Air Quality Construction Permit

Permit Number: 19-A-515-S1

Plant Number: 70-01-004

Company: Grain Processing Corporation

Contact Person:
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Responsible Party:
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1600 Oregon Street
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Permitted Equipment

Emission Point ID: EP 318.0

Emission Unit(s) and Control Equipment:

EU ID	Description	Maximum Rated Capacity	Control Equipment Description and ID
1217.0-1217.3, 1244.1, 1244.2	GP1, #1 Gluten Flash Dryer GP1, #2 Gluten Flash Dryer GP2, #4 Gluten Flash Dryer	See condition 3	See condition 3 for emission unit and control equipment list

Equipment Location: 1600 Oregon Street
Muscatine, IA 52761

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

Project Number	Project Description	Stack Testing	Issuance Date
20-197	Decrease PM2.5 Limit for EP318.0, Increase PM2.5 Limit on GP2, #4 Gluten Flash Dryer	Yes	12/22/20

Under the Direction of the Director of the
Department of Natural Resources

PERMIT CONDITIONS

1a. Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits for EP318.0 shall not be exceeded:

Pollutant	lb/hr[1]	tons/yr[2]	Additional Limits	Reference (567 IAC)
Particulate Matter (PM) – State	11.30[3]	NA	0.1 gr/dscf[1]	23.4(7)
PM_{10}	11.30[4]	NA	NA	NAAQS
$PM_{2.5}$	5.0[5]	NA	NA	NAAQS
Opacity	NA	NA	40%[6,7]	23.3(2)"d"
Sulfur Dioxide (SO_2)	5.45[8]		500 ppm_v[1]	RACT, 23.3(3)"e"

1. The emission limit is expressed as the average of three (3) runs.
2. The emission limit is a twelve (12) month rolling total.
3. Limit requested by owner or operator in Project 17-198 to restrict potential emissions.
4. The emission limit used in facility wide PM_{10} dispersion modeling analysis that indicates predicted attainment of the PM_{10} National Ambient Air Quality Standards (NAAQS).
5. The limit for $PM_{2.5}$ emissions is established to address the "Finding of Substantial Inadequacy of Implementation Plan; Call for Iowa SIP Revision" for $PM_{2.5}$ published in the Federal Register (76 FR 9706) on February 22, 2011.
6. The emission limit is a six (6) minute average.
7. An exceedance of the indicator opacity of 10% will require the owner or operator to promptly investigate the emission unit and make corrections to operations or equipment associated with the exceedance. If exceedances continue after the corrections, the Department may require additional proof to demonstrate compliance (e.g., stack testing).
8. The SO_2 limit is established to address the nonattainment designation for a portion of Muscatine County published in the Federal Register (78 FR 47191) on August 5, 2013. The nonattainment designation is for the 1-hour SO_2 primary national ambient air quality standard promulgated by EPA in 2010 (75 FR 35519, June 22, 2010).

1b. Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits for GP1, #1 Gluten Flash Dryer (1217.0, 1217.1) and GP1, #2 Gluten Flash Dryer (1217.2, 1217.3) shall not be exceeded:

Pollutant	lb/hr[1]	tons/yr[2]	Additional Limits	Reference (567 IAC)
Volatile Organic Compounds (VOC)	NA	NA	98% Control Efficiency or 10 $ppm_{v,d}$[1,3,4]	NA

1. The emission limit is expressed as the average of three (3) runs.
2. The emission limit is a twelve (12) month rolling total.
3. The limit for VOC emissions as required by the consent order, judgment, and decree entered into between the State of Iowa and Grain Processing Corporation [Law No. CVCV020979, Iowa District Court for Muscatine County (March 27, 2014)].
4. Limit requires 98 percent control efficiency across GP1 Regenerative Thermal Oxidizer (CE1217-4) or VOC concentration of 10 $ppm_{v,d}$ at the outlet of GP2 Regenerative Thermal Oxidizer (CE1244-2) or EP318.0. Compliance with limit shall be demonstrated by measuring the inlet and outlet VOC concentration and flowrate of GP1 Regenerative Thermal Oxidizer (CE1217-4) to determine control efficiency of GP1 Regenerative Thermal Oxidizer (CE1217-4) or measuring the VOC concentration at the outlet GP1 Regenerative Thermal Oxidizer (CE1217-4) or EP318.0. Control efficiency is defined as $\left[\frac{\text{inlet m te} - \text{utlet m te}}{\text{inlet m te}}\right] x100$.

