facility has stated that they will submit written procedures for the monthly inspections prior to operation of the engine.

Section 6.5.4 states that the I&M plan must include procedures for corrective actions on the noncompliant parameter(s) that the operator will take when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust parameters. The applicant states that if either the NO_x or CO concentrations, corrected to 15% O₂ as measured by the portable analyzer, exceed the allowable emission concentration, the operator will return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. Additionally, if either the exhaust emission controls prior to (or after) the SCR are unable to auto correct and/or have reached auto-adjustment limits, then the engine controller will shut down the generator unit within 10 minutes. The operator will correct the issue and return the unit to normal operation.

Section 6.5.5 states that the I&M plan must include procedures for the operator to notify the APCO when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and the engine exhaust concentrations. The facility is proposing to follow the same procedures for notifying the APCO as found in their alternate monitoring scheme.

Section 6.5.6 states that the I&M plan must include procedures for preventative and corrective maintenance performed for the purpose of maintaining an engine in proper operating condition. The facility is proposing to follow GE/Jenbacher's written procedures and schedules specified in the J612-620 Maintenance Manual.

Section 6.5.7 states that the I&M plan must include the procedures and schedule for using a portable NOx analyzer to take NOx emission readings. The facility is proposing to take quarterly NOx readings, as outlined earlier in their alternate monitoring scheme.

Section 6.5.8 states that the I&M plan must include procedures for collecting and recording data and other information for data collected through the I&M plan and the alternate monitoring systems described earlier in this evaluation. The facility is proposing to provide the procedures for collecting and recording data prior to operation of the engine.

Section 6.5.9 outlines the requirements for revising an I&M plan. The facility is proposing to comply with these requirements.

The following additional conditions will be included on Authorities to Construct N-9141-3-0, and '4-0 to ensure compliance:

- *{3202} This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]*
- *{3212} The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]*
- *The engine shall be equipped with both a LEAN-NOx controller and a SCR injection control system. The control systems shall monitor key operating parameters as identified by the manufacturer, shall self-adjust, and shall include an alarm system that starts an auto shutdown sequence of the generator if an adjustment limit is reached for either controller. [District Rule 4702]*
- *Prior to operating the engine, the permittee shall provide written procedures for monthly inspections to the District pursuant to the engine I&M plan. [District Rule 4702]*
- *Permittee shall perform preventative and corrective maintenance as specified in the GE/Jenbacher J612-620 Maintenance Manual. [District Rule 4702]*
- *Prior to operating the engine, the permittee shall provide the District with the procedures they will use to collect and record data collected through the I&M plan. [District Rule 4702]*

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\begin{aligned}\text{Volume SO}_2 &= (n \times R \times T) \div P \\ n &= \text{moles SO}_2 \\ T \text{ (standard temperature)} &= 60^\circ\text{F or } 520^\circ\text{R} \\ R \text{ (universal gas constant)} &= \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}\end{aligned}$$

The boilers, process heater, and engines are all fired on PUC-quality natural gas. The following analysis demonstrates that these units will comply with the sulfur compound limit of Rule 4801.

$$\frac{0.00285 \text{ lb-SO}_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 1.97 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 1.97 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$$

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 City of Turlock (City) is the public agency having principal responsibility for approving the project. As such, the City 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. Issue Authorities to Construct N-9141-1-0 through '10-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix I.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Previous Annual Fee
N-9141-1-0	3020-02-H	24.492 MMBtu/hr Boiler	N/A
N-9141-2-0	3020-02-H	24.492 MMBtu/hr Boiler	N/A
N-9141-3-0	3020-08-C ⁶	2,652 kW Electrical Generation	N/A
N-9141-4-0	3020-08-C ⁵	2,652 kW Electrical Generation	N/A
N-9141-5-0	3020-02-H ⁷	24.492 MMBtu/hr Process Heater	N/A
N-9141-6-0	3020-01-C	50 Electric Horsepower	N/A
N-9141-7-0	3020-01-D	100 Electric Horsepower	N/A
N-9141-8-0	3020-01-A	5 Electric Horsepower	N/A
N-9141-9-0	3020-06	Miscellaneous	N/A
N-9141-10-0	3020-01-C	84.5 Electric Horsepower	N/A

Appendices

- I: Draft Authorities to Construct
- II: Top Down BACT Analysis for Boilers and Process Heater (N-9141-1, '-2, and '-5)
- III: BACT Guideline and Top-Down BACT Analysis for Fossil-Fuel Fired IC Engines
- IV: BACT Guideline and Top-Down BACT Analysis for PM10 from Milk Drying Operations (N-9141-5 and '-6)
- V: Risk Management Review and Ambient Air Quality Analysis Results
- VI: Quarterly Net Emissions Change Calculations

⁶ The electric generation fee schedule results in a higher fee than the fee schedule for internal combustion engines. Therefore, the electric generation fee schedule will be used for the IC engine cogeneration plant.

⁷ The fee schedule for fuel burning equipment results in a higher fee than the electric motor horsepower fee schedule. Therefore, the fuel burning equipment fee schedule is applicable to the milk dryer.

