MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

DOCKET #05-25

COMPANY: Perdue AgriBusiness LLC – Hurlock Feedmill

LOCATION: 37 Delaware Ave., Hurlock, MD 21643

APPLICATION: Grain Drying and Handling Facility

ITEM	DESCRIPTION
1	Notice of Application and Opportunity to Request an Informational Meeting
2	Permit to Construct Application Forms 5, 5EP, 5T, 6, 11, 28, New Source Review Analysis, Block Flow Diagrams, Site Plan, Emissions Calculations
3	Zoning Approval

DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF APPLICATION AND
OPPORTUNITY TO REQUEST AN INFORMATIONAL MEETING

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Perdue AgriBusiness LLC on April 14, 2025 for a grain drying and handling facility. The facility is located at 37 Delaware Ave., Hurlock, MD 21643.

In accordance with HB 1200/Ch. 588 of 2022, the environmental justice (EJ) Score for the census tract in which the project is located is 46.20. This score considers three demographic indicators, minority population above 50%, poverty rate above 25% and limited English proficiency above 15%, to identify underserved communities. Multiple environmental health indicators are used to identify overburdened communities.

Copies of the application, and other supporting documents are available for public inspection under Docket No. 05-25 on the Department's website here:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

A review of the submitted information will be conducted when the Department undertakes its technical review of all documents included in the application.

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Department will hold an informational meeting to discuss the application and the permit review process if the Department receives a written request for a meeting within 10 working days from the date of the second publication of this notice. A requested informational meeting will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person informational meeting is received. All requests for an informational meeting should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program by email to shannon.heafey@maryland.gov or by mail to the Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christopher R. Hoagland, Director
Air and Radiation Administration

April 11, 2025

Susan Nash
Regulatory and Compliance Engineer Sr.
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard
Baltimore MD 21203

RE: Air Quality State Construction and Operating Permit Application
Perdue Farms – Hurlock, MD

Ms. Nash:

Perdue AgriBusiness LLC (Perdue) is submitting an Air Quality State Construction and Operating Permit application to the Maryland Department of the Environment (MDE) for Perdue Farms at the Hurlock, MD facility which includes a feedmill, hatchery, and grain elevator operations.

The completed air quality PTC forms and supplemental information for the entire facility (i.e. site plans, emissions calculations, and Workman's Compensation Insurance) are included within this packet. A hard copy has been mailed to the department and an electronic PDF copy has been submitted via email. Please contact me at (410) -543-3296 if you have any questions.

Sincerely,

Jessie Long

Digitally signed by: Jessie Long
DN: CN = Jessie Long email = jessie.long@perdue.com C = AD
Date: 2025.04.11 10:34:46 -04'00'

Jessie Long
Senior Environmental Manager

cc: Jaclyn Mays, Director of Environmental Compliance and Services

Attachment:
State Construction and Operating Permit Application

AIR QUALITY STATE CONSTRUCTION AND OPERATING PERMIT APPLICATIONS
PERDUE AGRIBUSINESS LLC – HURLOCK GRAIN FACILITY

Submitted To:

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION MANAGEMENT ADMINISTRATION
AIR QUALITY PERMITS PROGRAM
1800 WASHINGTON BLVD
BALTIMORE, MD 21230

Submitted By:

PERDUE AGRIBUSINESS LLC
6909 ZION CHURCH ROAD
SALISBURY, MD 21804

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
LANGHORNE, PA

CEC Project 343-365

MARCH 2025

Civil & Environmental Consultants, Inc.
Philadelphia 370 E. Maple Avenue, Suite 304 | Langhorne, PA 19047 | p: 267-568-2300 f: 267-568-2205 | www.cecinc.com

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FACILITY DESCRIPTION

Perdue AgriBusiness LLC (Perdue) operates the Hurlock Grain, Feedmill, and Hatchery (Hurlock Complex) located at 37 Delaware Avenue, Hurlock, MD. The Feedmill and associated grain storage operation stores and processes whole grains and miscellaneous dry and liquid ingredients to make poultry feed for Perdue's Grow-out Operation and other outside manufacturers. The Hurlock Complex also includes a Hatchery which is also owned and operated by Perdue.

The Feedmill grain is received via truck or rail which are controlled by a baghouse and proposed vortex spout respectively. To manufacture poultry feed, the Feedmill utilizes additional feed ingredients that are mixed in. These additives include trace minerals, DDG, limestone, phosphorus, and soymeal. The salt and methionine additives are received via pneumatic lines which are controlled via baghouse. Additional additives are received in bags. The Feedmill operates three (3) hammermills equipped with a baghouse and two (2) pellet lines equipped with four (4) cyclones to control emissions from feed manufacturing. Steam is produced by an onsite boiler using natural gas for fuel to operate the mill equipment. Finished feed is stored onsite until it is loaded out via mechanical feed loadout which is controlled via dust sock.

On the grain side of the complex, grain is received via truck in one of two pits. Each pit is controlled via baghouse. Two (2) Grain Dryers utilizing natural gas for fuel are operated to dry all received wet grains. Grain is stored onsite until it is loaded out via rail or truck. Rail loadout is controlled via proposed vortex spout and truck loadout is controlled via dust sock.

The hatchery utilizes three (3) boilers to provide heat and three (3) emergency generators for operations. A temporary diesel engine may be brought onsite if needed.

The complex includes the sources described above which includes the following exempt sources:

- One (1) 0.65 MMBTU/hr Lochinvar Natural Gas Boiler at the Hatchery (COMAR 26.11.02.10.C.);
- One (1) 349 bhp Diesel Emergency Generator at the Hatchery (COMAR 26.11.02.10.E.);
- One (1) 148 bhp Diesel Emergency Generator at the Temporary Outdoor Grain Piles (COMAR 26.11.02.10.E.).

PERMIT APPLICATION FORMS

AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Perdue AgriBusiness LLC
COMPANY ADDRESS:	6906 Zion Church Road, Salisbury, MD 21804
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Hurlock Grain Facility
PREMISES ADDRESS:	37 Delaware Avenue, Hurlock, MD 21643
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Jessie Long
JOB TITLE:	Sr. Environmental Manager
PHONE NUMBER:	(410) 543-3296
EMAIL ADDRESS:	jessie.long@perdue.com
DESCRIPTION OF EQUIPMENT OR PROCESS	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

☒ Application package cover letter describing the proposed project

☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. _____ Form 5
No. 6 Form 5T
No. 16 Form 5EP
No. _____ Form 6
No. 13 Form 10
No. _____ Form 11
No. 1 Form 41
No. _____ Form 42
No. _____ Form 44

☐ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☒ Material balance data and all emissions calculations

☐ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.

☐ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission (1)

☐ Documentation that the proposed installation complies with local zoning and land use requirements (2)

(1) Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

(2) Required for applications subject to Expanded Public Participation Requirements.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct Registration Update X Initial Registration

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long

Digitally signed by: Jessie Long
DN: CN = Jessie Long email = jessie.long@perdue.com C = AD
Date: 2025.02.13 08:18:09 -05'00'

Jessie Long, Sr. Environmental Manager

Print Name and Title Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | MD | 21643 | (410) 943-0512
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

One (1) Feedmill including one (1) truck receiving pit controlled by a baghouse, one (1) rail receiving pit controlled by a proposed vortex spout, twenty-three (23) bulk bins, sixteen (16) micro bins, three (3) storage tanks, ten (10) finished feed bins, one (1) methionine pneumatic line controlled by a baghouse, one (1) salt pneumatic line controlled by a baghouse, one (1) mixer, three (3) hammermills controlled by a baghouse, two (2) pellet coolers controlled by four (4) cyclones, one (1) finished feed loadout controlled by a dust sock, and headhouse and handling emissions that are enclosed.

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)

Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time

6B. Number of Stack/Emission Points Associated with this Equipment 10

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility is a grain elevator, feedmill, and hatchery. Please see description of the feedmill above in number 4.

9. Control Devices Associated with this Equipment

For additional information, See Attachment D Emission Calculations

None [ ] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[X]	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[X] Describe As listed in the description above in number 4, the Feedmill includes four (4) baghouses, one (1) proposed vortex spout, four (4) cyclones, one (1) dust sock, and enclosed material handling.

24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT³	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL - TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS [ ] ANNUAL AMOUNT CONSUMED OTHER FUEL [ ] ANNUAL AMOUNT CONSUMED

(Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
[X]	[ ]	[ ]	[ ]	[ ]	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. Feedmill Ingredients				525,600	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. Feed				525,600	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: Perdue AgriBusiness LLC

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels (µg/m³)			Estimated Premises Wide Emissions of TAP			
						Actual Total Existing TAP Emissions	Projected TAP Emissions from Proposed Installation	Premises Wide Total TAP Emissions	
			1-hour	8-hour	Annual	(lb/hr)	(lb/hr)	(lb/hr)	(lb/yr)
ex. ethanol	*64175*	*II*	*18843*	*3769*	*N/A*	*0.60*	*0.15*	*0.75*	*1500*
ex. benzene	*71432*	*I*	*80*	*16*	*0.13*	*0.5*	*0.75*	*1.00*	*400*
Chromium	7440473	I	NA	5	NA	-	-	-	1.43
Manganese	12079651	I	NA	1	NA	-	-	-	30.3

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (http://www.mde.maryland.gov) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))
A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m³.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))
A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m³, and any applicable annual screening level for the TAP must be greater than 1 µg/m³.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)
In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	*Thermal Oxidizer*	*99*	*$50,000*	*$100,000*	*no*
ex. ethanol and benzene	*Low VOC materials*	*80*	*0*	*$100.000*	*yes*

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)
Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m³)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis (µg/m³)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
ex. ethanol	*64175*	*18843*	*3769*	*N/A*	*0.75*	*1500*	*0.89*	*N/A*	*N/A*	*N/A*	*N/A*	*AER*
ex. benzene	*71432*	*80*	*16*	*0.13*	*1.00*	*400*	*0.04*	*36.52*	*1.5*	*1.05*	*0.12*	*Screen*

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-2

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 2 controlling truck receiving pit #2 - feed ingredients.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):	70	Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):	13000	Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☒ Baghouse No. 2

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C= AD Date: 2025.02.13 08:18:50 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

Airlanco Model 82RLP12

9. Type of Equipment which Control Equipment is to Service:

Baghouse 2 controls feedmill truck receiving pit.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	13,000 ACFM*	13000 ACFM*
Gas Temperature	70 °F	70 °F
Gas Pressure	20 INCHES W.G.	12 INCHES W.G.
	PRESSURE DROP 3" - 6"	
Dust Loading	30 GRAINS/	0.02 GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	ACFD** % °F	% °F
Liquid Flow Rate (Wet Scrubber)	N/A GALLONS/MINUTE	

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns		99+
10 to 44 Microns		99+
Larger than 44 Microns		99+

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-4

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 4 controlling the feedmill hammermills.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (ºF):		Inside diameter at top of round stack (ft):		
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):		
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height / Length / Width	

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☒ Baghouse No. 4

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:19:12 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

Airlanco Model#64RLP8

9. Type of Equipment which Control Equipment is to Service:

Baghouse 4 controls feedmill hammermills and stroage tanks.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content	_____ %	_____%
OR		
Wet Bulb Temperature	_____ °F	_____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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Air and Radiation Management Administration ● Air Quality Permits Program
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537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-5

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 5 controlling the feedmill salt pneumatic line.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☒ Baghouse No. 5

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:19:41 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

George A.Rolfes model #76-06-SF-SBR

9. Type of Equipment which Control Equipment is to Service:

Baghouse 5 controls feedmill pneumatic salt line.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content	_____ %	_____%
OR		
Wet Bulb Temperature	_____ °F	_____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-6

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 6 controlling the feedmill methionine pneumatic line.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☒ Baghouse No. 6
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:20:11 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

Airlanco- Model#16SBR8

9. Type of Equipment which Control Equipment is to Service:

Baghouse 6 controls feedmill pneumatic methionine line.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content	_____ %	_____%
OR		
Wet Bulb Temperature	_____ °F	_____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Cyclone 1

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Cyclone controlling the feedmill pellet line, pellet coolers.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☒ Cyclone No. 1
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:20:42 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [X] **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☐ _____ (type) **Other**

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Cyclone 1 controls the pellet line, pellet coolers.

10. Stack Test to be Conducted:

Yes ☐ **No** [X] _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Cyclone 2

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Cyclone controlling the feedmill pellet line, pellet coolers.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (ºF):		Inside diameter at top of round stack (ft):		
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):		
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height / Length / Width	

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☒ Cyclone No. 2
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:21:06 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [X] **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☐ _____ (type) **Other**

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Cyclone 2 controls the pellet line, pellet coolers.

10. Stack Test to be Conducted:

Yes ☐ **No** [X] _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
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537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Cyclone 3

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Cyclone controlling the feedmill pellet line, pellet coolers.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (ºF):		Inside diameter at top of round stack (ft):		
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):		
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height / Length / Width	

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☒ Cyclone No. 3
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:21:27 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [X] **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☐ _____ (type) **Other**

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Cyclone 3 controls the pellet line, pellet coolers.

10. Stack Test to be Conducted:

Yes ☐ **No** [X] _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Cyclone 4

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Cyclone controlling the feedmill pellet line, pellet coolers.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (ºF):		Inside diameter at top of round stack (ft):		
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):		
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height / Length / Width	

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☒ Cyclone No. 4
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

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APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:21:47 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [X] **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☐ _____ (type) **Other**

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Cyclone 4 controls the pellet line, pellet coolers.

10. Stack Test to be Conducted:

Yes ☐ **No** [X] _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Dust Sock

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Dust Sock emission point controlling finished feed loadout.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☒ Dust Suppression System No. 1
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:22:04 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Dust Sock (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Dust sock controls finished feed loadout.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F
Liquid Flow Rate (Wet Scrubber)	_____ GALLONS/MINUTE	

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
Feedmill Fugitives

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Fugitive emissions from feedmill sources bulk, micro, and finished feed bins, storage tanks, mixer as well as trace and feedmill headhouse and material handling.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☒ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	**(lb/day)**	**(ton/yr)**
Chromium (PM)				See Attachment D

(Attach additional sheets as necessary.)