1c. Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits for GP2, #4 Gluten Flash Dryer (1244.0, 1244.1) shall not be exceeded:

Pollutant	lb/hr[1]	tons/yr[2]	Additional Limits	Reference (567 IAC)
Particulate Matter (PM) – State	5.31[3,10]	NA	NA	NA
PM_{10}	5.31[3, 10]	NA	NA	NA
$PM_{2.5}$	4.45[10]	NA	NA	NA
Sulfur Dioxide (SO_2)	4.50[5,11]	NA	90% Control Efficiency or 10 $ppm_{v,d}$[1,4,6]	NA
Hydrogen Sulfide (H_2S)	1.64[8]	NA	NA	NA
Volatile Organic Compounds (VOC)	NA	NA	98% Control Efficiency or 10 $ppm_{v,d}$[1,4,7,10]	NA
Nitrogen Oxides (NO_x)-Biogas	8.90[9]	NA	0.09 lbs/MMBtu[1,4,12]	NA
Nitrogen Oxides (NO_x)-Natural Gas		NA	0.14 lbs/MMBtu[1,4,12]	NA
Carbon Monoxide (CO)-Biogas	8.90[9]	NA	0.15 lbs/MMBtu[1,4,12]	NA
Carbon Monoxide (CO)-Natural Gas		NA	0.10 lbs/MMBtu[1,4,12]	NA

1. The emission limit is expressed as the average of three (3) runs.
2. The emission limit is a twelve (12) month rolling total.
3. Limits established to avoid PSD applicability and keep Project 90-257 minor PSD. Project 90-257 netted out of review for PM and PM_{10} using credits obtained from the shutdown of several streets in December of 1990. Any future projects that reevaluate the netting for this time period will require the facility to submit a model examining the equivalency of the increased stack emissions to be credited to road closure emissions.
4. The limit for VOC, SO_2, NOx and CO emissions as required by the consent order, judgment, and decree entered into between the State of Iowa and Grain Processing Corporation [Law No. CVCV020979, Iowa District Court for Muscatine County (March 27, 2014)].
5. The limit is based on a H_2S concentration of 6200 ppm_v in the biogas and 91.2% control efficiency for SO_2 from the wet scrubber. The limit also serves to limit SO_2 emission to avoid PSD applicability and keep Project 08-211 minor for PSD.
6. Limit requires 90 percent control efficiency across GP2 Impingent Wet Scrubber (CE1244-1) or SO2 concentration of 10 $ppm_{v,d}$ from the outlet of the GP2 Impingent Wet Scrubber (CE1244-1). Compliance with limit shall be demonstrated by measuring the SO_2 concentration and flowrate of the inlet and outlet of GP2 Impingent Wet Scrubber (CE1244-1) to determine control efficiency of the scrubber or measuring the SO_2 concentration at the outlet of the GP2 Impingent Wet Scrubber (CE1244-1). Control efficiency is defined as $[\frac{\text{inlet m te} - \text{utlet m te}}{\text{inlet m te}}] x100$.
7. Limit requires 98 percent control efficiency across GP2 Regenerative Thermal Oxidizer (CE1244-2) or VOC concentration of 10 $ppm_{v,d}$ at the outlet of GP2 Regenerative Thermal Oxidizer (CE1244-2) or EP318.0. Compliance with limit shall be demonstrated by measuring the inlet and outlet VOC concentration and flowrate of GP2 Regenerative Thermal Oxidizer (CE1244-2) to determine control efficiency of GP2 Regenerative Thermal Oxidizer (CE1244-2) or measuring the VOC concentration at the outlet GP2 Regenerative Thermal Oxidizer (CE1244-2) or EP318.0. Control efficiency is defined as $[\frac{\text{inlet m te} - \text{utlet m te}}{\text{inlet m te}}] x100$.
8. The limit for H_2S emissions is to avoid PSD applicability and keep Project 08-211 minor for PSD.
9. The limit for NOx and CO emissions is to avoid PSD applicability and keep Project 90-257 minor for PSD.
10. Limit restricts potential PM, PM_{10}, $PM_{2.5}$ and VOC emission below PSD significance levels and Project 17-198 is considered a minor modification for the purposes of PSD.
11. Limit restricts potential SO2 emissions below NA-NSR significance level and Project 17-198 is considered a minor modification for the purposes of NA-NSR.
12. Limit is for NOx and CO emissions generated from GP2, #4 Gluten Flash Dryer only, the limit does not include emissions generated from GP2 Regenerative Thermal Oxidizer (CE1244-2).