APPENDIX I

Draft Authorities to Construct

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-9141-1-0

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE
MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

24.492 MMBTU/HR CLEAVER BROOKS CBEX ELITE BOILER EQUIPPED WITH A CLEAVER BROOKS CBEX ELITE ULTRA-LOW NOX NATURAL GAS-FIRED BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER (BOILER #1)

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48(c)(g)]
6. This boiler shall only be fired on PUC-quality natural gas. [District Rule 2201]
7. Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O2 (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O2 (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O2 (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306, and 4320]
8. Source testing to measure NOx, and CO emissions from the boiler shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306 and 4320]

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

Arnaud Marjollet, Director of Permit Services

N-9141-1-0 - Aug 6 2016 9:05AM - HARA00RJ - Joint Inspection NOT Required

9. Source testing to measure NO_x and CO emissions from the boiler shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 4305, 4306 and 4320]
10. {109} 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 Rule 1081]
11. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
12. {4346} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
13. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320]
14. {4348} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]
15. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320]
16. Stack gas moisture content shall be determined using EPA Method 4. [District Rules 4305, 4306, and 4320]
17. {4350} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]
18. {4351} 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. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320]
19. {4352} 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 Rules 4305, 4306 and 4320]
20. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
21. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after one hour of operation after detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
22. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

23. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
24. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]
25. Owner/operator shall maintain monthly records of the type and quantity of fuel combusted by the boiler. [District Rule 2201 and 40 CFR 60.48(c)(g)]
26. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201, 4306, 4306, and 4320]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-2-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

24.492 MMBTU/HR CLEAVER BROOKS CBEX ELITE BOILER EQUIPPED WITH A CLEAVER BROOKS CBEX ELITE ULTRA-LOW NOX NATURAL GAS-FIRED BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER (BOILER #2)

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48(c)(g)]
6. This boiler shall only be fired on PUC-quality natural gas. [District Rule 2201]
7. Emissions from this boiler shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O2 (equivalent to 0.0062 lb-NOx/MMBtu), 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 200 ppmvd CO @ 3% O2 (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O2 (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306, and 4320]
8. Source testing to measure NOx, and CO emissions from the boiler shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306 and 4320]

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.

Sayed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-9141-2-0, Aug 8 2015 9:05AM - HARADERJ - Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

9. Source testing to measure NOx and CO emissions from the boiler shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 4305, 4306 and 4320]
10. {109} 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 Rule 1081]
11. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
12. {4346} NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
13. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320]
14. {4348} Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]
15. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320]
16. Stack gas moisture content shall be determined using EPA Method 4. [District Rules 4305, 4306, and 4320]
17. {4350} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]
18. {4351} 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. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320]
19. {4352} 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 Rules 4305, 4306 and 4320]
20. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
21. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after one hour of operation after detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
22. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

23. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
24. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]
25. Owner/operator shall maintain monthly records of the type and quantity of fuel combusted by the boiler. [District Rule 2201 and 40 CFR 60.48(c)(g)]
26. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201, 4306, 4306, and 4320]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-3-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

COGENERATION PLANT #1 CONSISTING OF A 3681 BHP NATURAL GAS FIRED GE JENBACHER J616 GS-F02 LEAN-BURN INTERNAL COMBUSTION ENGINE POWERING AN ELECTRICAL GENERATOR. THE ENGINE IS SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM AND AN OXIDATION CATALYST

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702]
6. This engine shall only be fired on PUC-quality natural gas. [District Rule 2201]
7. Emissions from the engine shall not exceed any of the following limits: 2 ppmvd NOx @ 15% O2 (equivalent to 0.024 g-NOx/bhp-hr), 0.0094 g-SOx/bhp-hr, 0.02 g-PM10/bhp-hr, 8 ppmvd CO @ 15% O2 (equivalent to 0.068 g-CO/bhp-hr), 7 ppmvd VOC @ 15% O2 (equivalent to 0.034 g-VOC/bhp-hr), and 5 ppmvd NH3 @ 15% O2 (equivalent to 0.017 g-NH3/bhp-hr). [District Rules 2201, 4701 and 4702]
8. Source testing to measure NOx, CO, VOC, PM10, and NH3 emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 4701 and 4702]

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

Arnaud Marjolle, Director of Permit Services

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9. Source testing to measure NO_x, CO, VOC, and NH₃ emissions from this unit shall be conducted at least once every 24 months. [District Rules 4701 and 4702]
10. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]
11. 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. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]
12. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, PM₁₀ - EPA Method 201a and 202, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081, 4701, and 4702]
13. Source testing for ammonia slip shall be conducted utilizing BAAQMD method ST-1B. [District Rule 1081]
14. {109} 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 Rule 1081]
15. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
16. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ concurrently at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]
17. The permittee shall monitor and record the stack concentration of NH₃ at least once every calendar quarter (in which a source test is not performed). NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 2201]
18. If either the NO_x, CO, or NH₃ concentrations corrected to 15% O₂, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4701 and 4702]
19. {3787} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
20. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x, CO, and NH₃ concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4701 and 4702]