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration X

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:22:33 -05'00'

Jessie Long, Sr. Environmental Manager

Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | MD | 21643 | (410) 943-0512
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Grain Receiving Operations

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)

Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time _____

6B. Number of Stack/Emission Points Associated with this Equipment 2

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility is a grain elevator. Grain Receiving Operations include two (2) truck receiving pits.

9. Control Devices Associated with this Equipment

None [ ] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[ ] Describe_

24-9 _____

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS [ ] ANNUAL AMOUNT CONSUMED

_____ (Specify Type) 66-1 _____ (Specify Units of Measure)

OTHER FUEL [ ] ANNUAL AMOUNT CONSUMED

_____ (Specify Type) 66-2 _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
[ ]	10	[ ]	[ ]	90	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

			INPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Truck Receiving - Grain				105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Truck Receiving - Grain				105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-1

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 1 controlling grain tuck receiving pit #1.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):	70	Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):	13000	Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☒ Baghouse No. 1

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:22:51 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

Airlanco Model 82RLP12

9. Type of Equipment which Control Equipment is to Service:

Baghouse 1 controls grain truck receiving pit #1.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	13000 ACFM*	13000 ACFM*
Gas Temperature	70 °F	70 °F
Gas Pressure	20 INCHES W.G.	12 INCHES W.G.

PRESSURE DROP 3" - 6"

Dust Loading	30 GRAINS/ACFD**	0.02 GRAINS/ACFD**
Moisture Content OR	%	%
Wet Bulb Temperature	°F	°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns		99+
10 to 44 Microns		99+
Larger than 44 Microns		99+

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

BH-3

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Baghouse 3 controlling grain truck receiving pit #3.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (ºF):	70	Inside diameter at top of round stack (ft):		
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):		
Exhaust gas volumetric flow rate (acfm):	13000	Building dimensions if emission point is located on building (ft)	Height / Length / Width	

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☒ Baghouse No. 3
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:23:22 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Baghouse (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

George Rolfes 72-W-16/712-F-154

9. Type of Equipment which Control Equipment is to Service:

Baghouse 3 controls grain truck receiving pit #3.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	13000 ACFM*	13000 ACFM*
Gas Temperature	70 °F	70 °F
Gas Pressure	20 INCHES W.G.	12 INCHES W.G.

PRESSURE DROP 3" - 6"

Dust Loading	30 GRAINS/ACFD**	0.02 GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	% °F	% °F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns		99+
10 to 44 Microns		99+
Larger than 44 Microns		99+

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration X

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:23:45 -05'00'

Jessie Long, Sr. Environmental Manager

Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | MD | 21643 | (410) 943-0512
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**
Indoor and Outdoor Grain Storage

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)

Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time _____

6B. Number of Stack/Emission Points Associated with this Equipment 0

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility is a grain elevator. The grain operations consist of two (2) temporary outdoor grain storage piles, four (4) wet grain storage bins, and six (6) grain storage tanks for grain storage.

9. Control Devices Associated with this Equipment

For additional information, See Attachment D Emission Calculations

None [X] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[ ] Describe

24-9 _____

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
[ ][ ][ ][ ][ ][ ]	[ ][ ]	[ ]	[ ][ ][ ][ ][ ][ ][ ]	[ ][ ][ ][ ]	[ ]
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
[ ][ ][ ][ ][ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ][ ]	[ ][ ]
46-52	53-55	56-58	59-63	64-65

OTHER FUELS [ ] ANNUAL AMOUNT CONSUMED _____

(Specify Type) 66-1 (Specify Units of Measure)

OTHER FUEL [ ] ANNUAL AMOUNT CONSUMED _____

(Specify Type) 66-2 (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
[ ]	[ ]	[ ][ ]	[ ]	[ ][ ]	[ ]	[ ][ ][ ]
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
[ ]	[1][0]	[ ][ ]	[ ][ ]	[9][0]	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

			INPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Temporary Outdoor Grain Storage				52,500	tons
2. Wet Grain Storage Bins & Grain Storage Tanks				105,000	tons
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Temporary Outdoor Grain Storage				52,500	tons
2. Wet Grain Storage Bins & Grain Storage Tanks				105,000	tons
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration X

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long

Digitally signed by: Jessie Long
DN: CN = Jessie Long email = jessie.long@perdue.com
C = AD
Date: 2025.02.13 08:24:12 -05'00'

Jessie Long, Sr. Environmental Manager

Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | MD | 21643 | (410) 943-0512
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Grain Headhouse & Material Handling

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)

Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time

6B. Number of Stack/Emission Points Associated with this Equipment 0

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility is a grain elevator.

9. Control Devices Associated with this Equipment

For additional information, See Attachment D Emission Calculations

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[X] Describe: All indoor headhouse and material handling operations are enclosed or underground.

24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS ☐ ANNUAL AMOUNT CONSUMED _____ OTHER FUEL ☐ ANNUAL AMOUNT CONSUMED _____

(Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
☐	☐		☐		☐	
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
☐	10			90	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

			INPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain - Indoor Handling				315,000	tons
2. Grain - Outdoor Handling				52,500	tons
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain - Indoor Handling				315,000	tons
2. Grain - Outdoor Handling				52,500	tons
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

See Attachment D for Emission Calculations

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Grain Fugitives

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Fugitive emissions from grain sources outdoor and indoor grain storage as well as headhouse and handling emissions.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☒ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration X

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long

Digitally signed by: Jessie Long
DN: CN = Jessie Long email = jessie.long@perdue.com C = AD
Date: 2025.02.13 08:24:33 -05'00'

Jessie Long, Sr. Environmental Manager
Print Name and Title

Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | **Premises No.** (3-6)
Registration Class (7) | **Equipment No.** (8-11)
Data Year (12-13) | **Application Date**

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | **MD** | **21643** | **(410) 943-0512**
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Grain Loadout

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)
Company Old Republic Insurance Company
NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment 3

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility is a grain elevator.

9. Control Devices Associated with this Equipment

For additional information, See Attachment D Emission Calculations

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

☒ Describe: The grain loadouts are controlled via dust sock or proposed vortex spout.

24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS ☐ ANNUAL AMOUNT CONSUMED _____ OTHER FUEL ☐ ANNUAL AMOUNT CONSUMED _____

(Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
☐	☐		☐		☐	
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
☐	10			90	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

			INPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain				105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain				105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

			OUTPUT RATE		
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116
Carbon Monoxide	**Volatile Organic Compounds**	**PM-10**
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149
Carbon Monoxide	**Volatile Organic Compounds**	**PM-10**
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

See Attachment D for Emission Calculations

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Dust Sock

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Dust Sock emission point controlling grain loadout 2.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☒ Dust Suppression System No. 2
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. _____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:25:17 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Dust Sock (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Dust sock controls grain loadout 2.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F

Liquid Flow Rate _____ GALLONS/MINUTE
(Wet Scrubber)
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Dust Sock

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Dust Sock emission point controlling tank 7 grain loadout.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☒ Dust Suppression System No. 3

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT

1. Owner of Installation	Telephone No.	Date of Application
Perdue AgriBusiness LLC	(410) 341-2055	

2. Mailing Address	City	Zip Code	County
6906 Zion Church Road	Salisbury	21804	Wicomico

3. Equipment Location	City/Town or P.O.	County
37 Delaware Ave	Hurlock	Dorchester

4. Signature of Owner or Operator	Title	Print or Type Name
Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:25:37 -05'00'	Sr. Environmental Manager	Jessie Long

5. Application Type: **Alteration** ☐ **New Construction** ☐

6. Date Construction is to Start: **Completion Date (Estimate):**

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone ☐ **Multiple Cyclone** ☐ **Afterburner** ☐ **Electrostatic Precipitator** ☐

Scrubber ☐ _____ (type) **Other** ☒ Dust Sock (type)

8. Gas Cleaning Equipment Manufacturer **Model No.** **Collection Efficiency (Design Criteria)**

9. Type of Equipment which Control Equipment is to Service:

Dust sock controls grain tank 7 loadout.

10. Stack Test to be Conducted:

Yes ☐ **No** ☒ _____ (Stack Test to be Conducted By) _____ (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET	OUTLET
Gas Flow Rate	_____ ACFM*	_____ACFM*
Gas Temperature	_____ °F	_____°F
Gas Pressure	_____ INCHES W.G.	_____INCHES W.G.
	PRESSURE DROP _____	
Dust Loading	_____ GRAINS/ACFD**	_____ GRAINS/ACFD**
Moisture Content OR Wet Bulb Temperature	_____ % _____ °F	_____% _____°F
Liquid Flow Rate (Wet Scrubber)	_____ GALLONS/MINUTE	

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ °F

Capacity of Afterburner _____ BTU/HR

Diameter (or area) of Afterburner Throat_____

Combustion Chamber_____ _____ Operating Temperature at Afterburner _____ °F
(diameter) (length)

Retention Time of Gases _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See Attachment B and C.

Date Received: Local _____ _____ **State** _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date_____

By _____

Application Returned to Applicant:

Date_____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: ☐ ☐☐☐☐

PREMISES NUMBER: ☐☐ ☐☐☐☐

Emission Calculations Revised By _____ **Date** _____

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APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration X

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury | MD | 21804
City | State | Zip

Telephone Number

(410) 341-2055

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:33:50 -05'00'

Jessie Long, Sr. Environmental Manager

Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

37 Delaware Avenue
Street Number and Street Name

Hurlock | MD | 21643 | (410) 943-0512
City/Town | State | Zip | Telephone Number

Hurlock Grain, Feedmill, & Hatchery
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**
Facility Roadway Operations

5. Workmen's Compensation Coverage MWC31817225 (Binder/Policy Number) 01/01/2026 (Expiration Date)

Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment 0

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

This facility includes a feedmill, grain storage, and a hatchery. The facility includes both paved and unpaved roadways used for trucks transporting materials into and out of the facility.

9. Control Devices Associated with this Equipment

None [X] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[ ] Describe_

24-9 _____

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
[ ][ ][ ][ ][ ][ ]	[ ][ ]	[ ]	[ ][ ][ ][ ][ ][ ][ ]	[ ][ ][ ][ ]	[ ]
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
[ ][ ][ ][ ][ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ][ ]	[ ][ ]
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) [ ] 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

OTHER FUEL _____ (Specify Type) [ ] 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
[ ]	[ ]	[ ][ ]	[ ]	[ ][ ]	[ ]	[ ][ ][ ]
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
[X]	[ ][ ]	[ ][ ]	[ ][ ]	[ ][ ]	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) ☐ 85

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	☐☐☐ 86-88	☐☐☐ 89-91	☐☐☐☐ 92-95	☐☐☐ 96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? ☐ (Y or N)

NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230 (410)
537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Perdue AgriBusiness LLC

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:

Facility Roadway Fugitives

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

Fugitive emissions from facility roadways.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☐ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	10
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	90

4. Emission Point Information

Height above ground (ft):		Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):					
Exit temperature (ºF):		Inside diameter at top of round stack (ft):			
Exit velocity (ft/min):		Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):		Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☒ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☐ Other No. _____
Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)				See Attachment D
Particulate Matter (filterable as PM2.5)				See Attachment D
Particulate Matter (condensables)				See Attachment D
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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(410) 537-3230 ▪ 1-800-633-6101 ▪www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR FUEL BURNING EQUIPMENT

Permit to Construct ❑ Registration Update ❑ Initial Registration ❑

1A. Owner of Equipment/Company Name Perdue AgriBusiness LLC

6906 Zion Church Road

Mailing Address/Street

Salisbury MD 21804

City State Zip Code

Telephone Number (410) 341-2055

Print Name/Title

Jessie Long, Sr. Environmental Manager

Signature: Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:34:21 -05'00' Date:

DO NOT WRITE IN THIS BOX

2. Registration Number

County No. (1-2) | Premises No. (3-6)

Registration Class (7) | Equipment No. (6-11)

Data Year (12-13)

Application Date

1B. Equipment Location (if different from above give Street Number and Name, City, State, Zip and Telephone Number):

Premises Name (if different from above): Hurlock Grain, Feedmill, & Hatchery -37 Delaware Avenue, Hurlock, MD 21643

3. Status

A= New Equipment
B= Modification to Existing Equipment
C= Existing Equipment

Status	New Construction Began (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
C			
15	16-19	20-23	20-23

4. Describe this Equipment (Make, Model, Features, Manufacturer, etc.):

1.2 MMBtu/hr Laars Natural Gas Fired Boiler

5. Workmen's Compensation Coverage: Binder/Policy Number: MWC31817225

Company Name: Old Republic Insurance Company Expiration Date 01/01/2026

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6. Number of Pieces of Identical Equipment to be Registered/Permitted at this Time: 1

7. Person Installing this Equipment (if different from above give Name/Title, Company Name, Mailing Address and Telephone Number):

8. Major Activity, Product or Service of Company at this Location:

This facility is a grain elevator. The boiler is located at the hatchery. The Laars boiler is used to provide heat.