2. Compliance Demonstration(s)

Compliance Demonstration Table(s)

EP318.0

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
PM – State	Performance Testing[1]	Once Every 3 Calendar Years [3]	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M Method 202
PM_{10}	Performance Testing[1,4]	Once Every 3 Calendar Years [3]	1 hour	40 CFR 51, Appendix M, 201A with 202
$PM_{2.5}$	Performance Testing[1,5]	Once Every 3 Calendar Years [3]	1 hour	40 CFR 51, Appendix M, 201A with 202
Opacity	None	NA	1 hour	40 CFR 60, Appendix A, Method 9
SO_2	Performance Testing[1,2]	Once Every 3 Calendar Years [3]	1 hour	40 CFR 60, Appendix A, Method 6C

1. Performance testing shall be conducted at worst case emission scenario, #1, #2, and #4 Gluten Flash Dryers are operating at the same time and combusting natural gas (except for SO2 testing).
2. SO2 performance tests shall be conducted while GP2, #4 Gluten Flash Dryer is firing on biogas.
3. Performance testing for PM, PM_{10}, $PM_{2.5}$, and SO_2, shall be conducted once every 3 calendar years. After the completion of three consecutive performance tests that demonstrate compliance with PM, PM_{10}, $PM_{2.5}$, SO_2 emission limits as specified in condition 1a, the owner or operator may request to modify the performance testing frequency for PM, PM_{10}, $PM_{2.5}$, and SO_2. The next performance test for PM, PM_{10}, $PM_{2.5}$, and SO_2 shall be completed by December 31, 2022.
4. Performance testing may be conducted for total particulate matter to demonstrate compliance with PM_{10} limit as specified in permit condition 1a.
5. If performance testing using methods specified in 40 CFR 51, Appendix M, 201A with 202 are not performed due high moisture content (stack saturation) then the owner or operator shall demonstrate compliance with $PM_{2.5}$ limit as specified in permit conditions 1a and 1c by conducting methods specified in 40 CFR 60, Appendix A, Method 5 and 40 CFR 51 Appendix M Method 202. Utilizing Method 5, the filterable $PM_{2.5}$ fraction shall be determined by conducting internal particle sizing of the dried gluten product (immediately following the gluten dryers) to determine the $PM_{2.5}$ fraction of the measured total filterable particulate. Utilizing Method 202, the measured condensable fraction shall be considered all $PM_{2.5}$.

GP1, #1 Gluten Flash Dryer (1217.0, 1217.1) #2 Gluten Flash Dryer (1217.2, 1217.3)

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
VOC	Performance Testing[1,3]	Once Every 3 Calendar Years [2]	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18

1. Performance testing shall be conducted as specified in condition 1b.
2. Performance testing for VOC shall be conducted once every 3 calendar years. After the completion of three consecutive performance tests that demonstrate compliance VOC emission limits as specified in condition 1b, the owner or operator may request to modify the performance testing frequency for VOC. The next performance test for VOC shall be completed by December 31, 2022.
3. As alternative, the owner or operator may elect to demonstrate RTO control efficiency using test method 40 CFR 60, Appendix A, Method 25A.

2. Compliance Demonstration(s) (continued)

GP2, #4 Gluten Flash Dryer (1244.0, 1244.1)

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
PM – State [1]	None	NA	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M Method 202
PM_{10}[1,3]	None	NA	1 hour	40 CFR 51, Appendix M, 201A with 202
$PM_{2.5}$[1,4]	None	NA	1 hour	40 CFR 51, Appendix M, 201A with 202
SO_2[5,67]	Performance Testing[5,6,7]	Once Every 3 Calendar Years [2]	1 hour	40 CFR 60, Appendix A, Method 6C
Hydrogen Sulfide (H_2S)[1,6]	None	NA	1 hour	40 CFR 60, Appendix A, Method 15
NOx-Biogas[9]	None	NA	1 hour	40 CFR 60, Appendix A, Method 7E
NOx-Natural gas[9]	None	NA	1 hour	40 CFR 60, Appendix A, Method 7E
CO-Biogas[9]	None	NA	1 hour	40 CFR 60, Appendix A, Method 10
CO-Natural Gas[9]	None	NA	1 hour	40 CFR 60, Appendix A, Method 10
VOC[1,5,8]	Performance Testing[1,5,8]	Once Every 3 Calendar Years [2]	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18