CONDITIONS CONTINUE ON NEXT PAGE

21. {3202} This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
22. {3212} The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]
23. The engine shall be equipped with both a LEAN-NOx controller and a SCR injection control system. The control systems shall monitor key operating parameters as identified by the manufacturer, shall self-adjust, and shall include an alarm system that starts an auto shutdown sequence of the generator if an adjustment limit is reached for either controller. [District Rule 4702]
24. Prior to operating the engine, the permittee shall provide written procedures for monthly inspections to the District pursuant to the engine I&M plan. [District Rule 4702]
25. Permittee shall perform preventative and corrective maintenance as specified in the GE/Jenbacher J612-620 Maintenance Manual. [District Rule 4702]
26. Prior to operating the engine, the permittee shall provide the District with the procedures they will use to collect and record data collected through the I&M plan. [District Rule 4702]
27. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]
28. 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 4701 and 4702]
29. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-4-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

COGENERATION PLANT #2 CONSISTING OF A 3681 BHP NATURAL GAS FIRED GE JENBACHER J616 GS-F02 LEAN-BURN INTERNAL COMBUSTION ENGINE POWERING AN ELECTRICAL GENERATOR. THE ENGINE IS SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM AND AN OXIDATION CATALYST

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702]
6. This engine shall only be fired on PUC-quality natural gas. [District Rule 2201]
7. Emissions from the engine shall not exceed any of the following limits: 2 ppmvd NOx @ 15% O2 (equivalent to 0.024 g-NOx/bhp-hr), 0.0094 g-SOx/bhp-hr, 0.02 g-PM10/bhp-hr, 8 ppmvd CO @ 15% O2 (equivalent to 0.068 g-CO/bhp-hr), 7 ppmvd VOC @ 15% O2 (equivalent to 0.034 g-VOC/bhp-hr), and 5 ppmvd NH3 @ 15% O2 (equivalent to 0.017 g-NH3/bhp-hr). [District Rules 2201, 4701 and 4702]
8. Source testing to measure NOx, CO, VOC, PM10, and NH3 emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 4701 and 4702]

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

Arnaud Marjollet, Director of Permit Services

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9. Source testing to measure NO_x, CO, VOC, and NH₃ emissions from this unit shall be conducted at least once every 24 months. [District Rules 4701 and 4702]
10. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]
11. 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. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]
12. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, PM₁₀ - EPA Method 201a and 202, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081, 4701, and 4702]
13. Source testing for ammonia slip shall be conducted utilizing BAAQMD method ST-1B. [District Rule 1081]
14. {109} 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 Rule 1081]
15. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
16. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ concurrently at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]
17. The permittee shall monitor and record the stack concentration of NH₃ at least once every calendar quarter (in which a source test is not performed). NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 2201]
18. If either the NO_x, CO, or NH₃ concentrations corrected to 15% O₂, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4701 and 4702]
19. {3787} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
20. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x, CO, and NH₃ concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4701 and 4702]

CONDITIONS CONTINUE ON NEXT PAGE

21. {3202} This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
22. {3212} The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]
23. The engine shall be equipped with both a LEAN-NOx controller and a SCR injection control system. The control systems shall monitor key operating parameters as identified by the manufacturer, shall self-adjust, and shall include an alarm system that starts an auto shutdown sequence of the generator if an adjustment limit is reached for either controller. [District Rule 4702]
24. Prior to operating the engine, the permittee shall provide written procedures for monthly inspections to the District pursuant to the engine I&M plan. [District Rule 4702]
25. Permittee shall perform preventative and corrective maintenance as specified in the GE/Jenbacher J612-620 Maintenance Manual. [District Rule 4702]
26. Prior to operating the engine, the permittee shall provide the District with the procedures they will use to collect and record data collected through the I&M plan. [District Rule 4702]
27. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]
28. 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 4701 and 4702]
29. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-5-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

MILK DRYING OPERATION WITH A 30.4 MMBTU/HR EXOTHERMICS PRJ291019954 INDIRECT-FIRED PROCESS HEATER WITH AN ULTRA-LOW NOX ECLIPSE MINNOX 8250 CCS-T BURNER SYSTEM, AND A MILK DRYING CHAMBER WITH PARTICULATE EMISSIONS SERVED BY A 69,681 CFM GEA PROCESS ENGINEERING TRC-7000-240-1098 BAGHOUSE

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the baghouse shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The baghouse 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. {3457} The baghouse shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
7. {120} The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
8. Material removed from the baghouse shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Sayed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