9. Control Devices Associated with this Equipment

None	Simple/Multiple Cyclones	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Bag-house
X						
24-0	24-1	24-2	24-3	24-4	24-5	24-6

Thermal/Catalytic Afterburner	Dry Scrubber	Other	Describe
24-7	24-8	24-9	

10. Annual Fuel Consumption for this Equipment Only

OIL-1000 GALLONS [ ] (26-31) SULFUR % [ ] (32-33) GRADE [ ] (34) NATURAL GAS-1000 FT³ [1 0 0 1 1] (35-41) LP GAS-100 GALLONS [ ] (42-45) GRADE [ ]

COAL- TONS [ ] (46-52) SULFUR % [ ] (53-55) ASH% [ ] (56-58) WOOD-TONS [ ] (59-63) MOISTURE % [ ] (64-65)

OTHER FUELS _____ (Specify Type) [ ] 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure) OTHER FUEL _____ (Specify Type) [ ] 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this equipment)

Comfort/Space Heating Only [X] 67-1 Process Heat Only [ ] 67-2 Percent Process Heat [ ] 68-69 Oil Burner Type [ ] 70 (1=Pressure Gun 2=Air Atomizer 3=Steam Atomizer 4=Rotary Cup) Coal Burner Type [ ] 71 (2=Stoker 3=Pulverized 4=Hand Fired)

Days Per Week [7] 72 Days Per Year [3 6 5] 73-75

SEASONAL VARIATION IN OPERATION (PERCENT):

None [x] 76 Winter [ ] 77-78 Spring [ ] 79-80 Summer [ ] 81-82 Fall [ ] 83-84

12. Exhaust Stack Information

Height Above Ground (ft) [ ] 86-88 Inside Diameter at Top (inches) [ ] 89-91 Exit Temperature (°F) [ ] 92-95 Exit Velocity (ft/sec) [ ] 96-98

13. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

See Attachment D for Emission Calculations

Particulate Matter [ ] 99-104 Oxides of Sulfur [ ] 105-110 Oxides of Nitrogen [ ] 111-116

Carbon Monoxide [ ] 117-122 Volatile Organic Compounds [ ] 123-128 PM-10 [ ] 129-134

14. Method Used to Determine Emissions (1=Estimate, 2=AP42, 3=Stack Test, 4=Other Emission Factor)

TSP [2] 165 SOx [2] 166 NOx [2] 167 CO [2] 168 VOC [2] 169 PM10 [2] 170

15. What is the Maximum Rated Heat Input of this Unit (Million Btu/hr)? 1.20 MMBtu/hr

Air and Radiation Management Administration Use Only

16. Date Rec'd Local_____ Date Rec'd State_____

Return to Local Jurisdiction Date _____ By _____

Rev'd by Local Jurisdiction: Date _____ By _____ Rev'd by State: Date_____ By _____

Acknowledgement Sent by State: Date _____ By _____

17. Inventory Date (MM/YY) [ ] 171-174 SCC Code [ ] 178-185

18. Annual Operating Rate [ ] 186-192 Maximum Design Hourly Rate [ ] 193-199

Permit to Operate Month [ ] 200-201 Transaction Date [ ] 202-207 Staff Code [ ] 208-210 VOC [ ] 211 212 SIP Code [ ] 213 214

Regulation Code [ ] 215-218 Confidentiality [ ] 219

Point Description [ ] 220-238 Action [ ] 239 (A: Add C: Change)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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APPLICATION FOR PERMIT TO OPERATE PROCESS EQUIPMENT

1. Premise Identification:

Hurlock Grain, Feedmill, and Hatchery
Premise Name or Identification

019-0121
Premise Number

37 Delaware Avenue	Hurlock	MD	21643	Dorchester
Premise Address	City	State	Zip	County

2. Equipment Identification

❑ Single Installation ☒ Process Line ❑ Identical Units and No._____

3. Describe Equipment and its Major Function. State Type and Size of Equipment and Type Control Device Associated with this Equipment Only.

Grain drying operations consist of one Berico Direct Fired Grain Dryer and one Brock Grain Dryer processing a combined 105,000 tons of grain per year. They are controlled by walls and mesh screens. They are included in the Permit-to-Construct for Permises No. 019-0121.

Signature Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:34:54 -05'00'

Title Senior Environmental Manager

Date_____

Form number: 26
Revision date: 09/27/2002
TTY Users 1-800-735-2258

Recycled Paper

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Air and Radiation Management Administration ● Air Quality Permits Program

APPLICATION FOR PERMIT TO OPERATE FUEL BURNING EQUIPMENT

1. Premise Identification:

Premise Name or Identification: Hurlock Grain, Feedmill, & Hatchery

Premise Address: 37 Delaware Avenue (Street) Hurlock (City) MD (State) 21643 (Zip) Dorchester (County)

Premise Number: 019-0121

2. Equipment Identification

Unit	Manufacturer	MM Btu/hr	Primary Fuel	Secondary Fuel	Registration #
1	Cleaver-Brooks	14.65	Natural Gas		Registration 019-0121-4-0152
2	Caterpillar	787 hp	Diesel		Registration 019-0121-9-0115
3	Raypack	2.1	Natural Gas		Registration 019-0121-5-0043
4	Brock Dryer	61	Natural Gas		Registration 019-0121-8-0070
5	Berico Dryer	38	Natural Gas		Registration 019-0121-8-0062
6	Caterpillar	500 kW	Diesel		Registration Submitted No.Unk
7	Caterpillar	500 kW	Diesel		Registration Submitted No.Unk

3. Total Fuel Consumption During Last 12 Month Period Ending _____

Unit	Primary Fuel	Units	Secondary Fuel	Units
1				
2				
3				
4				

4. Control Equipment (if applicable)

Unit	Type	Date Installed	Date to be Installed
1			
2			
3			
4			

Signature Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.02.13 08:36:11 -05'00' **Title** Senior Environmental Manager **Date**

REGULATORY ANALYSIS

The regulatory applicability analysis reviews the federal and Maryland Department of the Environment (MDE) regulations applicable to the facility. The federal regulations included in the regulatory applicability analysis are New Source Review (NSR), Title V, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Pollutants (NESHAP).

1. NEW SOURCE REVIEW

The federal NSR or preconstruction air permitting program requires applicable facilities to install pollution control equipment when they build or when making changes to the facility. NSR may be applicable to a facility located in the areas designated as nonattainment with the National Ambient Air Quality standards (NAAQS). The facility is located in Hurlock, Dorchester County, MD. Dorchester County is a part of the Ozone Transport Region (OTR) but is in attainment for all criteria pollutants. Areas that are a part of the OTR, are applicable to nonattainment New Source Review (NNSR) for ozone precursors such as NO_x and VOC. The remaining pollutants fall under the Prevention of Significant Deterioration (PSD) Program.

Table 1.1 Major NSR Applicability

Pollutant	Facility Wide PTE (tpy)	Major Stationary Source Threshold (tpy)	Major NSR Program	Above Threshold?
CO	44.97	250	PSD	No
NO_x	65.67	100	NNSR	No
VOC	3.40	50	NNSR	No
SO_2	0.55	250	PSD	No
PM_{10}	31.00	250	PSD	No
$PM_{2.5}$	8.76	250	PSD	No

Per Table 1.1 above, the facility does not trigger NNSR or PSD. In addition, it is not listed as a source category under 40 CFR 52.21(b)(1)(i)(a); therefore, this regulation is not applicable to the facility.

2. TITLE V

Major sources in Maryland are required to obtain a Title V operating Permit per COMAR 26.11.03.01A(1). Table 2.1 below depicts the major source threshold found in COMAR 26.11.02.01C for the Title V permitting program.

Table 2.1 Title V Applicability

Pollutant	Facility Wide PTE (tpy)	Major Stationary Source Threshold (tpy)	Above Threshold?
CO	43.90	100	No
NO_x	61.55	100	No
VOC	3.02	50	No
SO_2	0.30	100	No
PM_{10}	30.71	100	No
$PM_{2.5}$	8.47	100	No
Single HAP (n-Hexane)	0.88	10	No
Total HAP	0.94	25	No

Per Table 2.1 above, the facility does not trigger Title V permitting. This facility will be classified as a minor source.

3. NEW SOURCE PERFORMANCE STANDARDS

NSPS requires new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology as specified in the applicable provisions.

40 CFR Part 60 Subpart DD applies to any grain terminal elevator or any grain storage elevator. The facility does not meet the definition of a grain storage terminal elevator because it does not have a permanent storage capacity of more than 2.5 million US bushels. Therefore, the facility is not subject to NSPS identified in 40 CFR Part 60 Subpart DD.

4. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The facility is an area source of HAP emissions. The facility is not subject to any National Emissions Standards for Hazardous Air Pollutants (NESHAP) identified in 40 CFR Part 63.

ATTACHMENT A

WORKMAN'S COMPENSATION INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 01/13/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA LLC. 1050 CONNECTICUT AVENUE, SUITE 700 WASHINGTON, DC 20036-5386 Attn: CSS - TEL: 202 263 7600 CN108313099-*STND-XSWC-25-26	**CONTACT NAME:** **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:**
INSURED PERDUE FOODS LLC AND ITS SUBSIDIARIES 31149 OLD OCEAN CITY RD. PO BOX 1537 SALISBURY, MD 21802-1537	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** Old Republic Insurance Company — 24147 **INSURER B :** **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** CLE-006908651-05 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:			MWZY31817425	01/01/2025	01/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 3,000,000 $ 3,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			MWTB31817525	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 5,000,000 $ $ $
	[ ] **UMBRELLA LIAB** [ ] OCCUR [ ] **EXCESS LIAB** [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		MWC31817225 (AOS) MWC31817225 (WI)	01/01/2025 01/01/2025	01/01/2026 01/01/2026	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 2,000,000 $ 2,000,000 $ 2,000,000
A	Excess Workers Compensation Statutory Limits			MWXS31817325 (VA,IN,KY,MD,SC,WA)	01/01/2025	01/01/2026	Each Accident Disease-EA Emp/Policy Lmt	2,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of Insurance

CERTIFICATE HOLDER

PERDUE FOODS LLC and its subsidiaries
31149 Old Ocean City Road
Salisbury, MD 21804

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh USA LLC

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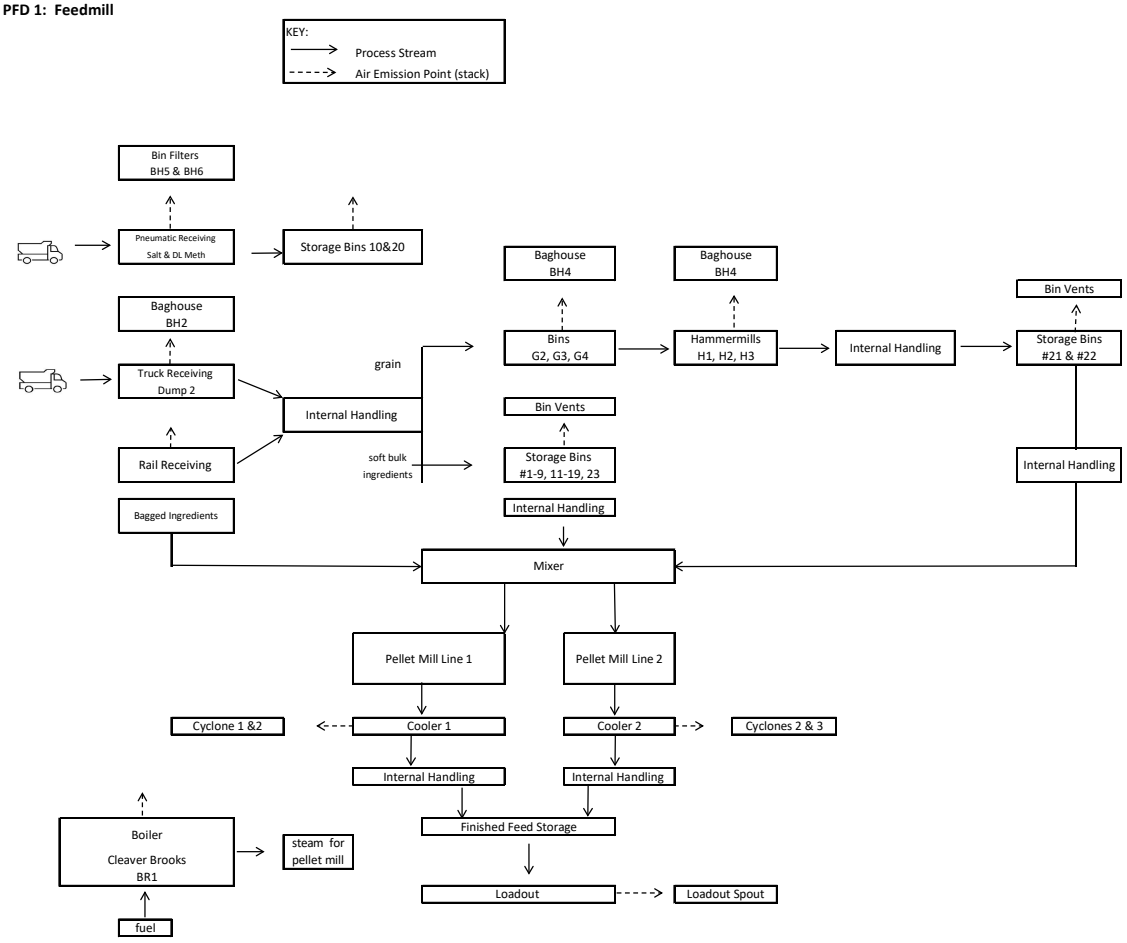
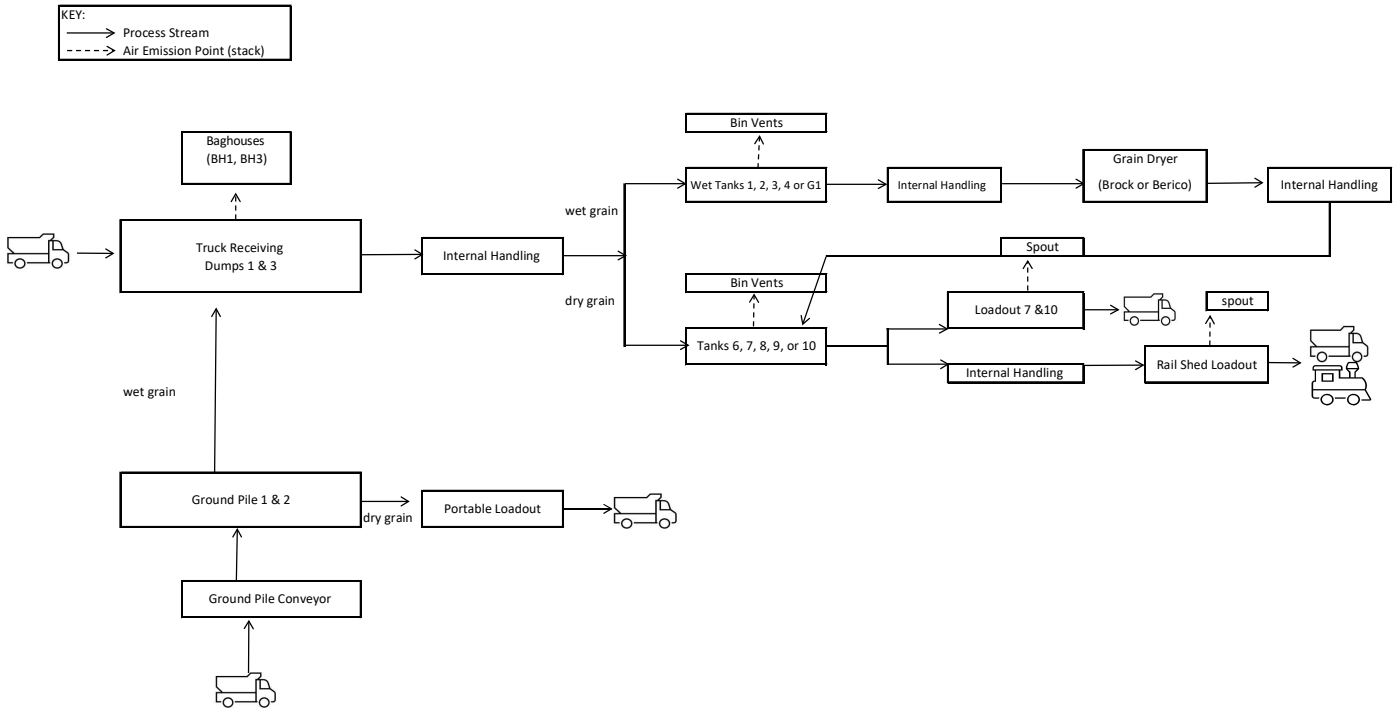
ATTACHMENT B