1. Performance testing shall be conducted at the exhaust outlet of GP2 Regenerative Thermal Oxidizer (CE1244-2) or at outlet of EP318.0 while Gluten Flash Dryer #1 and #2 are not in operation.
2. Performance testing for SO_2, and VOC shall be conducted once every 3 calendar years. After the completion of three consecutive performance tests that demonstrate compliance with SO_2 and VOC emission limits as specified in condition 1c, the owner or operator may request to modify the performance testing frequency for SO_2 and VOC. The next performance test for SO_2 and VOC shall be completed by December 31, 2022.
3. Performance testing may be conducted for total particulate matter to demonstrate compliance with PM_{10} limit as specified in permit condition 1c.
4. If performance testing using methods specified in 40 CFR 51, Appendix M, 201A with 202 are not performed due to high moisture content (stack saturation) then the owner or operator shall demonstrate compliance with $PM_{2.5}$ limit as specified in permit conditions 1a and 1c by conducting methods specified in 40 CFR 60, Appendix A, Method 5 and 40 CFR 51 Appendix M Method 202. Utilizing Method 5, the filterable $PM_{2.5}$ fraction shall be determined by conducting internal particle sizing of the dried gluten product (immediately following the gluten dryers) to determine the $PM_{2.5}$ fraction of the measured total filterable particulate. Utilizing Method 202, the measured condensable fraction shall be considered all $PM_{2.5}$.
5. Performance testing shall be conducted as specified in condition 1c or at outlet of EP318.0 while Gluten Flash Dryer #1 and #2 are not in operation.
6. SO2 and H_2S performance tests shall be conducted while GP2, #4 Gluten Flash Dryer is firing on biogas.
7. During the SO_2 test, GPC shall collect a sample of the biogas being sent to the dryer during each stack test run. H_2S concentration shall be determined using a GC/FPD analysis. The H_2S concentrations determined during the SO_2 testing shall be supplied with the test reports submitted for SO_2. GPC may request different test methods in the testing protocol if alternative test methods or procedures are preferable.
8. As alternative, the owner or operator may elect to demonstrate RTO control efficiency using test method 40 CFR 60, Appendix A, Method 25A.
9. Performance testing shall be conducted at the exhaust outlet of GP2, #4 Gluten Flash Dryer or at the inlet to GP2 Regenerative Thermal Oxidizer (CE1244-2).

If an initial stack test is specified in the "Compliance Demonstration Table," the owner or the owner's authorized agent shall demonstrate compliance with the emission limitations contained in Condition 1 within the applicable time period specified below:

- Within sixty (60) days after achieving the maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment for the addition of new equipment or the physical modification of existing equipment or control equipment.
- Within ninety (90) days of the issuance of this permit if there is no physical modification to any emission units or control equipment.

If any additional stack testing beyond an initial test (i.e. quarterly, semi-annual, annual, etc.) is required in "Compliance Demonstration Table," the owner or the owner's authorized agent shall demonstrate compliance with the emission limitations contained in this condition as specified in the "Compliance Demonstration Table." See Conditions 12.A.(4) and 12.B.(5) for notification and reporting requirements.

2. Compliance Demonstration(s) (continued)

If stack testing is required, the owner or the owner's authorized agent shall use the test method and run time listed in the "Compliance Demonstration Table" unless another testing methodology is approved by the Department prior to testing.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

Per 567 IAC 25.1(7)"a", at the Department's request, a pretest meeting shall be held not later than fifteen (15) days before the owner or operator conducts the compliance demonstration. A testing protocol shall be submitted to the Department no later than fifteen (15) days before the owner or operator conducts the compliance demonstration. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. A representative of the Department shall be allowed to witness the test(s). The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

The owner shall be responsible for the installation and maintenance of test ports. The unit(s) being sampled shall be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

3. Emission Point Characteristics

The following emission unit and control equipment are vented directly or indirectly through this emission point:

Emission Unit Description	Maximum Rated Capacity	Control Equipment	
GP1 #1 Gluten Flash Dryer (EU1217.0) w/ Product Recovery Cyclone	1.35 tons of dried gluten per hour	GP1 TurboTak Spray Chamber Scrubber W/ Cyclonic Separator (CE1217-3)	GP1 Regenerative Thermal Oxidizer (CE1217-4), Maximum Heat Input: 16.5 MMBtu per hour with Low NOx Burners
GP1 #1 Gluten Flash Dryer Direct Fired Burner (EU1217.1)	16 MMBtu per hour		
GP1 #2 Gluten Flash Dryer (EU1217.2) w/Product Recovery Cyclone	1.35 tons of dried gluten per hour		
GP1 #2 Gluten Flash Dryer Direct Fired Burner (EU1217.3)	16 MMBtu per hour		
GP2 #4 Gluten Flash Dryer (EU1244.0) w/six Parallel Product Recovery Cyclones	6.13 tons of dried gluten per hour	GP2 Impingent Wet Scrubber (CE1244-1)	GP2 Regenerative Thermal Oxidizer (CE1244-2), Maximum Heat Input: 16.5 MMBtu per hour with Low NOx Burners
GP2 Low-NOx Burner (EU1244.1)	36.0 MMBtu per hour (total); 28,000 SCFH (Biogas); 36,000 SCFH (Natural Gas)		

3. Emission Point Characteristics (continued)

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height (feet from the ground)	180 Feet
Discharge Style	Vertical Unobstructed Discharge
Stack Outlet Dimensions (inches)	78 inches Diameter
Exhaust Temperature (ºF)	235 °F
Exhaust Flowrate (scfm)	102, 000 scfm

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

4. Federal Standards

A. New Source Performance Standards (NSPS):

This emission unit is not subject to any NSPS subparts at this time as there are no applicable subparts for its source category.