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9. {3458} Replacement bags numbering at least 10% of the total number of bags in the baghouse shall be maintained on the premises. [District Rule 2201]
10. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48(c)(g)]
11. This process heater shall only be fired on PUC-quality natural gas. [District Rule 2201]
12. Emissions from the process heater shall not exceed any of the following limits: 5 ppmvd NO_x @ 3% O₂ (equivalent to 0.0062 lb-NO_x/MMBtu), 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu), and 10 ppmvd VOC @ 3% O₂ (equivalent to 0.004 lb-VOC/MMBtu). [District Rules 2201, 4305, 4306, and 4320]
13. The throughput for the milk dryer shall not exceed 203 tons of dried milk in any one day. [District Rule 2201]
14. PM₁₀ emissions from the milk drying chamber served by a baghouse shall not exceed 0.212 lb/ton of dried milk produced. [District Rule 2201]
15. Source testing to measure NO_x and CO emissions from the process heater shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306 and 4320]
16. Source testing to measure NO_x and CO emissions from the boiler/process heater shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 4305, 4306 and 4320]
17. Source testing to measure PM₁₀ emissions from the exhaust of the baghouse serving the milk drying chamber shall be conducted within 60 days of initial start-up. [District Rule 2201]
18. {109} 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 Rule 1081]
19. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
20. {4346} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
21. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320]
22. {4348} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]
23. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320]
24. Stack gas moisture content shall be determined using EPA Method 4. [District Rules 4305, 4306, and 4320]
25. Source testing to measure PM₁₀ emissions from the exhaust of the baghouse serving the milk drying chamber shall be conducted using EPA Methods 201A and 202. Alternatively, the results of a total particulate matter test using CARB Method 5 may be used to demonstrate compliance with the PM₁₀ emission limit provided the results include both the filterable (front half) and condensable (back half) particulates, and that all particulate matter is assumed to be PM₁₀. Should the permittee decide to use different test methodology, the methodology shall first be approved by the District prior to its use. [District Rule 2201]
26. {4350} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]
27. {4351} 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. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

28. {4352} 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 Rules 4305, 4306 and 4320]
29. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
30. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after one hour of operation after detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
31. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]
32. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
33. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]
34. Owner/operator shall maintain monthly records of the type and quantity of fuel combusted by the process heater. [District Rule 2201 and 40 CFR 60.48(c)(g)]
35. Permittee shall keep a daily record of the quantity of dried milk produced. [District Rule 2201]
36. {10} The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
37. The baghouse shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 12 inches water column. [District Rule 2201]
38. {3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]
39. {3464} Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 2201]
40. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201, 4306, 4306, and 4320]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-6-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE
MAILING ADDRESS: PO BOX 910

HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

POWDERED MILK VIBROFLUIDIZER SERVED BY A 13,466 CFM GEA PROCESS ENGINEERING BF-L-10-135
BAGHOUSE

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the baghouse shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The baghouse 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. {3457} The baghouse shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
7. {120} The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
8. Material removed from the baghouse shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
9. {3458} Replacement bags numbering at least 10% of the total number of bags in the baghouse shall be maintained on the premises. [District Rule 2201]

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.

Sayed Sadredin, Executive Director, APCD

Arnaud Marjollet, Director of Permit Services

N-9141-6-0: Aug 6 2015, 9:05AM - HARADERJ - Joint Inspection NOT Required

10. PM10 Emissions from the vibro fluidizer served by a baghouse shall not exceed 0.003 grains/dscf. [District Rule 2201]
11. {10} The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
12. The baghouse shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 12 inches water column. [District Rule 2201]
13. {3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]
14. {3464} Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 2201]
15. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-7-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE
MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

POWDERED MILK VACUUM CONVEYANCE SYSTEM WITH FOUR VACUUM PUMPS SERVED BY GEA VACUUM
INLINE FILTERS AND A GEA 300 BF O/L USDA FILTER SYSTEM (988 CFM)

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the dust collection system shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The dust collection system shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
6. The dust collection system cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
7. Material removed from the dust collection system shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
8. {72} A spare set of bags shall be maintained on the premises at all times. [District Rule 2201]
9. PM10 Emissions from the vacuum powder conveyance system served by inline filters and a dust collection system shall not exceed 0.0004 grains/dscf. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-9141-7-0 Aug 6 2015 8:05AM - HARADERJ Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

10. The vacuum inline filters shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
11. The vacuum inline filters shall operate at all times with a minimum differential pressure of 1 inches water column and a maximum differential pressure of 4 inches water column. [District Rule 2201]
12. Differential operating pressure shall be monitored and recorded on each day that the vacuum inline filters operate. [District Rule 2201]
13. Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 2201]
14. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-8-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE
MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:
VACUUM PUMP SERVED BY A SOLBERG VACUUM FILTER (71 CFM)

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the dust collection system shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The dust collection system shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
6. The dust collection system cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
7. Material removed from the dust collection system shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
8. {72} A spare set of bags shall be maintained on the premises at all times. [District Rule 2201]
9. PM10 Emissions from the vacuum pump served by a dust collection system shall not exceed 0.003 grains/dscf. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-9141-8-0 - Aug 8, 2015, 9:05AM - HARADERJ - Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

10. Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 2201]
11. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-9-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

SURGE HOPPER NITROGEN PURGE OPERATION SERVED BY A GEA CUSTOM VENT FILTER (52 CFM)