PROCESS FLOW DIAGRAM

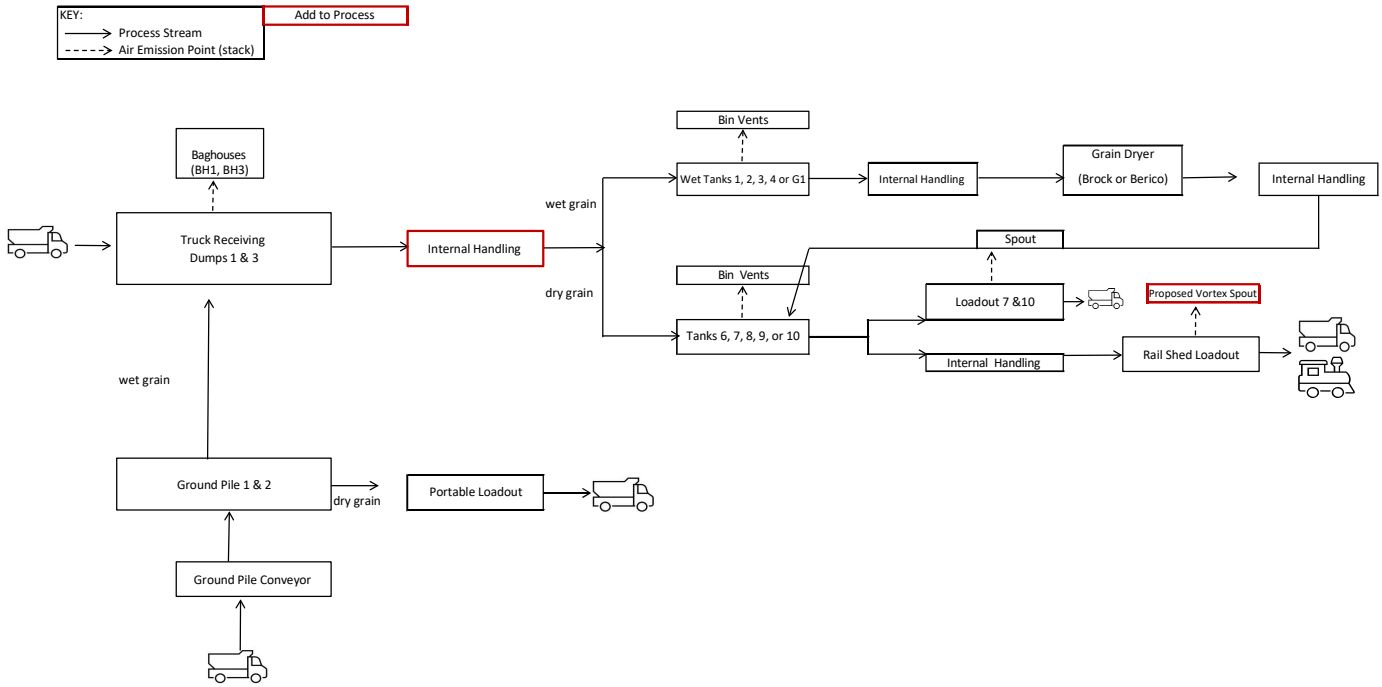
Perdue Agribusiness LLC
Process Flow Diagram
Hurlock Facility, Grain, Feedmill & Hatchery
PFD 1: Feedmill



Perdue Agribusiness LLC
Process Flow Diagram
Hurlock Facility, Grain, Feedmill & Hatchery
PFD 1: Grain Handling



Perdue Agribusiness LLC
Process Flow Diagram
Hurlock Facility, Grain, Feedmill & Hatchery
PFD 1: Grain Handling + additional processes PTC



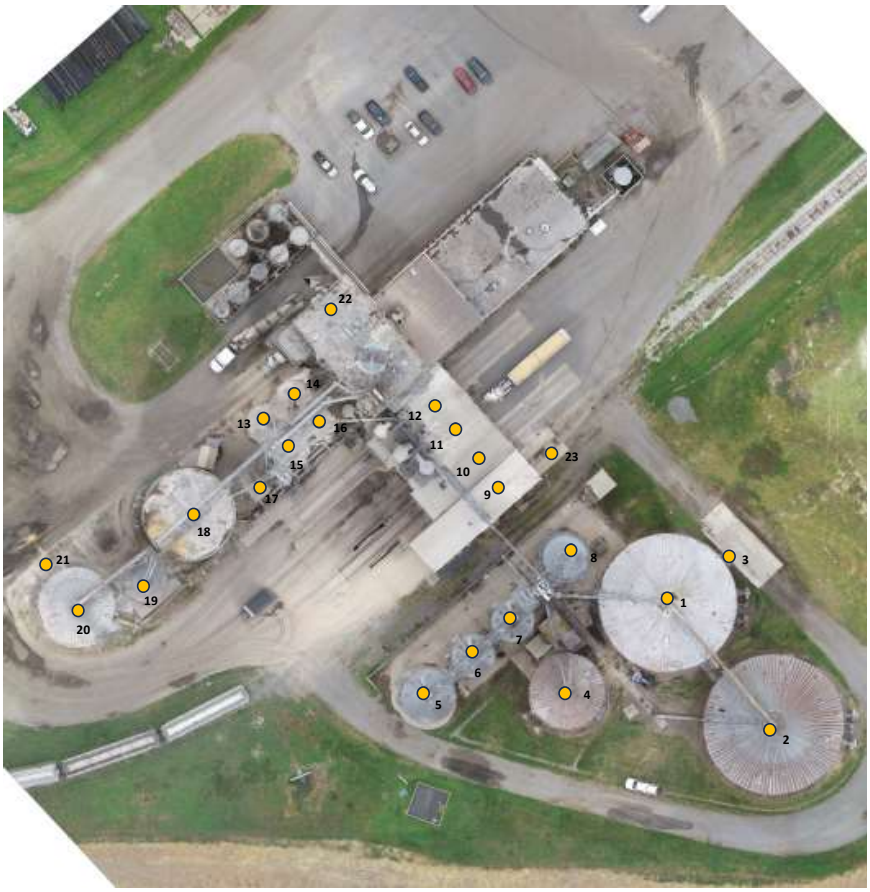
ATTACHMENT C

SITE PLAN

Dollar General
392
392
Amick Hatchery
Harrison Ferry
Apartments
Perdue AgriBusiness
- Hurlock Feed Mill...
392

392
E New Market Hurlock Rd
392
Ground
Pile 1
Perdue AgriBusiness
- Hurlock Feed Mill...
Ground
Pile 2

Legend
1. Tank 7
2. Tank 8
3. Gravity Loadout Spout Tank 7
4. Tank 9
5. Wet Tank 3
6. Wet Tank 2
7. Wet Tank 1
8.Brock Grain Dryer
9. Rail/Truck Receiving & Loadout Shed
10. Dump 3
11. Dump 2
12. Dump 1
13. G1
14. G2
15. G3
16. G4
17. Berico Grain Dryer
18. Tank 6
19. Wet Tank 4
20. Tank 10
21. Mechanical Grain Loadout Tank 10
22. Feedmill Loadout
23. Cleaver Brooks Boiler



Legend
24. Outside Emergency Generator
25. Inside Emergency Generator
26. Inside Emergency (Out of Service) Generator
27.Lochnivar Boiler
28.Raypack Boiler
29. Raypack Boiler

ATTACHMENT D

EMISSIONS CALCULATIONS

Emission Unit Description		Unit Design Capacity (maximum hourly rate)		Max Annual Throughput (tons/yr)	Control Device	Installation Year
Facility Roadways		-		-	-	-
Hatchery						
Lochnivar Boiler[1]		0.65	MMBtu/hr	-	-	2007
Raypack Boiler		2.10	MMBtu/hr	-	-	2006
Laars Boiler		1.20	MMBtu/hr	-	-	2007
Diesel Engine		787	hp	-	-	Temporary (Not on Site)
Diesel Emergency Generator (Inside)		500	kW	-	-	1979
Diesel Emergency Generator (Outside)		500	kW	-	-	2022
Diesel Emergency Generator - 2 (Inside)[2]		260	kW	-	-	1979
Feedmill						
Cleaver Brooks Boiler		14.65	MMBtu/hr	-	-	1979
Receiving	Truck Receiving Pit #2 - Feed Ingredients	60	tons/hr	505,665	BH-2	1979
	Rail Receiving Pit	2	tons/hr	18,000	Proposed Vortex Spout	-
	Salt Pneumatic Line	0.2	tons/hr	1,500	BH-5	1987
	Methionine Pneumatic Line				BH-6	1997
Hammermills	Hammermill 1	60	tons/hr	525,165	BH-4	1979
	Hammermill 2				BH-4	1979
	Hammermill 3				BH-4	1994
Storage (bin vents)	Bulk Bins (23 bins)	60	tons/hr	525,165	-	1979
	Micro Bins (16 bins)	0.05	tons/hr	435	-	-
	Storage Tank G2	60	tons/hr	525,165	-	1979
	Storage Tank G3				-	1979
	Storage Tank G4				-	1979
	Finished Feed Bins (10 bins)	60	tons/hr	525,600	-	-
Feed Additives (stored in bags)		0.05	tons/hr	435	-	-
Mixer		60	tons/hr	525,600	Enclosed	-
Pellet Mill - Pellet Cooling (2 units)		30	tons/hr/unit	525,600	Cyclones 1,2,3,4	1979
Headhouse & Handling (Feedmill)		180	tons/hr	1,576,800	Enclosed	1979
Mechanical Finished Feed Loadout 1		60	tons/hr	525,600	Dust Sock	1979
Grain						
Grain Pile Emergency Generator[2]		110	kW	-	-	-
Receiving	Truck Receiving Pit #1 - Grain	300	tons/hr	105,000	BH-1	1979
	Truck Receiving Pit #3 - Grain	300	tons/hr		BH-3	1979
Grain Drying	Berico Grain Dryer	54	tons/hr	105,000	Walls/Mesh Screen	1993
	Brock Grain Dryer	165	tons/hr			2014
Berico Burner		38.00	MMBtu/hr	-	-	1993
Brock Burner		61.00	MMBtu/hr	-	-	2014
Storage	Temporary Outdoor Grain Storage #1	450	tons/hr	52,500	-	2005
	Temporary Outdoor Grain Storage #2	450	tons/hr		-	2010
	Wet Grain Storage Bins #1	300	tons/hr	105,000	-	2014
	Wet Grain Storage Bins #2	300	tons/hr		-	2014
	Wet Grain Storage Bins #3	300	tons/hr		-	2014
	Wet Grain Storage Bins #4	240	tons/hr		-	1979
	Grain Storage Tank (G1)	240	tons/hr		-	1979
	Grain Storage Tank 6	240	tons/hr		-	1979
	Grain Storage Tank 7	240	tons/hr		-	1979
	Grain Storage Tank 8	240	tons/hr		-	1979
	Grain Storage Tank 9	240	tons/hr		-	1979
	Grain Storage Tank 10	240	tons/hr		-	1979
Headhouse & Handling (Grain)		3,672	tons/hr	315,000	Enclosed	1979
Loadout	Mechanical Grain Loadout 3 (Rail)	180	tons/hr	105,000	Proposed Vortex Spout	-
	Mechanical Grain Loadout 2 (Tank 10)	105	tons/hr		Dust Sock	1979
	Tank 7 Loadout	120	tons/hr		Dust Sock	1979

[1] Exempt per The Code of Maryland Regulations (COMAR) 26.11.02.10.C.

[2] Exempt per The Code of Maryland Regulations (COMAR) 26.11.02.10.E.