B. National Emission Standards for Hazardous Air Pollutants (NESHAP):

This emission unit is not subject to any NESHAP subparts at this time as there are no applicable subparts for its source category.

5. Operating Requirements with Associated Monitoring and Recordkeeping

Unless specified by a federal regulation, all records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

GP2, #4 Gluten Flash Dryer (EU 1244.0)

A. The #4 Gluten Flash Dyer shall only combust natural gas, natural gas mixed with biogas from on-site waste water treatment plant, and biogas from on-site wastewater treatment plant with combustion air.

Control Equipment- Scrubbers

B. The GP1 Turbotak Scrubber (CE1217-3) atomizing liquor flow rate shall be maintained at or above 80 gallons per minute.

i. The owner or operator shall properly operate and maintain equipment to monitor the atomizing liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

ii. The owner or operator shall collect and record the atomizing liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3), in gallons per minute, continuously. If the atomizing liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3) falls below the value specified in Condition 5B, the owner or operator shall investigate the GP1 Turbotak Scrubber (CE1217-3) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that the GP1 Turbotak Scrubber (CE1217-3) is not in operation.

C. The GP1 Turbotak Scrubber (CE1217-3) wash liquor flow rate shall be maintained at or above 650 gallons per minute.

i. The owner or operator shall properly operate and maintain equipment to monitor the wash liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the wash liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3), in gallons per minute, continuously. If the wash liquor flow rate to the GP1 Turbotak Scrubber (CE1217-3) falls below the value specified in Condition 5C, the owner or operator shall investigate the GP1 Turbotak Scrubber (CE1217-3) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that the GP1 Turbotak Scrubber (CE1217-3) is not in operation.

D. The GP2 Impingent Wet Scrubber (CE1244-1) total liquor flowrate shall be maintained at or above 500 gallons per minute.

i. The owner or operator shall properly operate and maintain equipment to monitor the total liquor flow rate to the GP2 Impingent Wet Scrubber (CE1244-1). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the total liquor flow rate to the GP2 Impingent Wet Scrubber (CE1244-1), in gallons per minute, continuously. If the total liquor flow rate to the GP2 Impingent Wet Scrubber (CE1244-1) falls below the value specified in Condition 5C, the owner or operator shall investigate the GP2 Impingent Wet Scrubber (CE1244-1) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that the GP2 Impingent Wet Scrubber (CE1244-1) is not in operation.

E. The pressure drop across GP2 Impingent Wet Scrubber (CE1244-1) shall be maintained between 6 to 12 inches of water column.

i. The owner or operator shall properly operate and maintain equipment to monitor the differential pressure drop across the GP2 Impingent Wet Scrubber (CE1244-1). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the pressure drop across the GP2 Impingent Wet Scrubber (CE1244-1), in inches of water, continuously. If the pressure drop across the GP2 Impingent Wet Scrubber (CE1244-1) falls outside the range specified in Condition 5D, the owner or operator shall investigate the GP2 Impingent Wet Scrubber (CE1244-1) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that GP2 Impingent Wet Scrubber (CE1244-1) is not in operation.

5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

F. The pH range of the scrubbing liquor in GP1 Turbotak Scrubber (CE1217-3) shall be maintained between 5 and 8.

i. The owner or operator shall properly operate and maintain equipment to monitor the scrubbing liquor pH to the GP1 Turbotak Scrubber (CE1217-3). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the scrubbing liquor pH in GP1 Turbotak Scrubber (CE1217-3), on a continuous basis. If the pH of the scrubbing liquor GP1 Turbotak Scrubber (CE1217-3) falls outside the range specified in Condition 5F, the owner or operator shall investigate GP1 Turbotak Scrubber (CE1217-3) and make corrections to GP1 Turbotak Scrubber (CE1217-3). The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that GP1 Turbotak Scrubber (CE1217-3) is not in operation.

G. The pH range of the scrubbing liquor in GP2 Impingent Wet Scrubber (CE1244-1) shall be maintained between 5 and 8.

i. The owner or operator shall properly operate and maintain equipment to monitor the scrubbing liquor pH to the GP2 Impingent Wet Scrubber (CE1244-1). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the scrubbing liquor pH in GP2 Impingent Wet Scrubber (CE1244-1), on a continuous basis. If the pH of the scrubbing liquor in GP2 Impingent Wet Scrubber (CE1244-1) falls outside the range specified in Condition 5E, the owner or operator shall investigate GP2 Impingent Wet Scrubber (CE1244-1) and make corrections to GP2 Impingent Wet Scrubber (CE1244-1). The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that GP2 Impingent Wet Scrubber (CE1244-1) is not in operation.