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the dust collection system shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The dust collection system shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
6. The dust collection system cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
7. Material removed from the dust collection system shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
8. {72} A spare set of bags shall be maintained on the premises at all times. [District Rule 2201]
9. PM10 Emissions from the surge nitrogen process served by a filter shall not exceed 0.003 grains/dscf [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-9141-9-0 Aug 6, 2018, 9:05AM - HARADERU Joint Inspection NOT Required

10. Records of all maintenance of the dust collection system, including all change outs of filter media, shall be maintained. [District Rule 2201]
11. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9141-10-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: HILMAR CHEESE COMPANY INC - TURLOCK SITE

MAILING ADDRESS: PO BOX 910
HILMAR, CA 95324

LOCATION: 3600 W CANAL ST
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:

POWDERED MILK PACKAGING OPERATION SERVED BY A 2,650 CFM DYNEQUIP DUST COLLECTOR

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} 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. [District Rule 4101]
3. Visible emissions from the baghouse shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {3457} The baghouse shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
6. {120} The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
7. Material removed from the baghouse shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
8. {3458} Replacement bags numbering at least 10% of the total number of bags in the baghouse shall be maintained on the premises. [District Rule 2201]
9. PM10 Emissions from the powdered milk packaging operation served by a dust collection system shall not exceed 0.0004 grains/dscf. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCD

Arnaud Marjollet, Director of Permit Services

N-9141-10-0 Aug 9 2015 9:05AM - HARADERJ Joint Inspection NOT Required

10. {10} The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
11. The baghouse shall operate at all times with a minimum differential pressure of 4 inches water column and a maximum differential pressure of 8 inches water column. [District Rule 2201]
12. {3463} Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]
13. {3464} Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rule 2201]
14. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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APPENDIX II

*Top-Down BACT Analysis for Boilers and Process Heater
(N-9141-1-0, '-2-0, and '-5-0)*

Top-Down BACT Analysis for Boilers (N-9141-1-0 and (N-9141-2-0) and the Process Heater (n-9141-5-0)

Each of the boilers triggers BACT for NO_x and VOC emissions. The process heater triggers BACT for NO_x, SO_x, PM₁₀, and VOC emissions

I. Step 1 - Identify All Possible Control Technologies

The current BACT has been rescinded. The District currently considers the following control options for boilers and process heaters:

NO_x

Option 1: 7 ppmvd @ 3% O₂ (Achieved in Practice)

Option 2: 5 ppmvd @ 3% O₂ (Technologically Feasible)

SO_x, PM₁₀, and VOC

Option 1: Use of PUC-Quality natural gas fuel (Achieved in Practice)

II. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options shown in Step 1.

III. Step 3 - Rank Technologies

NO_x Control Technology	Rank	Technology Classification for BACT
5 ppmvd @ 3% O ₂	1	Technologically Feasible
7 ppmvd @ 3% O ₂	2	Achieved in Practice

SO_x, PM₁₀, and VOC Control Technology	Rank	Technology Classification for BACT
Use of PUC-Quality natural gas fuel	1	Achieved in Practice

IV. Step 4 - Cost Effectiveness Analyses

The applicant is proposing the most stringent control technology listed for each pollutant. Therefore, a cost effective analysis is not required.

V. Step 5 - Select BACT

BACT is determined to be the following:

NOx

5 ppmvd @ 3% O₂

SOx, PM10, and/or VOC

Use of PUC-Quality natural gas

APPENDIX III

BACT Guideline and Top-Down BACT Analysis for Fossil-fuel Fired IC Engines

Per » B A C T » Bact Guideline.asp?category Level1=3&category Level2=3&category Level3=12&last Update=3 » 19 :

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Best Available Control Technology (BACT) Guideline 3.3.12
Last Update: 3/19/2015

Non-Agricultural Fossil Fuel-Fired IC Engines > 50 bhp**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NOx	0.07 g/bhp-hr or 5 ppmvd @ 15% O2		1. 2 ppmvd @ 15% O2 Natural Gas-Fired Turbine 2. Electric Motor (except for engines that will be used to generate electricity)
SOx	Compliance with District Rule 4702 SOx Emission Control Requirements		Electric Motor (except for engines that will be used to generate electricity)
PM10	0.06 g/bhp-hr (Total PM)***		Electric Motor (except for engines that will be used to generate electricity)
CO	1. For compression-ignited engines > 300 bhp and < or = 500 bhp: 49 ppmvd @ 15% O2 2. For compression-ignited engines > 500 bhp: 23 ppmvd @ 15% O2 3. For four stroke lean burn spark-ignited engines > 500 bhp: 47 ppmvd @ 15% O2 4. For all engines rated > or = 2,064 bhp: 33 ppmvd @ 15% O2 5. For all other engines (not included in categories 1 through 4 above): 56 ppmvd @	For all compression-ignited engines: 12 ppmvd @ 15% O2 using an oxidation catalyst	Electric Motor (except for engines that will be used to generate electricity)