Uncontrolled Facility Emissions

Source Location	Source Description	Nitrogen Oxides	Carbon Monoxide	Sulfur Dioxide	VOC	PM	PM_{10}	$PM_{2.5}$	n-Hexane	Chromium	Manganese	Total HAPs	Methane	Nitrous Oxide	Carbon Dioxide	CO_2e
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Feedmill	NG Cleaver Brooks Boiler	6.11	5.13	0.04	0.34	0.46	0.46	0.46	0.11	0.00	0.00	0.12	0.14	0.13	7,330.87	7,374.43
Hatchery	NG Lochinvar Boiler[2]	0.27	0.23	0.00	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.01	322.87	324.79
Hatchery	NG Raypack Boiler	0.88	0.74	0.01	0.05	0.07	0.07	0.07	0.02	0.00	0.00	0.02	0.02	0.02	1,051.20	1,057.45
Hatchery	NG Laars Boiler	0.50	0.42	0.00	0.03	0.04	0.04	0.04	0.01	0.00	0.00	0.01	0.01	0.01	600.69	604.26
Hatchery	Diesel Engine	4.72	1.08	0.00	0.13	0.10	0.08	0.08	--	--	--	0.00	0.01	0.00	227.25	228.08
Hatchery	Diesel Emergency Generator (Inside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	2.70	0.59	0.18	0.26	0.19	0.19	0.19	--	--	--	0.00	0.00	0.00	100.07	100.39
Hatchery	Diesel Emergency Generator (Outside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Grain	Grain Pile Emergency Generator[1]	1.14	0.25	0.07	0.11	0.08	0.08	0.08	--	--	--	0.00	0.00	0.00	42.34	42.47
Grain	Berico NG Burner	15.85	13.32	0.10	0.87	1.20	1.20	1.20	0.29	0.00	0.00	0.30	0.36	0.35	19,021.71	19,134.75
Grain	Brock NG Burner	25.45	21.37	0.15	1.40	1.93	1.93	1.93	0.46	0.00	0.00	0.48	0.59	0.56	30,534.86	30,716.31
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	4.46	0.66	0.11	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	--	--	--	--	0.01	0.01	0.00	--	3.55E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Mixer	--	--	--	--	16.03	8.94	1.52	--	3.54E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Hammermills (1-3)	--	--	--	--	315.10	78.77	13.39	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	--	--	--	--	946.08	236.52	40.21	--	2.09E-04	1.05E-01	1.05E-01	--	--	--	--
Feedmill	Storage (bin vents)	--	--	--	--	19.70	4.97	0.87	--	2.90E-06	1.46E-03	1.46E-03	--	--	--	--
Feedmill	Mechanical Finished Feed Loadout 1	--	--	--	--	0.87	0.21	0.04	--	1.92E-07	9.62E-05	9.64E-05	--	--	--	--
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	48.09	26.81	4.57	--	1.18E-06	5.93E-04	5.94E-04	--	--	--	--
Grain	Receiving Operations (Grain)	--	--	--	--	9.45	3.10	0.53	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	11.55	2.89	0.49	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	9.13	2.28	0.39	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	4.52	1.52	0.26	--	--	--	--	--	--	--	--
Grain	Grain Storage	--	--	--	--	10.44	2.61	0.45	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	12.81	7.14	1.22	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	0.82	2.28	0.25	--	--	--	--	--	--	--	--
	Total Facility Uncontrolled Emissions	**65.67**	**44.97**	**0.55**	**3.40**	**1,413.32**	**382.91**	**68.50**	**0.88**	**0.001**	**0.11**	**1.05**	**1.17**	**1.09**	**59,619.06**	**59,971.57**

Controlled Facility Emissions

Source Location	Source Description	Nitrogen Oxides	Carbon Monoxide	Sulfur Dioxide	VOC	PM	PM_{10}	$PM_{2.5}$	n-Hexane	Chromium	Manganese	Total HAPs	Methane	Nitrous Oxide	Carbon Dioxide	CO_2e
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Feedmill	NG Cleaver Brooks Boiler	6.11	5.13	0.04	0.34	0.46	0.46	0.46	0.11	0.00	0.00	0.12	0.14	0.13	7,330.87	7,374.43
Hatchery	NG Lochinvar Boiler[2]	0.27	0.23	0.00	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.01	322.87	324.79
Hatchery	NG Raypack Boiler	0.88	0.74	0.01	0.05	0.07	0.07	0.07	0.02	0.00	0.00	0.02	0.02	0.02	1,051.20	1,057.45
Hatchery	NG Laars Boiler	0.50	0.42	0.00	0.03	0.04	0.04	0.04	0.01	0.00	0.00	0.01	0.01	0.01	600.69	604.26
Hatchery	Diesel Engine	4.72	1.08	0.00	0.13	0.10	0.08	0.08	--	--	--	0.00	0.01	0.00	227.25	228.08
Hatchery	Diesel Emergency Generator (Inside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	2.70	0.59	0.18	0.26	0.19	0.19	0.19	--	--	--	0.00	0.00	0.00	100.07	100.39
Hatchery	Diesel Emergency Generator (Outside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Grain	Grain Pile Emergency Generator[1]	1.14	0.25	0.07	0.11	0.08	0.08	0.08	--	--	--	0.00	0.00	0.00	42.34	42.47
Grain	Berico NG Burner	15.85	13.32	0.10	0.87	1.20	1.20	1.20	0.29	0.00	0.00	0.30	0.36	0.35	19,021.71	19,134.75
Grain	Brock NG Burner	25.45	21.37	0.15	1.40	1.93	1.93	1.93	0.46	0.00	0.00	0.48	0.59	0.56	30,534.86	30,716.31
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	0.04	0.01	0.00	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	--	--	--	--	0.01	0.01	0.00	--	3.55E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Mixer	--	--	--	--	3.21	1.79	0.30	--	7.08E-07	3.56E-04	3.56E-04	--	--	--	--
Feedmill	Hammermills (1-3)	--	--	--	--	3.15	0.79	0.13	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	--	--	--	--	94.61	23.65	4.02	--	2.09E-05	1.05E-02	1.05E-02	--	--	--	--
Feedmill	Storage (bin vents)	--	--	--	--	19.70	4.97	0.87	--	2.90E-06	1.46E-03	1.46E-03	--	--	--	--
Feedmill	Mechanical Finished Feed Loadout 1	--	--	--	--	0.43	0.11	0.02	--	9.58E-08	4.81E-05	4.82E-05	--	--	--	--
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	9.62	5.36	0.91	--	2.36E-07	1.19E-04	1.19E-04	--	--	--	--
Grain	Receiving Operations (Grain)	--	--	--	--	0.09	0.03	0.01	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	5.78	1.44	0.25	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	2.28	0.57	0.10	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	2.26	0.76	0.13	--	--	--	--	--	--	--	--
Grain	Grain Strorage	--	--	--	--	3.60	0.90	0.15	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	5.12	2.86	0.49	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	0.82	2.28	0.25	--	--	--	--	--	--	--	--
	Total Facility Controlled Emissions	**65.67**	**44.97**	**0.55**	**3.40**	**154.98**	**49.73**	**11.84**	**0.88**	**0.001**	**0.01**	**0.95**	**1.17**	**1.09**	**59,619.06**	**59,971.57**
	Emissions Applicable to Title V Limits[1]	**61.55**	**43.90**	**0.30**	**3.02**	**110.33**	**30.71**	**8.47**	**0.88**	**0.001**	**0.011**	**0.94**	**1.16**	**1.08**	**59,153.79**	**59,503.91**
	Emissions Applicable to PSD/NNSR Limits[2]	**65.67**	**44.97**	**0.55**	**3.40**	**110.62**	**31.00**	**8.76**	**0.88**	**0.001**	**0.011**	**0.95**	**1.17**	**1.09**	**59,619.06**	**59,971.57**

[1] Title V emissions do not include emissions from sources exempt per COMAR 26.11.02.10 and fugitive sources. Exempted sources are denoted using this footnote.
[2] For PSD/NNSR consideration, emissions do not include fugitive sources.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Cleaver Brooks Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	3
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760 hr/yr
Design Capacity	14.65 MMBtu/hr/unit
Number of Boilers	1 Boiler(s)
Gas HHV	1050 BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	6.11
Carbon Monoxide	84	0.08	5.13
VOC	5.5	0.01	0.34
Sulfur Dioxide	0.6	0.00	0.04
Lead	0.0005	0.00	0.00
PM	7.6	0.01	0.46
PM_{10}	7.6	0.01	0.46
$PM_{2.5}$	7.6	0.01	0.46
Carbon Dioxide	120000	114.29	7,330.87
Methane	2.3	0.00	0.14
Nitrous Oxide	2.2	0.00	0.13
CO_2e[3]	--	--	7,370.42
2-Methylnaphthalene	2.40E-05	2.29E-08	1.47E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	1.10E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	9.77E-07
Acenaphthene	1.80E-06	1.71E-09	1.10E-07
Acenaphthylene	1.80E-06	1.71E-09	1.10E-07
Anthracene	2.40E-06	2.29E-09	1.47E-07
Benz(a)anthracene	1.80E-06	1.71E-09	1.10E-07
Benzene	2.10E-03	2.00E-06	1.28E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	7.33E-08
Benzo(b)fluoranthene	1.80E-06	1.71E-09	1.10E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	7.33E-08
Benzo(k)fluoranthene	1.80E-06	1.71E-09	1.10E-07
Butane	2.10E+00	2.00E-03	1.28E-01
Chrysene	1.80E-06	1.71E-09	1.10E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	7.33E-08
Dichlorobenzene	1.20E-03	1.14E-06	7.33E-05
Ethane	3.10E+00	2.95E-03	1.89E-01
Fluoranthene	3.00E-06	2.86E-09	1.83E-07
Fluorene	2.80E-06	2.67E-09	1.71E-07
Formaldehyde	7.50E-02	7.14E-05	4.58E-03
n-Hexane	1.80E+00	1.71E-03	1.10E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	1.10E-07
Naphthalene	6.10E-04	5.81E-07	3.73E-05
Pentane	2.60E+00	2.48E-03	1.59E-01
Phenanthrene	1.70E-05	1.62E-08	1.04E-06
Propane	1.60E+00	1.52E-03	9.77E-02
Pyrene	5.00E-06	4.76E-09	3.05E-07
Toluene	3.40E-03	3.24E-06	2.08E-04
Arsenic	2.00E-04	1.90E-07	1.22E-05
Barium	4.40E-03	4.19E-06	2.69E-04
Beryllium	1.20E-05	1.14E-08	7.33E-07
Cadmium	1.10E-03	1.05E-06	6.72E-05
Chromium	1.40E-03	1.33E-06	8.55E-05
Cobalt	8.40E-05	8.00E-08	5.13E-06
Copper	8.50E-04	8.10E-07	5.19E-05
Manganese	3.80E-04	3.62E-07	2.32E-05
Mercury	2.60E-04	2.48E-07	1.59E-05
Molybdenum	1.10E-03	1.05E-06	6.72E-05
Nickel	2.10E-03	2.00E-06	1.28E-04
Selenium	2.40E-05	2.29E-08	1.47E-06
Vanadium	2.30E-03	2.19E-06	1.41E-04
Zinc	2.90E-02	2.76E-05	1.77E-03
Total POM[4]	--	--	5.39E-06
Total HAPs	--	--	1.15E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Lochinvar Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	4
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760 hr/yr
Design Capacity	0.65 MMBtu/hr/unit
Number of Boilers	1 Boiler(s)
Gas HHV	1050 BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.27
Carbon Monoxide	84	0.08	0.23
VOC	5.5	0.01	0.01
Sulfur Dioxide	0.6	0.00	0.00
Lead	0.0005	0.00	0.00
PM	7.6	0.01	0.02
PM_{10}	7.6	0.01	0.02
$PM_{2.5}$	7.6	0.01	0.02
Carbon Dioxide	120000	114.29	322.87
Methane	2.3	0.00	0.01
Nitrous Oxide	2.2	0.00	0.01
CO_2e[3]	--	--	324.61
2-Methylnaphthalene	2.40E-05	2.29E-08	6.46E-08
3-Methylcholanthrene	1.80E-06	1.71E-09	4.84E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	4.30E-08
Acenaphthene	1.80E-06	1.71E-09	4.84E-09
Acenaphthylene	1.80E-06	1.71E-09	4.84E-09
Anthracene	2.40E-06	2.29E-09	6.46E-09
Benz(a)anthracene	1.80E-06	1.71E-09	4.84E-09
Benzene	2.10E-03	2.00E-06	5.65E-06
Benzo(a)pyrene	1.20E-06	1.14E-09	3.23E-09
Benzo(b)fluoranthene	1.80E-06	1.71E-09	4.84E-09
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	3.23E-09
Benzo(k)fluoranthene	1.80E-06	1.71E-09	4.84E-09
Butane	2.10E+00	2.00E-03	5.65E-03
Chrysene	1.80E-06	1.71E-09	4.84E-09
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	3.23E-09
Dichlorobenzene	1.20E-03	1.14E-06	3.23E-06
Ethane	3.10E+00	2.95E-03	8.34E-03
Fluoranthene	3.00E-06	2.86E-09	8.07E-09
Fluorene	2.80E-06	2.67E-09	7.53E-09
Formaldehyde	7.50E-02	7.14E-05	2.02E-04
n-Hexane	1.80E+00	1.71E-03	4.84E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	4.84E-09
Naphthalene	6.10E-04	5.81E-07	1.64E-06
Pentane	2.60E+00	2.48E-03	7.00E-03
Phenanthrene	1.70E-05	1.62E-08	4.57E-08
Propane	1.60E+00	1.52E-03	4.30E-03
Pyrene	5.00E-06	4.76E-09	1.35E-08
Toluene	3.40E-03	3.24E-06	9.15E-06
Arsenic	2.00E-04	1.90E-07	5.38E-07
Barium	4.40E-03	4.19E-06	1.18E-05
Beryllium	1.20E-05	1.14E-08	3.23E-08
Cadmium	1.10E-03	1.05E-06	2.96E-06
Chromium	1.40E-03	1.33E-06	3.77E-06
Cobalt	8.40E-05	8.00E-08	2.26E-07
Copper	8.50E-04	8.10E-07	2.29E-06
Manganese	3.80E-04	3.62E-07	1.02E-06
Mercury	2.60E-04	2.48E-07	7.00E-07
Molybdenum	1.10E-03	1.05E-06	2.96E-06
Nickel	2.10E-03	2.00E-06	5.65E-06
Selenium	2.40E-05	2.29E-08	6.46E-08
Vanadium	2.30E-03	2.19E-06	6.19E-06
Zinc	2.90E-02	2.76E-05	7.80E-05
Total POM[4]	--	--	2.37E-07
Total HAPs	--	--	5.08E-03