H. The owner or operator shall develop an operating and maintenance plan for GP1 Turbotak Scrubber (CE1217-3) and GP2 Impingent Wet Scrubber (CE1244-1), including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

i. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of the GP1 Turbotak Scrubber (CE1217-3).
ii. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of the GP2 Impingent Wet Scrubber (CE1244-1).

Control Equipment- RTOs

I. The owner or operator shall only bypass GP2 Regenerative Thermal Oxidizer (CE1244-2) for purposes of start-up, malfunction and/or maintenance for a maximum of 200 hours per twelve month rolling period. GP2 Regenerative Thermal Oxidizer (CE1244-2) shall be in operation and at the operating temperature specified in condition 5J prior to processing any product (gluten).

i. The owner or operator shall develop and implement an operating plan to ensure GP2 Regenerative Thermal Oxidizer (CE1244-2) is at the required operating temperature prior to processing any gluten in GP2 #4 Gluten Flash Dyer. The written plan and any documentation as required by the plan shall be maintained onsite and available for inspection.
ii. The owner or operator shall record the total hours and the cause of GP2 Regenerative Thermal Oxidizer (CE1244-2) bypass on a monthly basis. The owner or operator shall calculate and record the rolling 12-month totals.

5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

J. The owner or operator shall maintain a GP2 Regenerative Thermal Oxidizer (CE1244-2) combustion chamber temperature to no less than 1,600 degrees Fahrenheit based on a 3-hour block average.

i. The owner or operator shall properly operate and maintain equipment to monitor the chamber temperature of GP2 Regenerative Thermal Oxidizer (CE1244-2). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the combustion chamber temperature of GP2 Regenerative Thermal Oxidizer (CE1244-2), in °F on a continuous basis. The owner or operator shall calculate and record the 3-hour block average of the combustion chamber temperature in °F. If the 3-hour block average combustion chamber temperature of GP2 Regenerative Thermal Oxidizer (CE1244-2) falls below the value specified in Condition 5J, the owner or operator shall investigate GP2 Regenerative Thermal Oxidizer (CE1244-2) and make corrections GP2 Regenerative Thermal Oxidizer (CE1244-2). The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that GP2 Regenerative Thermal Oxidizer (CE1244-2) is not in operation.

K. The owner or operator shall only bypass GP1 Regenerative Thermal Oxidizer (CE1217-4) for purposes of start-up, malfunction and/or maintenance for a maximum of 200 hours per twelve month rolling period. GP1 Regenerative Thermal Oxidizer (CE1217-4) shall be in operation and at the operating temperature specified in condition 5L prior to processing any product (gluten).

i. The owner or operator shall develop and implement an operating plan to ensure GP1 Regenerative Thermal Oxidizer (CE1217-4) is at the required operating temperature prior to processing any gluten in GP1 #1 and #2 Gluten Flash Dyers. The written plan and any documentation as required by the plan shall be maintained onsite and available for inspection.

ii. The owner or operator shall record the total hours and the cause of GP1 Regenerative Thermal Oxidizer (CE1217-4) bypass on a monthly basis. The owner or operator shall calculate and record the rolling 12-month totals.

L. The owner or operator shall maintain a GP1 Regenerative Thermal Oxidizer (CE1217-4) combustion chamber temperature to no less than 1,600 degrees Fahrenheit based on a 3-hour block average.

i. The owner or operator shall properly operate and maintain equipment to monitor the chamber temperature of GP1 Regenerative Thermal Oxidizer (CE1217-4). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.

ii. The owner or operator shall collect and record the combustion chamber temperature of GP1 Regenerative Thermal Oxidizer (CE1217-4), in °F on a continuous basis. The owner or operator shall calculate and record the 3-hour block average of the combustion chamber temperature in °F. If the 3-hour block average combustion chamber temperature of GP1 Regenerative Thermal Oxidizer (CE1217-4) falls below the value specified in Condition 5L, the owner or operator shall investigate GP1 Regenerative Thermal Oxidizer (CE1217-4) and make corrections GP1 Regenerative Thermal Oxidizer (CE1217-4). The owner or operator shall maintain a record of all corrective actions taken. This requirement shall not apply on the days that GP1 Regenerative Thermal Oxidizer (CE1217-4) is not in operation.

M. The owner or operator shall combust only natural gas or process off-gasses in GP2 Regenerative Thermal Oxidizer (CE1244-2) and GP1 Regenerative Thermal Oxidizer (CE1217-4).