	15% O ₂ or 0.6 g/bhp-hr		
VOC	1. For all compression-ignited engines: Use of an engine meeting the latest Tier standard 2. For all spark-ignited engines: 25 ppmvd @ 15% O ₂ or 0.15 g/bhp-hr	1. For all compression-ignited engines: 50 percent reduction of latest Tier standard for VOC emissions using a catalytic oxidation system. 2. For rich-burn spark-ignited engines: 12 ppmvd @ 15% O ₂ or 0.069 g/bhp-hr	Electric Motor (except for engines that will be used to generate electricity)

*** For the purposes of this determination, fossil fuels includes diesel, gasoline, natural gas, propane, kerosene, and similar hydrocarbon compounds derived from petroleum oil or natural gas. Fossil fuels also include similar synthetic fuels such as biodiesel and/or any fuel containing one or more fossil fuels. ***This total PM₁₀ emission limit is based on EPA Method 5 (front half and back half) testing, which typically yields results as much as four times higher than when using the ISO 8178 Test Method. The ISO 8178 Test Method only reports filterable (i.e. front half) emissions.*

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

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

Top-Down BACT Analysis for IC Engines (N-9141-3-0 and N-9141-4-0)

Each engine triggers BACT for NO_x, PM₁₀, and VOC emissions. BACT Guideline 3.3.12 applies to non-agricultural fossil-fuel fired IC engines.

I. Step 1 - Identify All Possible Control Technologies

BACT Guideline 3.3.12 lists the following control options for lean-burn spark-ignited engines:

NO_x

Option 1: 0.07 g/bhp-hr or 5 ppmvd @ 15% O₂ (Achieved in Practice)

Option 2: 2 ppmvd @ 15% O₂ Natural Gas-Fired Turbine (Alternate Basic Equipment)

Option 3: Electric Motor (Alternate Basic Equipment)

PM₁₀

Option 1: 0.06 g/bhp-hr of total PM (Achieved in Practice)

Option 2: Electric Motor (Alternate Basic Equipment)

VOC

Option 1: 25 ppmvd @ 15% O₂ or 0.15 g/bhp-hr (Achieved in Practice)

Option 2: Electric Motor (Alternate Basic Equipment)

II. Step 2 - Eliminate Technologically Infeasible Options

The consideration of an electric motor as alternate basic equipment is not required when the product from the engine is electricity. Since the cogeneration units in this project are there to create electricity, the consideration of the use of an electric motor is not required.

III. Step 3 - Rank Technologies

NO_x Control Technology	Rank	Technology Classification for BACT
2 ppmvd @ 15% O ₂ Natural Gas-Fired Turbine	1	Alternate Basic Equipment
0.07 g/bhp-hr or 5 ppmvd @ 15% O ₂	2	Achieved in Practice

PM10 Control Technology	Rank	Technology Classification for BACT
0.06 g/bhp-hr of total PM	1	Achieved in Practice

VOC Control Technology	Rank	Technology Classification for BACT
25 ppmvd @ 15% O ₂ or 0.15 g/bhp-hr	1	Achieved in Practice

IV. Step 4 - Cost Effectiveness Analyses

The proposed engines are limited to 2 ppmvd NO_x @ 15% O₂, equivalent to the most stringent option for NO_x. The applicant is proposing to meet the most stringent control requirement for each pollutant; therefore, a cost analysis is not required.

V. Step 5 - Select BACT

BACT is determined to be the following:

NO_x

2 ppmvd @ 15% O₂

PM10

0.06 g/bhp-hr of total PM

VOC

25 ppmvd @ 15% O₂ or 0.15 g/bhp-hr

APPENDIX IV

*BACT Guideline and Top-Down BACT Analysis for PM10 from Milk Drying
Operations (N-9141-5 and '-6)*

Per » B A C T » Bact Guideline.asp?category Level1=1&category Level2=6&category Level3=11&last Update=7 » 27 :

Back

Best Available Control Technology (BACT) Guideline 1.6.11
Last Update: 7/27/1995

Dryer - Milk Spray, > or = 20 MMBtu/hr

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Natural gas with LPG as backup fuel		
NOx	Low NOx burner fired on natural gas with LPG as backup fuel		
PM10	Baghouse and natural gas with LPG as backup fuel		
SOx	Natural gas with LPG as backup fuel		
VOC	Natural gas with LPG as backup fuel		

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

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

Top-Down BACT Analysis for Milk Drying Operations (N-9141-5-0 and N-9141-6-0)

The milk drying chamber and the vibro fluidizer each trigger BACT for PM10 emissions. BACT for NOx, PM10, and VOC emissions. BACT Guideline 1.6.11 applies to milk drying operations.

I. Step 1 - Identify All Possible Control Technologies

BACT Guideline 1.6.11 lists the following control options for milk drying operations:

PM10

Option 1: Use of a Fabric Filter Baghouse (Achieved in Practice)

II. Step 2 - Eliminate Technologically Infeasible Options

All the listed control options are technologically feasible.

III. Step 3 - Rank Technologies

PM10 Control Technology	Rank	Technology Classification for BACT
Use of a Fabric Filter Baghouse	1	Achieved in Practice

IV. Step 4 - Cost Effectiveness Analyses

A cost analysis is not required for Achieved in Practice control options.