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Raypack Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	5
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	2.10	MMBtu/hr/unit
Number of Boilers	1	Boiler(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.88
Carbon Monoxide	84	0.08	0.74
VOC	5.5	0.01	0.05
Sulfur Dioxide	0.6	0.00	0.01
Lead	0.0005	0.00	0.00
PM	7.6	0.01	0.07
PM_{10}	7.6	0.01	0.07
$PM_{2.5}$	7.6	0.01	0.07
Carbon Dioxide	120000	114.29	1,051.20
Methane	2.3	0.00	0.02
Nitrous Oxide	2.2	0.00	0.02
CO_2e[3]	--	--	1,056.87
2-Methylnaphthalene	2.40E-05	2.29E-08	2.10E-07
3-Methylcholanthrene	1.80E-06	1.71E-09	1.58E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	1.40E-07
Acenaphthene	1.80E-06	1.71E-09	1.58E-08
Acenaphthylene	1.80E-06	1.71E-09	1.58E-08
Anthracene	2.40E-06	2.29E-09	2.10E-08
Benz(a)anthracene	1.80E-06	1.71E-09	1.58E-08
Benzene	2.10E-03	2.00E-06	1.84E-05
Benzo(a)pyrene	1.20E-06	1.14E-09	1.05E-08
Benzo(b)fluoranthene	1.80E-06	1.71E-09	1.58E-08
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	1.05E-08
Benzo(k)fluoranthene	1.80E-06	1.71E-09	1.58E-08
Butane	2.10E+00	2.00E-03	1.84E-02
Chrysene	1.80E-06	1.71E-09	1.58E-08
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	1.05E-08
Dichlorobenzene	1.20E-03	1.14E-06	1.05E-05
Ethane	3.10E+00	2.95E-03	2.72E-02
Fluoranthene	3.00E-06	2.86E-09	2.63E-08
Fluorene	2.80E-06	2.67E-09	2.45E-08
Formaldehyde	7.50E-02	7.14E-05	6.57E-04
n-Hexane	1.80E+00	1.71E-03	1.58E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	1.58E-08
Naphthalene	6.10E-04	5.81E-07	5.34E-06
Pentane	2.60E+00	2.48E-03	2.28E-02
Phenanthrene	1.70E-05	1.62E-08	1.49E-07
Propane	1.60E+00	1.52E-03	1.40E-02
Pyrene	5.00E-06	4.76E-09	4.38E-08
Toluene	3.40E-03	3.24E-06	2.98E-05
Arsenic	2.00E-04	1.90E-07	1.75E-06
Barium	4.40E-03	4.19E-06	3.85E-05
Beryllium	1.20E-05	1.14E-08	1.05E-07
Cadmium	1.10E-03	1.05E-06	9.64E-06
Chromium	1.40E-03	1.33E-06	1.23E-05
Cobalt	8.40E-05	8.00E-08	7.36E-07
Copper	8.50E-04	8.10E-07	7.45E-06
Manganese	3.80E-04	3.62E-07	3.33E-06
Mercury	2.60E-04	2.48E-07	2.28E-06
Molybdenum	1.10E-03	1.05E-06	9.64E-06
Nickel	2.10E-03	2.00E-06	1.84E-05
Selenium	2.40E-05	2.29E-08	2.10E-07
Vanadium	2.30E-03	2.19E-06	2.01E-05
Zinc	2.90E-02	2.76E-05	2.54E-04
Total POM[4]	--	--	7.73E-07
Total HAPs	--	--	1.65E-02

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Laars Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	6
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	1.20	MMBtu/hr/unit
Number of Boilers	1	Boiler(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.50
Carbon Monoxide	84	0.08	0.42
VOC	5.5	0.01	0.03
Sulfur Dioxide	0.6	0.00	0.00
Lead	0.0005	0.00	0.00
PM	7.6	0.01	0.04
PM_{10}	7.6	0.01	0.04
$PM_{2.5}$	7.6	0.01	0.04
Carbon Dioxide	120000	114.29	600.69
Methane	2.3	0.00	0.01
Nitrous Oxide	2.2	0.00	0.01
CO_2e[3]	--	--	603.93
2-Methylnaphthalene	2.40E-05	2.29E-08	1.20E-07
3-Methylcholanthrene	1.80E-06	1.71E-09	9.01E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	8.01E-08
Acenaphthene	1.80E-06	1.71E-09	9.01E-09
Acenaphthylene	1.80E-06	1.71E-09	9.01E-09
Anthracene	2.40E-06	2.29E-09	1.20E-08
Benz(a)anthracene	1.80E-06	1.71E-09	9.01E-09
Benzene	2.10E-03	2.00E-06	1.05E-05
Benzo(a)pyrene	1.20E-06	1.14E-09	6.01E-09
Benzo(b)fluoranthene	1.80E-06	1.71E-09	9.01E-09
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	6.01E-09
Benzo(k)fluoranthene	1.80E-06	1.71E-09	9.01E-09
Butane	2.10E+00	2.00E-03	1.05E-02
Chrysene	1.80E-06	1.71E-09	9.01E-09
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	6.01E-09
Dichlorobenzene	1.20E-03	1.14E-06	6.01E-06
Ethane	3.10E+00	2.95E-03	1.55E-02
Fluoranthene	3.00E-06	2.86E-09	1.50E-08
Fluorene	2.80E-06	2.67E-09	1.40E-08
Formaldehyde	7.50E-02	7.14E-05	3.75E-04
n-Hexane	1.80E+00	1.71E-03	9.01E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	9.01E-09
Naphthalene	6.10E-04	5.81E-07	3.05E-06
Pentane	2.60E+00	2.48E-03	1.30E-02
Phenanthrene	1.70E-05	1.62E-08	8.51E-08
Propane	1.60E+00	1.52E-03	8.01E-03
Pyrene	5.00E-06	4.76E-09	2.50E-08
Toluene	3.40E-03	3.24E-06	1.70E-05
Arsenic	2.00E-04	1.90E-07	1.00E-06
Barium	4.40E-03	4.19E-06	2.20E-05
Beryllium	1.20E-05	1.14E-08	6.01E-08
Cadmium	1.10E-03	1.05E-06	5.51E-06
Chromium	1.40E-03	1.33E-06	7.01E-06
Cobalt	8.40E-05	8.00E-08	4.20E-07
Copper	8.50E-04	8.10E-07	4.25E-06
Manganese	3.80E-04	3.62E-07	1.90E-06
Mercury	2.60E-04	2.48E-07	1.30E-06
Molybdenum	1.10E-03	1.05E-06	5.51E-06
Nickel	2.10E-03	2.00E-06	1.05E-05
Selenium	2.40E-05	2.29E-08	1.20E-07
Vanadium	2.30E-03	2.19E-06	1.15E-05
Zinc	2.90E-02	2.76E-05	1.45E-04
Total POM[4]	--	--	4.42E-07
Total HAPs	--	--	9.45E-03

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Diesel Engine (Temporary - not on site)	PROJECT NO. 343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET 7
	Hurlock, MD	

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	787	hp
Engine Capacity	587	kW
Fuel Usage[8]	40.2	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	4.72
Carbon Monoxide	0.0055	lb/hp-hr	1.08
VOC[7]	--	--	0.13
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.00
PM	0.0697	lb/MMBtu	0.10
PM_{10}	0.0573	lb/MMBtu	0.08
$PM_{2.5}$	0.0556	lb/MMBtu	0.08
Total Organic Carbon	0.0007	lb/hp-hr	0.14
Non-Methane Hydrocarbons	--	--	0.13
Carbon Dioxide	165	lb/MMBtu	227.25
Methane[9]	6.3E-05	lb/hp-hr	1.25E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	1.82E-03
CO_2e[6]		--	228.08
Benzene	7.76E-04	lb/MMBtu	1.07E-03
Toluene	2.81E-04	lb/MMBtu	3.87E-04
Xylenes	1.93E-04	lb/MMBtu	2.66E-04
Propylene	2.79E-03	lb/MMBtu	3.84E-03
Formaldehyde	7.89E-05	lb/MMBtu	1.09E-04
Acetaldehyde	2.52E-05	lb/MMBtu	3.47E-05
Acrolein	7.88E-06	lb/MMBtu	1.09E-05
Naphthalene	1.30E-04	lb/MMBtu	1.79E-04
Acenaphthylene	9.23E-06	lb/MMBtu	1.27E-05
Acenaphthene	4.68E-06	lb/MMBtu	6.45E-06
Fluorene	1.28E-05	lb/MMBtu	1.76E-05
Phenanthrene	4.08E-05	lb/MMBtu	5.62E-05
Anthracene	1.23E-06	lb/MMBtu	1.69E-06
Fluoranthene	4.03E-06	lb/MMBtu	5.55E-06
Pyrene	3.71E-06	lb/MMBtu	5.11E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	8.57E-07
Chrysene	1.53E-06	lb/MMBtu	2.11E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	1.53E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	3.00E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	3.54E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	5.70E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	4.77E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	7.66E-07
Total PAHs		--	2.91E-04
Total HAPs		--	2.17E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Diesel Emergency Generator - Inside	PROJECT NO. 343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET 8
	Hurlock, MD	

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	671	hp
Engine Capacity	500	kW
Fuel Usage[8]	34.3	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	4.02
Carbon Monoxide	0.0055	lb/hp-hr	0.92
VOC[7]	--	--	0.11
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.00
PM	0.0697	lb/MMBtu	0.08
PM_{10}	0.0573	lb/MMBtu	0.07
$PM_{2.5}$	0.0556	lb/MMBtu	0.07
Total Organic Carbon	0.0007	lb/hp-hr	0.12
Non-Methane Hydrocarbons	--	--	0.11
Carbon Dioxide	165	lb/MMBtu	193.61
Methane[9]	6.3E-05	lb/hp-hr	1.06E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	1.55E-03
CO_2e[6]		--	194.32
Benzene	7.76E-04	lb/MMBtu	9.11E-04
Toluene	2.81E-04	lb/MMBtu	3.30E-04
Xylenes	1.93E-04	lb/MMBtu	2.26E-04
Propylene	2.79E-03	lb/MMBtu	3.27E-03
Formaldehyde	7.89E-05	lb/MMBtu	9.26E-05
Acetaldehyde	2.52E-05	lb/MMBtu	2.96E-05
Acrolein	7.88E-06	lb/MMBtu	9.25E-06
Naphthalene	1.30E-04	lb/MMBtu	1.53E-04
Acenaphthylene	9.23E-06	lb/MMBtu	1.08E-05
Acenaphthene	4.68E-06	lb/MMBtu	5.49E-06
Fluorene	1.28E-05	lb/MMBtu	1.50E-05
Phenanthrene	4.08E-05	lb/MMBtu	4.79E-05
Anthracene	1.23E-06	lb/MMBtu	1.44E-06
Fluoranthene	4.03E-06	lb/MMBtu	4.73E-06
Pyrene	3.71E-06	lb/MMBtu	4.35E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	7.30E-07
Chrysene	1.53E-06	lb/MMBtu	1.80E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	1.30E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	2.56E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	3.02E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	4.86E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	4.06E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	6.52E-07
Total PAHs		--	2.48E-04
Total HAPs		--	1.85E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Diesel Emergency Generator 2 (Inside)	PROJECT NO. 343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET 9
	Hurlock, MD	

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	349	hp
Engine Capacity	260	kW
Fuel Usage[8]	17.8	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.031	lb/hp-hr	2.70
Carbon Monoxide	0.0068	lb/hp-hr	0.59
VOC[7]	--	--	0.26
Sulfur Dioxide	2.90E-01	lb/MMBtu	0.18
PM[4]	0.0022	lb/hp-hr	0.19
PM_{10}[4]	0.0022	lb/hp-hr	0.19
$PM_{2.5}$[4]	0.0022	lb/hp-hr	0.19
Total Organic Carbon[9]	0.0025	lb/hp-hr	0.22
Non-Methane Hydrocarbons	--	--	0.22
Carbon Dioxide	164	lb/MMBtu	100.07
Methane[5]	3.0E-03	kg/MMBtu	0.00
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	0.00
CO_2e[6]	--		100.39
Aldehydes	4.63E-04	lb/hp-hr	4.04E-02
1,3-Butadiene	3.91E-05	lb/MMBtu	2.39E-05
Benzene	9.33E-04	lb/MMBtu	5.69E-04
Toluene	4.09E-04	lb/MMBtu	2.50E-04
Xylenes	2.85E-04	lb/MMBtu	1.74E-04
Propylene	2.58E-03	lb/MMBtu	1.57E-03
Formaldehyde	1.18E-03	lb/MMBtu	7.20E-04
Acetaldehyde	7.67E-04	lb/MMBtu	4.68E-04
Acrolein	9.25E-05	lb/MMBtu	5.64E-05
Naphthalene	8.48E-05	lb/MMBtu	5.17E-05
Acenaphthylene	5.06E-06	lb/MMBtu	3.09E-06
Acenaphthene	1.42E-06	lb/MMBtu	8.66E-07
Fluorene	2.92E-05	lb/MMBtu	1.78E-05
Phenanthrene	2.94E-05	lb/MMBtu	1.79E-05
Anthracene	1.87E-06	lb/MMBtu	1.14E-06
Fluoranthene	7.61E-06	lb/MMBtu	4.64E-06
Pyrene	4.78E-06	lb/MMBtu	2.92E-06
Benzo(a)anthracene	1.68E-06	lb/MMBtu	1.03E-06
Chrysene	3.53E-07	lb/MMBtu	2.15E-07
Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	6.05E-08
Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	9.46E-08
Benzo(a)pyrene	1.88E-07	lb/MMBtu	1.15E-07
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	2.29E-07
Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	3.56E-07
Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	2.98E-07
Total PAHs	--		1.03E-04
Total HAPs	--		2.36E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.3. Tables 3.3-1 and 3.3-2. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] PM Emission factors only available for PM_{10}. Assume $PM=PM_{10}=PM_{2.5}$.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is equal to NMHC + Aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.3.