5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

N. The owner or operator shall develop an operating and maintenance plan for GP2 Regenerative Thermal Oxidizer (CE1244-2) and GP1 Regenerative Thermal Oxidizer (CE1217-4), including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

i. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of the GP2 Regenerative Thermal Oxidizer (CE1244-2).
ii. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of the GP1 Regenerative Thermal Oxidizer (CE1217-4).

Low-NOx Burner (EU1244.1)

O. The owner or operator shall tune Low-NOx Burner (EU1244.1) on an annual basis to maintain good combustion. The annual burner tune-up activity shall include at a minimum:

- Inspect the burner-Clean and replace any components, as necessary
- Inspect the flame pattern and flame dimensions-Adjust the burner as necessary to optimize the flame pattern and dimensions. The adjustment should be consistent with manufacturer's specifications, if available.
- Inspect the air-to fuel ratio control system-Ensure the control system is calibrated and functioning properly, if such a system is installed.
- Optimize emissions of carbon dioxide- Optimize emissions consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which unit may be subject.
- Verify that emissions (carbon dioxide and nitrogen oxide) and oxygen levels in the exhaust have been optimized consistent per manufactures specifications.

P. The owner or operator shall maintain record on annual basis of the following:

- The completion date of Low-NOx Burner (EU1244.1) tuning as specified in condition 5O,
- Low-NOx Burner (EU1244.1) emissions (carbon dioxide and nitrogen oxide) and oxygen levels in the exhaust have been optimized consistent per manufactures specifications.

Q. The owner or operator shall develop an operating and maintenance plan for the Low-NOx Burner (EU1244.1), including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

i. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of Low-NOx Burner (EU1244.1).

Other Requirements

R. The owner or operator shall maintain GP1 and GP2 Gluten Dryers Product Recovery Cyclones in manner to ensure proper operation.

i. The owner or operator shall maintain a record of all inspections and maintenance and any action resulting from the inspection and maintenance of the GP1 and GP2 Gluten Dryers Product Recovery Cyclones.

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6. Continuous Emission Monitoring Systems (CEMS)

Continuous emission monitoring is not required by this permit at this time.

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7. Department Review

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 35; and 40 Code of Federal Regulations (CFR) Parts 51, 52, 60, 61, and 63 and has the potential to comply. This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant or by the applicant's representative(s) shall cause this permit to be void.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The Department assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

8. Owner and Operator Responsibility

This permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. The permit holder, owner, and operator of the facility shall assure that the installation of the equipment listed in this permit conforms to the design in the application (i.e. type, maximum rated capacity, etc.). No person shall construct, install, reconstruct or alter this emission unit(s), control equipment, or emission point without the required amended permit.

Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for assuring that the installation, operation, and maintenance of the equipment listed in this permit is in compliance with the provisions of this permit and all other applicable requirements and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

9. Transferability

Unless the equipment is portable, this permit is not transferable from one location to another or from one piece of equipment to another. See Condition 12.A.(2) for notification requirements for relocating portable equipment (567 IAC 22.3(3)"f").

10. Construction

A. General Requirements:
It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted.

In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. If a proposed project is not timely completed, the owner or operator shall seek a permit amendment in order to revert back to the most recent previous version of the permit. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

This permit or amendment shall become void if any one of the following conditions occurs:
(1) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
(2) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
(3) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within a time period specified elsewhere in this permit.

B. Changes to Plans and Specifications:
The owner or operator shall amend this permit or amendment prior to startup of the equipment if:
(1) Any changes are made to the final plans and specifications submitted for the proposed project; or
(2) This permit becomes void.

Changes to the final plans and specification shall include changes to plans and specifications for permitted equipment and control equipment and the specified operation thereof.

C. Amended Permits:
The owner or operator may continue to act under the provisions of the previous permit for the affected emission unit(s) and emission point, together with any previous amendment to the permit, until one of the following conditions occurs:
(1) The proposed project authorized by this amendment is completed as it affects the emission unit(s) and emission point permitted herein; or
(2) This current amendment becomes void.

11. Excess Emissions

Per 567 IAC 24.1(1), excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one (1) six-minute period per one (1) hour period.

An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shutdown within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported by telephone, electronic mail or in person to the appropriate field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident [See Permit Condition 12.B.(1)]. A written report of an incident of excess emissions shall be submitted as a follow-up to all required initial reports within seven (7) days of the onset of the upset condition [See Permit Condition 12.B.(2)].