V. Step 5 - Select BACT

BACT is determined to be the following:

PM10

Use of a Fabric Filter Baghouse

APPENDIX V

Risk Management Review and Ambient Air Quality Analysis Results

San Joaquin Valley Air Pollution Control District Risk Management Review

To: James Harader– Permit Services
 From: Kyle Melching – Technical Services
 Date: May 27, 2015
 Facility Name: Hilmar Cheese
 Location: 3600 W. Canal St., Turlock
 Application #(s): N-9141-1-0 thru 10-0
 Project #: N-1151264

A. RMR SUMMARY

RMR Summary							
Categories	NG/Steam Generator (Unit 1-0)	NG/Steam Generator (Unit 2-0)	NG ICE (Unit 3-0)	NG ICE (Unit 4-0)	NG Heater (Unit 5-0)	Project Totals	Facility Totals
Prioritization Score	0.00	0.00	0.62	0.62	0.00	1.25	<1
Acute Hazard Index	0.00	0.00	0.01	0.01	0.00	0.03	0.03
Chronic Hazard Index	0.00	0.00	0.01	0.01	0.00	0.02	0.02
Maximum Individual Cancer Risk	7.15E-08	7.0E-08	1.22E-06	1.22E-06	6.13E-09	2.59E-06	2.59E-06
T-BACT Required?	No	No	Yes	Yes	No		
Special Permit Conditions?	Yes	Yes	No	No	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 1-0 & 2-0

1. {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

Units 5-0 & 6-0

1. {1898} The baghouse 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

B. RMR REPORT

I. Project Description

Technical Services received a request on May 20, 2015, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for a milk drying plant consisting two 24.492 MMBtu/hr natural gas boilers, two 3,681 BHP NG ICE's served by a selective catalytic reduction system and an oxidation catalyst, a 30.5 MMBtu/hr NG process heater, and various other milk processing equipment.

II. Analysis

The PM₁₀ provided by the processing engineer for the milk processing equipment from units -6 to -10 was determined to contain no hazardous air contaminants since the milk powder is considered a food grade product. Toxic emissions for the proposed units were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion. Toxic emissions for this proposed engines were also calculated using 2000 AP42 emission factors for Natural Gas Fired internal combustion 4 Stroke Lean Burn Engine. The use of a catalyst reduces TACs by 89.7%. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the proposed project was greater than 1.0 (see RMR Summary Table). Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Tipton to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀. The following parameters were used for the review:

Analysis Parameters Units 1-0 & 2-0			
Source Type	Point	Nearest Receptor (m)	259
Stack Height (m)	9.14	Closest Receptor Type	Residence
Stack Diameter (m)	0.61	Project Location	Rural
Stack Exit Velocity (m/s)	14.1	NG Usage (mmscf/hr)	0.0251
Stack Exit Temperature (K)	389	NG Usage (mmscf/yr)	219.88
CO Emissions (lb/hr)	3.72	CO Emissions (lb/yr)	32,542
SO_x Emissions (lb/hr)	0.07	SO_x Emissions (lb/yr)	627
NO_x Emissions (lb/hr)	0.15	NO_x Emissions (lb/yr)	1,363
PM₁₀ Emissions (lb/hr)	0.075	PM₁₀ Emissions (lb/yr)	660

Analysis Parameters Units 3-0 & 4-0			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	7.92	Closest Receptor Type	Residence
Stack Diameter (m)	0.61	Project Location	Rural
Stack Exit Velocity (m/s)	11.85	NG Usage (mmscf/hr)	7.26E-03
Stack Exit Temperature (K)	636	NG Usage (mmscf/yr)	200.1
CO Emissions (lb/hr)	0.55	CO Emissions (lb/yr)	2,417
SO _x Emissions (lb/hr)	0.08	SO _x Emissions (lb/yr)	668
NO _x Emissions (lb/hr)	0.2	NO _x Emissions (lb/yr)	1,706
PM ₁₀ Emissions (lb/hr)	0.19	PM ₁₀ Emissions (lb/yr)	1,422

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Units Unit 5-0 (Process Heater)			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	38.7	Closest Receptor Type	Residence
Stack Diameter (m)	1.17	Project Location	Rural
Stack Exit Velocity (m/s)	4.1	NG Usage (mmscf/hr)	0.03
Stack Exit Temperature (K)	349	NG Usage (mmscf/yr)	267.18
CO Emissions (lb/hr)	4.5	CO Emissions (lb/yr)	39,413
SO _x Emissions (lb/hr)	0.09	SO _x Emissions (lb/yr)	759
NO _x Emissions (lb/hr)	0.19	NO _x Emissions (lb/yr)	1,651
PM ₁₀ Emissions (lb/hr)	0.23	PM ₁₀ Emissions (lb/yr)	2,024