[9] U.S. EPA AP-42 Ch. 3.3. Table 3.3-1, Exhaust + Crankcase

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Diesel Emergency Generator (Outside) PROJECT NO. 343-365

PROJECT Perdue Foods, LLC. - Hurlock Complex SHEET 10

Hurlock, MD

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	671	hp
Engine Capacity	500	kW
Fuel Usage[8]	34.3	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	16.09	4.02
Carbon Monoxide	0.0055	lb/hp-hr	3.69	0.92
VOC[7]	--	--	0.43	0.11
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.01	0.00
PM	0.0697	lb/MMBtu	0.33	0.08
PM_{10}	0.0573	lb/MMBtu	0.27	0.07
$PM_{2.5}$	0.0556	lb/MMBtu	0.26	0.07
Total Organic Carbon	0.0007	lb/hp-hr	0.47	0.12
Non-Methane Hydrocarbons	--	--	0.43	0.11
Carbon Dioxide	165	lb/MMBtu	774.44	193.61
Methane[9]	6.3E-05	lb/hp-hr	4.25E-02	1.06E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	6.21E-03	1.55E-03
CO_2e[6]		--	777.35	194.32
Benzene	7.76E-04	lb/MMBtu	3.64E-03	9.11E-04
Toluene	2.81E-04	lb/MMBtu	1.32E-03	3.30E-04
Xylenes	1.93E-04	lb/MMBtu	9.06E-04	2.26E-04
Propylene	2.79E-03	lb/MMBtu	1.31E-02	3.27E-03
Formaldehyde	7.89E-05	lb/MMBtu	3.70E-04	9.26E-05
Acetaldehyde	2.52E-05	lb/MMBtu	1.18E-04	2.96E-05
Acrolein	7.88E-06	lb/MMBtu	3.70E-05	9.25E-06
Naphthalene	1.30E-04	lb/MMBtu	6.10E-04	1.53E-04
Acenaphthylene	9.23E-06	lb/MMBtu	4.33E-05	1.08E-05
Acenaphthene	4.68E-06	lb/MMBtu	2.20E-05	5.49E-06
Fluorene	1.28E-05	lb/MMBtu	6.01E-05	1.50E-05
Phenanthrene	4.08E-05	lb/MMBtu	1.91E-04	4.79E-05
Anthracene	1.23E-06	lb/MMBtu	5.77E-06	1.44E-06
Fluoranthene	4.03E-06	lb/MMBtu	1.89E-05	4.73E-06
Pyrene	3.71E-06	lb/MMBtu	1.74E-05	4.35E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	2.92E-06	7.30E-07
Chrysene	1.53E-06	lb/MMBtu	7.18E-06	1.80E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	5.21E-06	1.30E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	1.02E-06	2.56E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	1.21E-06	3.02E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	1.94E-06	4.86E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.62E-06	4.06E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	2.61E-06	6.52E-07
Total PAHs		--	9.93E-04	2.48E-04
Total HAPs		--	7.39E-03	1.85E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Diesel Emergency Generator Grain Pile	PROJECT NO. 343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET 11
	Hurlock, MD	

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	148	hp
Engine Capacity	110	kW
Fuel Usage[8]	7.5	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.031	lb/hp-hr	1.14
Carbon Monoxide	0.0068	lb/hp-hr	0.25
VOC[7]	--	--	0.11
Sulfur Dioxide	2.90E-01	lb/MMBtu	0.07
PM[4]	0.0022	lb/hp-hr	0.08
PM_{10}[4]	0.0022	lb/hp-hr	0.08
$PM_{2.5}$[4]	0.0022	lb/hp-hr	0.08
Total Organic Carbon[9]	0.0025	lb/hp-hr	0.09
Non-Methane Hydrocarbons	--	--	0.09
Carbon Dioxide	164	lb/MMBtu	42.34
Methane[5]	3.0E-03	kg/MMBtu	0.00
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	0.00
CO_2e[6]	--		42.47
Aldehydes	4.63E-04	lb/hp-hr	1.71E-02
1,3-Butadiene	3.91E-05	lb/MMBtu	1.01E-05
Benzene	9.33E-04	lb/MMBtu	2.41E-04
Toluene	4.09E-04	lb/MMBtu	1.06E-04
Xylenes	2.85E-04	lb/MMBtu	7.36E-05
Propylene	2.58E-03	lb/MMBtu	6.66E-04
Formaldehyde	1.18E-03	lb/MMBtu	3.05E-04
Acetaldehyde	7.67E-04	lb/MMBtu	1.98E-04
Acrolein	9.25E-05	lb/MMBtu	2.39E-05
Naphthalene	8.48E-05	lb/MMBtu	2.19E-05
Acenaphthylene	5.06E-06	lb/MMBtu	1.31E-06
Acenaphthene	1.42E-06	lb/MMBtu	3.67E-07
Fluorene	2.92E-05	lb/MMBtu	7.54E-06
Phenanthrene	2.94E-05	lb/MMBtu	7.59E-06
Anthracene	1.87E-06	lb/MMBtu	4.83E-07
Fluoranthene	7.61E-06	lb/MMBtu	1.96E-06
Pyrene	4.78E-06	lb/MMBtu	1.23E-06
Benzo(a)anthracene	1.68E-06	lb/MMBtu	4.34E-07
Chrysene	3.53E-07	lb/MMBtu	9.11E-08
Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	2.56E-08
Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	4.00E-08
Benzo(a)pyrene	1.88E-07	lb/MMBtu	4.85E-08
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	9.68E-08
Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	1.50E-07
Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	1.26E-07
Total PAHs	--		4.34E-05
Total HAPs	--		1.00E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.3. Tables 3.3-1 and 3.3-2. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] PM Emission factors only available for PM_{10}. Assume $PM=PM_{10}=PM_{2.5}$.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is equal to NMHC + Aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.3.

[9] U.S. EPA AP-42 Ch. 3.3. Table 3.3-1, Exhaust + Crankcase

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Berico Dryer Burner	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	12
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	38.00	MMBtu/hr/unit
Number of Boilers	1	Burner(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	15.85
Carbon Monoxide	84	0.08	13.32
VOC	5.5	0.01	0.87
Sulfur Dioxide	0.6	0.00	0.10
Lead	0.0005	0.00	0.00
PM	7.6	0.01	1.20
PM_{10}	7.6	0.01	1.20
$PM_{2.5}$	7.6	0.01	1.20
Carbon Dioxide	120000	114.29	19,021.71
Methane	2.3	0.00	0.36
Nitrous Oxide	2.2	0.00	0.35
CO_2e[3]	--	--	19,124.34
2-Methylnaphthalene	2.40E-05	2.29E-08	3.80E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	2.85E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	2.54E-06
Acenaphthene	1.80E-06	1.71E-09	2.85E-07
Acenaphthylene	1.80E-06	1.71E-09	2.85E-07
Anthracene	2.40E-06	2.29E-09	3.80E-07
Benz(a)anthracene	1.80E-06	1.71E-09	2.85E-07
Benzene	2.10E-03	2.00E-06	3.33E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	1.90E-07
Benzo(b)fluoranthene	1.80E-06	1.71E-09	2.85E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	1.90E-07
Benzo(k)fluoranthene	1.80E-06	1.71E-09	2.85E-07
Butane	2.10E+00	2.00E-03	3.33E-01
Chrysene	1.80E-06	1.71E-09	2.85E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	1.90E-07
Dichlorobenzene	1.20E-03	1.14E-06	1.90E-04
Ethane	3.10E+00	2.95E-03	4.91E-01
Fluoranthene	3.00E-06	2.86E-09	4.76E-07
Fluorene	2.80E-06	2.67E-09	4.44E-07
Formaldehyde	7.50E-02	7.14E-05	1.19E-02
n-Hexane	1.80E+00	1.71E-03	2.85E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	2.85E-07
Naphthalene	6.10E-04	5.81E-07	9.67E-05
Pentane	2.60E+00	2.48E-03	4.12E-01
Phenanthrene	1.70E-05	1.62E-08	2.69E-06
Propane	1.60E+00	1.52E-03	2.54E-01
Pyrene	5.00E-06	4.76E-09	7.93E-07
Toluene	3.40E-03	3.24E-06	5.39E-04
Arsenic	2.00E-04	1.90E-07	3.17E-05
Barium	4.40E-03	4.19E-06	6.97E-04
Beryllium	1.20E-05	1.14E-08	1.90E-06
Cadmium	1.10E-03	1.05E-06	1.74E-04
Chromium	1.40E-03	1.33E-06	2.22E-04
Cobalt	8.40E-05	8.00E-08	1.33E-05
Copper	8.50E-04	8.10E-07	1.35E-04
Manganese	3.80E-04	3.62E-07	6.02E-05
Mercury	2.60E-04	2.48E-07	4.12E-05
Molybdenum	1.10E-03	1.05E-06	1.74E-04
Nickel	2.10E-03	2.00E-06	3.33E-04
Selenium	2.40E-05	2.29E-08	3.80E-06
Vanadium	2.30E-03	2.19E-06	3.65E-04
Zinc	2.90E-02	2.76E-05	4.60E-03
Total POM[4]	--	--	1.40E-05
Total HAPs	--	--	2.99E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Brock Dryer Burner	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	13
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760 hr/yr
Design Capacity	61.00 MMBtu/hr/unit
Number of Boilers	1 Burner(s)
Gas HHV	1050 BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	25.45
Carbon Monoxide	84	0.08	21.37
VOC	5.5	0.01	1.40
Sulfur Dioxide	0.6	0.00	0.15
Lead	0.0005	0.00	0.00
PM	7.6	0.01	1.93
PM_{10}	7.6	0.01	1.93
$PM_{2.5}$	7.6	0.01	1.93
Carbon Dioxide	120000	114.29	30,534.86
Methane	2.3	0.00	0.59
Nitrous Oxide	2.2	0.00	0.56
CO_2e[3]	--	--	30,699.59
2-Methylnaphthalene	2.40E-05	2.29E-08	6.11E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	4.58E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	4.07E-06
Acenaphthene	1.80E-06	1.71E-09	4.58E-07
Acenaphthylene	1.80E-06	1.71E-09	4.58E-07
Anthracene	2.40E-06	2.29E-09	6.11E-07
Benz(a)anthracene	1.80E-06	1.71E-09	4.58E-07
Benzene	2.10E-03	2.00E-06	5.34E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	3.05E-07
Benzo(b)fluoranthene	1.80E-06	1.71E-09	4.58E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	3.05E-07
Benzo(k)fluoranthene	1.80E-06	1.71E-09	4.58E-07
Butane	2.10E+00	2.00E-03	5.34E-01
Chrysene	1.80E-06	1.71E-09	4.58E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	3.05E-07
Dichlorobenzene	1.20E-03	1.14E-06	3.05E-04
Ethane	3.10E+00	2.95E-03	7.89E-01
Fluoranthene	3.00E-06	2.86E-09	7.63E-07
Fluorene	2.80E-06	2.67E-09	7.12E-07
Formaldehyde	7.50E-02	7.14E-05	1.91E-02
n-Hexane	1.80E+00	1.71E-03	4.58E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	4.58E-07
Naphthalene	6.10E-04	5.81E-07	1.55E-04
Pentane	2.60E+00	2.48E-03	6.62E-01
Phenanthrene	1.70E-05	1.62E-08	4.33E-06
Propane	1.60E+00	1.52E-03	4.07E-01
Pyrene	5.00E-06	4.76E-09	1.27E-06
Toluene	3.40E-03	3.24E-06	8.65E-04
Arsenic	2.00E-04	1.90E-07	5.09E-05
Barium	4.40E-03	4.19E-06	1.12E-03
Beryllium	1.20E-05	1.14E-08	3.05E-06
Cadmium	1.10E-03	1.05E-06	2.80E-04
Chromium	1.40E-03	1.33E-06	3.56E-04
Cobalt	8.40E-05	8.00E-08	2.14E-05
Copper	8.50E-04	8.10E-07	2.16E-04
Manganese	3.80E-04	3.62E-07	9.67E-05
Mercury	2.60E-04	2.48E-07	6.62E-05
Molybdenum	1.10E-03	1.05E-06	2.80E-04
Nickel	2.10E-03	2.00E-06	5.34E-04
Selenium	2.40E-05	2.29E-08	6.11E-06
Vanadium	2.30E-03	2.19E-06	5.85E-04
Zinc	2.90E-02	2.76E-05	7.38E-03
Total POM[4]	--	--	2.24E-05
Total HAPs	--	--	4.81E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

	Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Truck Receiving Pit #2 - Feedmill Ingredients	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	14
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	505,665 tons/yr
Control Efficiency[2]	99 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.017	4.30	0.0430
PM_{10}	0.0025	0.63	0.0063
$PM_{2.5}$[4]	0.000425	0.11	0.0011

Notes

[1] Per Facility Personnel.