12. Notification, Reporting, and Recordkeeping

A. The owner or operator shall furnish the Department the following written notifications:
   (1) Per 567 IAC 22.3(3)"b":
      (a) The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration.
      (b) The actual date of startup, postmarked within fifteen (15) days following the start of operation.
   (2) Per 567 IAC 22.3(3)"f," when portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified:
      (a) At least fourteen (14) days before equipment relocation if the equipment will be located in a nonattainment area for the National Ambient Air Quality Standards (NAAQS) or a maintenance area for the NAAQS.
      (b) At least seven (7) days before equipment relocation.
   (3) Per 567 IAC 22.3(8), a new owner shall notify the Department of the transfer of equipment ownership within thirty (30) days of the occurrence. The notification shall include the following information:
      - The date of ownership change; the name, address, and telephone number of the responsible official, the contact person, and the owner of the equipment both before and after the ownership change; and the construction permit number(s) of the equipment changing ownership.
   (4) Unless specified per a federal regulation, the owner or the owner's authorized agent shall notify the Department in writing not less than thirty (30) days before a required test or performance evaluation of a continuous emission monitor [567 IAC 25.1(7)]. The notification shall include:
      - The time; the place; the name of the person who will conduct the tests; and other information as required by the Department.

      If the owner or operator does not provide timely notice to the Department, the Department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with the applicable rules or permit conditions. Upon written request, the Department may allow a notification period of less than thirty (30) days.

B. The owner or operator shall furnish the Department with the following reports:
   (1) Per 567 IAC 24.1(2), an incident of excess emissions as defined in 567 IAC 20.2 shall be reported within eight (8) hours or at the start of the first working day following the onset of the incident. The report may be made by electronic mail, in person or by telephone.
   (2) Per 567 IAC 24.1(3), a written report of an incident of excess emissions as defined in 567 IAC 20.2 shall be submitted as a follow-up to all required initial reports to the Department within seven (7) days of the onset of the upset condition.
   (3) Operation of this emission unit(s) or control equipment outside of those operating parameters specified in Permit Condition 14 in accordance to the schedule set forth in 567 IAC 24.1.
   (4) Per 567 IAC 25.1(6), the owner or operator of any facility required to install a continuous monitoring system or systems shall provide quarterly reports to the Director, no later than thirty (30) calendar days following the end of the calendar quarter, on forms provided by the Director.
   (5) Per 567 IAC 25.1(7), a written compliance demonstration report for each compliance testing event, whether successful or not, postmarked no later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met.

C. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording unless otherwise required by another applicable law (i.e. NSPS, NESHAP, etc.)

D. Information regarding this permit should be sent to the attention of the following individuals based on the type of information being submitted: change in ownership (Air Quality Bureau Records Center), permit correspondence (Construction Permit Supervisor), stack testing correspondence (Stack Test Coordinator), and reports and notifications (Compliance Unit Supervisor and DNR Field Office). The addresses are:

Air Quality Bureau Iowa Department of Natural Resources 502 E 9th Street Des Moines, IA 50319 Telephone: (515) 725-8200 Fax: (515) 725-9501	DNR Field Office 6 1023 West Madison Washington, IA 52353 Telephone: (319) 653-2135 Fax: (319) 653-2856

13. Appeal Rights

All conditions within an original permit may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. Amended conditions within a permit amendment may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

14. Permit History

GP1: Gluten Flash Dryer #1, GP1: Gluten Flash Dryer #2 and GP2: Gluten Flash Dryer #4 (EP318.0)

Permit No.	Project No.	Description	Date	Stack Testing
19-A-515	17-198	Add RTOs, Debottleneck GP2, #4 Gluten Flash Dryer	11/04/19	Yes

GP1, #1 Gluten Flash Dryer w/ Direct Fired Burner, #2 Gluten Flash Dryer W/ Direct Fired Burner (EP43.1)

Permit No.	Project No.	Description	Date	Stack Testing
75-A-087	75-087	Add Venturi and Packed Bed Scrubbers to Existing Dryers	05/06/75	Yes
75-A-087-S1	15-050	Modify Scrubbers; Add PM_{10}, $PM_{2.5}$ and SO_2 Emission Limits	12/10/15	Yes
75-A-087-S2	15-455	Install Turbotak Scrubber as Replacement Controls	05/17/16	Yes

GP2, #4 Gluten Flash Dryer w/ Gas Fired Heater (EP173.0)

Permit No.	Project No.	Description	Date	Stack Testing
91-A-067	90-257	Original Permit	04/05/91	Yes
91-A-067-S1	06-346	Increase PM/PM_{10} Allowable Emissions	12/05/06	Yes
91-A-067-S2	08-211	Allow Use of Biogas as Fuel	03/12/09	Yes
91-A-067-S3	18-448	Replacement of Low-NOx Burner	11/28/18	Yes

END OF PERMIT