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Units Unit 5-0 (Baghouse)			
Source Type	Point	Nearest Receptor (m)	259
Stack Height (m)	38.7	Closest Receptor Type	Residence
Stack Diameter (m)	2.0	Project Location	Rural
Stack Exit Velocity (m/s)	13.59	PM ₁₀ Emissions (lb/hr)	1.79
Stack Exit Temperature (K)	347	PM ₁₀ Emissions (lb/yr)	15,696

Analysis Parameters Units Unit 6-0			
Source Type	Point	Nearest Receptor (m)	259
Stack Height (m)	38.4	Closest Receptor Type	Residence
Stack Diameter (m)	2.0	Project Location	Rural
Stack Exit Velocity (m/s)	2.25	PM ₁₀ Emissions (lb/hr)	0.35
Stack Exit Temperature (K)	318	PM ₁₀ Emissions (lb/yr)	3,033

Analysis Parameters Units Unit 7-0			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	6.1	Closest Receptor Type	Residence
Stack Diameter (m)	0.15	Project Location	Rural
Stack Exit Velocity (m/s)	25.56	PM ₁₀ Emissions (lb/hr)	0.004
Stack Exit Temperature (K)	344	PM ₁₀ Emissions (lb/yr)	30

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Units Unit 8-0			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	12.8	Closest Receptor Type	Residence
Stack Diameter (m)	0.051	Project Location	Rural
Stack Exit Velocity (m/s)	16.53	PM ₁₀ Emissions (lb/hr)	0
Stack Exit Temperature (K)	344	PM ₁₀ Emissions (lb/yr)	0

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Units Unit 9-0			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	12.8	Closest Receptor Type	Residence
Stack Diameter (m)	0.1	Project Location	Rural
Stack Exit Velocity (m/s)	3.03	PM ₁₀ Emissions (lb/hr)	0.0125
Stack Exit Temperature (K)	294	PM ₁₀ Emissions (lb/yr)	110

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Units Unit 10-0			
Source Type	Point*	Nearest Receptor (m)	259
Stack Height (m)	5.3	Closest Receptor Type	Residence
Stack Diameter (m)	0.46	Project Location	Rural
Stack Exit Velocity (m/s)	7.62	PM ₁₀ Emissions (lb/hr)	0.001
Stack Exit Temperature (K)	294	PM ₁₀ Emissions (lb/yr)	11

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Values are in $\mu\text{g}/\text{m}^3$

N-1151264	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	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ^{2&3}	Pass ^{2&3}
PM _{2.5}	X	X	X	Pass ^{2&3}	Pass ^{2&3}

*Results were taken from the attached PSD spreadsheet.

¹The 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.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

³Level 2 PM₁₀ Modeling was required to show the PM₁₀ emission rates for the project were below EPA's level of significance.

III. Conclusion

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

Unit 1-0

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **7.15E-08**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

Unit 2-0

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **7.00E-08**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

Unit 3-0

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **1.22E-06**; which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **with** Toxic Best Available Control Technology (T-BACT).

Unit 4-0

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **1.22E-06**; which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **with** Toxic Best Available Control Technology (T-BACT).

Unit 5-0

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **6.13E-09**; which is less than the 1 in a million threshold. 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 the proposed unit.

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Stack Parameter Worksheet
- D. Emissions Spreadsheet
- E. Prioritization score w/ toxic emissions summary
- F. HARP Risk Report
- G. Facility Summary
- H. AAQA Summary
- I. AERMOD Non-Regulatory Checklist

APPENDIX VI

Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

$QNEC = (PE2 - PE1) \div 4$, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/year.

PE1 = Pre Project Potential to Emit for each emissions unit, lb/year.

Since these are new units, PE1 is equal to zero. Using the values from Sections VII.C.2 in the evaluation above, the QNEC can be summarized as follows:

QNEC (ATC N-9141-1-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NO _x	1,363	340.75
SO _x	627	156.75
PM ₁₀	660	165.0
CO	32,542	8,135.5
VOC	880	220.0

QNEC (ATC N-9141-2-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NO _x	1,363	340.75
SO _x	627	156.75
PM ₁₀	660	165.0
CO	32,542	8,135.5
VOC	880	220.0

QNEC (ATC N-9141-3-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NO _x	1,706	426.5
SO _x	668	167
PM ₁₀	1,422	355.5
CO	4,834	1208.5
VOC	2,417	604.25

QNEC (ATC N-9141-4-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NO _x	1,706	426.5
SO _x	668	167
PM ₁₀	1,422	355.5
CO	4,834	1208.5
VOC	2,417	604.25

QNEC (ATC N-9141-5-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NO _x	1,651	412.75
SO _x	759	189.75
PM ₁₀	16,495	4,123.75
CO	39,413	9,853.25
VOC	1,065	266.25

QNEC (ATC N-9141-6-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
PM ₁₀	3,033	758.25

QNEC (ATC N-9141-7-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
PM ₁₀	30	7.5

QNEC (ATC N-9141-8-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
PM ₁₀	16	4.0

QNEC (ATC N-9141-9-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
PM ₁₀	12	3.0

QNEC (ATC N-9141-10-0)		
Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
PM ₁₀	80	20.0