[2] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Grain receiving".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Rail Receiving	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	15
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	18,000 tons/yr
Control Efficiency[2]	99.99%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.017	0.15	0.00
PM_{10}	0.0025	0.02	0.00
$PM_{2.5}$[4]	0.000425	0.00	0.00

Notes

[1] Per Facility Personnel.

[2] Rail receiving is controlled via a proposed vortex spout.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Grain receiving".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Bulk Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	16
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,165 tons/yr
Bulk Bin Capacity[1]	26-110 tons/bin
Number of Bulk Bins[1]	23 bins
Control Efficiency[2]	0.0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	6.56	6.56
PM_{10}	0.0063	1.65	1.65
$PM_{2.5}$	0.0011	0.29	0.29

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Micro Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	17
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	435 tons/yr
Number of Micro Bins[1]	16 bins
Control Efficiency[2]	0.0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	0.01	0.01
PM_{10}	0.0063	0.00	0.00
$PM_{2.5}$	0.0011	0.00	0.00
Chromium[4]	6.67E-06	1.45E-06	1.45E-06
Manganese[4]	3.35E-03	7.29E-04	7.29E-04

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Storage Tanks	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	18
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,165 tons/yr
Number of Grain Storage Tanks[1]	3 Tanks
Control Efficiency[2]	0%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	6.56	6.56
PM_{10}	0.0063	1.65	1.65
$PM_{2.5}$	0.0011	0.29	0.29

Notes

[1] Per Facility Personnel

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Finished Feed Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	19
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,600 tons/yr
Number of Micro Bins[1]	10 bins
Control Efficiency[2]	0.0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	6.57	6.57
PM_{10}	0.0063	1.66	1.66
$PM_{2.5}$	0.0011	0.29	0.29
Chromium[4]	5.52E-09	1.45E-06	1.45E-06
Manganese[4]	2.77E-06	7.29E-04	7.29E-04

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Pneumatic Lines	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	20
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	1,500 tons/yr
Control Efficiency[2]	99.9 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.0099	7.43E-03	7.42E-06
PM_{10}	0.0016	1.20E-03	1.20E-06
$PM_{2.5}$[4]	0.0006	4.50E-04	4.50E-07

Notes

[1] Per Facility Personnel.

[2] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses). Baghouse vents inside the building adding an additional 90% control.

[3] U.S. EPA AP-42 Ch. 11.19.2 Table 11.19.2-4 Emission Factors for Particulates for Pulverized Mineral Processing Operations (Product Storage with Fabric Filter Control).

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Trace Additives	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	21
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	435 tons/yr
Control Efficiency[2]	0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	0.01	0.0133
PM_{10}	0.034	0.01	0.0074
$PM_{2.5}$[4]	0.0058	0.00	0.0013
Chromium[5]	1.63E-05	3.55E-06	3.55E-06
Manganese[5]	8.17E-03	1.78E-03	1.78E-03

Notes

[1] Per Facility Personnel.

[2] Per Facility Personnel, additives, stored in bags, enter the mixer via the operator. This is assumed to be an uncontrolled process.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

[5] Per Facility Personnel, the additives contain trace metals Cr (267 ppm per pound) and Mn (13.4% per pound). This composition was applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mixer	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	22
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,600 tons/yr
Control Efficiency[2]	80 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	16.03	3.2062
PM_{10}	0.034	8.94	1.7870
$PM_{2.5}$[4]	0.0058	1.52	0.3048
Chromium[5]	1.35E-08	3.54E-06	7.08E-07
Manganese[5]	6.77E-06	1.78E-03	3.56E-04

Notes

[1] Per Facility Personnel.

[2] Operations are fully enclosed; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Hammermills	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	23
	Hurlock, MD		

Assumptions:

Number of Hammermills[1]	3	hammermill(s)
Maximum Annual Throughput[1]	525,165	tons/yr
Baghouse Control Efficiency[4]	99%	

Pollutant	Controlled Emission Factor[2,3]	Controlled Annual Emission Rate	Uncontrolled Annual Emission Rate[3]
	lb/ton grain handled	(ton/yr)	(ton/yr)
PM	0.012	3.15	315.10
PM_{10}[2]	0.003	0.79	78.77
$PM_{2.5}$[2]	0.001	0.13	13.39

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Hammermill, Baghouse"

[3] Only PM factor is avaliable, as per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM10 emissions are 25% of PM emissions and PM2.5 emissions are 17% of PM10 emissions.

[4] The emission factor is based on baghouse control. Uncontrolled emissions are based on 99% baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Pelletizing - Pellet Cooler(s)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	24
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,600 tons/yr
Number of Coolers[1]	2 Cooler(s)
Cyclone Control Efficiency[4]	90%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Controlled Annual Emission Rate (ton/yr)	Uncontrolled Annual Emission Rate[4] (ton/yr)
PM	0.3600	94.61	946.08
PM_{10}[3]	0.0900	23.65	236.52
$PM_{2.5}$[3]	0.0153	4.02	40.21
Chromium[5]	7.96E-08	2.09E-05	2.09E-04
Manganese[5]	3.99E-05	1.05E-02	1.05E-01

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities for Animal feed mills "Pellet Cooler". The emission factor is based on cyclone control.

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM10 emissions are 25% of PM emissions and PM2.5 emissions are 17% of PM10 emissions.

[4] The emission factor is based on cyclone control. Uncontrolled emission factor is based on 90% cyclone control efficiency from EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Headhouse & Material Handling (Feedmill)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	25
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	1,576,800 tons/yr
Control Efficiency[2]	80 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	48.09	9.6185
PM_{10}	0.034	26.81	5.3611
$PM_{2.5}$[4]	0.0058	4.57	0.9145
Chromium[5]	4.49E-09	1.18E-06	2.36E-07
Manganese[5]	2.26E-06	5.93E-04	1.19E-04

Notes

[1] Per Facility Personnel.

[2] All operations are fully enclosed or underground; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions. The additives enter the process during the mixing stage which is near the completion of the final product.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Finished Feed Loadout 1	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	26
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,600 tons/yr
Dust Sock Control Efficiency[1]	50%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.0033	0.87	0.43
PM_{10}	0.0008	0.21	0.11
$PM_{2.5}$[3]	0.000136	0.04	0.02
Chromium[4]	7.29E-10	1.92E-07	9.58E-08
Manganese[4]	3.66E-07	9.62E-05	4.81E-05

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Feed shipping".

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM2.5 emissions are 17% of PM10 emissions.

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Truck Receiving Pit #1 and #3	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	27
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	105,000 tons/yr
Baghouse Control Efficiency[3]	99%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.18	9.45	0.09
PM_{10}	0.059	3.10	0.03
$PM_{2.5}$	0.01	0.53	0.01

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain receiving , Straight Truck".

[3] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

	Civil & Environmental Consultants, Inc.		
SUBJECT	PTE Calculations - Headhouse & Material Handling (Grain)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	28
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	315,000 tons/yr
Control Efficiency[2]	80 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	9.61	1.9215
PM_{10}	0.034	5.36	1.0710
$PM_{2.5}$[4]	0.0058	0.91	0.1827

Notes

[1] Per Facility Personnel.

[2] All operations are fully enclosed or underground; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Headhouse & Material Handling Nonenclosed	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	29
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	52,500 tons/yr
Control Efficiency[2]	0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	3.20	3.2025
PM_{10}	0.034	1.79	1.7850
$PM_{2.5}$[4]	0.0058	0.30	0.3045

Notes

[1] Per Facility Personnel. Calculation accounts for pile loading and unloading.

[2] Material handling operations related to the outdoor storage piles are not controlled.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM10 emissions.

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Temporary Outdoor Grain Storage
PROJECT Perdue Foods, LLC. - Hurlock Complex
Hurlock, MD

PROJECT NO. 343-365
SHEET 30

Assumptions:

Storage Pile Footprint[1]	2.95	acres
Control Efficiency[5]	75	%

Pollutant	Emission Factor[2,3] (lb/day/acre)	Uncontrolled Annual Emission Rate[4] (ton/yr)	Controlled Annual Emission Rate[5] (ton/yr)
PM	16.96	9.13	2.28
PM_{10}	4.24	2.28	0.57
$PM_{2.5}$	0.72	0.39	0.10

Notes

[1] Per Facility Personnel. The storage pile footprint consists of two outdoor grain storage piles. One 0.3 acres and one 2.65 acres.

[2] Emission factor emissions were calculated based on calculation methodology in "Control of Open Fugitive Dust Sources", September 1988 (EPA-450/3-88-008), Wind Emissions from Continuously Active Piles, equation 4-9 on page 98. EF = 1.7*(s/1.5)*[(365-P)/235]*(f/15)

s = 9.2
p = 120
f = 23 — %, percent of time wind speed exceeds 12 mph, per Iowa Environmental Mesonet, Custom Wind Roses for Cambridge MD from 2015 to 2024. Data for wind speeds >12

E = 16.96

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM_{10} emissions are 25% of PM emissions and $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[4] Emissions (tons/year) = E (lb/day/acre) * Exposed area (acres) * (365 days/year) * (1 ton / 2,000 lb)

[5] Per South Coast Air Quality Management District Table XI-E Mitigation Measure Examples: Fugitive Dust From Storage Piles, storage pile wind erosion control efficiency of 75% when the pile has a 3-sided enclosure. The grain storage pile has a 3-sided Jersey barrier to block wind and is always tarped when not loading out to prevent the weathering of the grain.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Grain Drying	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	31
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	105,000 tons/yr
Number of Grain Dryers[1]	2 Dryer
Control Efficiency[2]	50%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Total Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.22	11.55	5.78
PM_{10}	0.055	2.89	1.44
$PM_{2.5}$	0.0094	0.49	0.25

Notes

[1] Per Facility Personnel.

[2] Dryers are equipped with walls and mesh screens.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain Drying, Column dryer"

[4] Dryer(s) are heated using natural gas burners, for fuel combustion emissions see the burners.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Storage Tanks	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	32
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	105,000 tons/yr
Control Efficiency[2]	0.0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	1.31	1.31
PM_{10}	0.0063	0.33	0.33
$PM_{2.5}$	0.0011	0.06	0.06

Notes

[1] Per Facility Personnel.

[2] Per Facility Personnel storage tanks are not controlled.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Grain Loadout #2 (Tank 10) and Tank 7	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	33
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	105,000 tons/yr
Dust Sock Control Efficiency[1]	50%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.086	4.52	2.26
PM_{10}	0.029	1.52	0.76
$PM_{2.5}$	0.0049	0.26	0.13

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain shipping, Truck (unspecified)".

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Grain Loadout #3 (Rail)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	34
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	105,000 tons/yr
Proposed Vortex Spout Control Efficiency[1]	99.99%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Annual Emission Rate (ton/yr)
PM	0.027	1.42	0.00
PM_{10}	0.0022	0.12	0.00
$PM_{2.5}$	0.00037	0.02	0.00

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain shipping, Railcar".

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Facility Roadways
PROJECT Perdue Foods, LLC. - Hurlock Complex
Hurlock, MD

PROJECT NO. 343-365
SHEET 35

Symbol	Description	PE Value	PM10 Value	PM2.5 Value	Units	Basis
k	Paved Road Particulate Size Multiplier	0.011	0.0022	0.00054	lb/VMT	AP-42, Section 13.2.1-1
k	Unpaved Road Particulate Size Multiplier	4.9	1.5	0.15	lb/VMT	AP-42, Table 13.2.2-2
sL	Paved Road Silt Loading	1.1	1.1	1.1	g/m²	AP-42, Table 13.2.1-3
s	Unpaved Road Surface Material Silt Content	4.80	4.80	4.80	%	AP-42, Table 13.2.2-1
a	Unpaved Road emperical constant a	0.7	0.9	0.9	-	AP-42, Table 13.2.2-2
b	Unpaved Road emperical constant b	0.45	0.45	0.45	-	AP-42, Table 13.2.2-2
W	Average Vehicle Weight	28.66	28.66	28.66	tons	Facility Personnel
VMT	Paved Road Vehicle Miles Traveled	4,834	4,834	4,834	miles	Facility Personnel
VMT	Unpaved Vehicle Miles Traveled	3,471	3,471	3,471	miles	Facility Personnel
P	Number of Wet Days	120	120	120	days	AP-42, Section 13.2.1-2
CE	Paved Roadway Control Efficiency	0%	0%	0%	%	-
CE	Unpaved Roadway Control Efficiency	0%	0%	0%	%	-
Max Hrs	Maximum Hours of Operation	8,760	8,760	8,760	hrs/year	-
Conversion	Conversion	2,000	2,000	2,000	lbs/ton	-

Daily Basis Emission Factor Calculation for Paved Roadways (AP-42, Section 13.2.1 Equation 2)
EF = k(sL)^0.91 x (W)^1.02 x (1 - P/4N)

Description	PE Value	PM10 Value	PM2.5 Value	Units
Paved Roadway Emission Factor	0.34	0.07	0.02	lb/VMT
Paved Roadway Uncontrolled Emissions	0.82	0.16	0.04	tons/year
	0.19	0.04	0.01	lbs/hr
Paved Roadway Controlled Emissions	0.82	0.16	0.04	tons/year
	0.19	0.04	0.01	lbs/hr

Emission Factor Calculation for Unpaved Roadways at Industrial Sites (AP-42 Chapter 13.2.2 Unpaved Roads, Equations 1a and 2)
E = k*([s/12]^a)*([W/3]^b)*[365-P]/365)

Description	PE Value	PM10 Value	PM2.5 Value	Units
Unpaved Roadway Emission Factor	4.782	1.219	0.122	lb/VMT
Unpaved Roadway Uncontrolled Emissions	8.299	2.115	0.211	tons/year
	1.895	0.483	0.0483	lbs/hr
Unpaved Roadway Controlled Emissions	8.299	2.115	0.211	tons/year
	1.895	0.483	0.0483	lbs/hr

Description	PE Value	PM10 Value	PM2.5 Value	Units
Total Roadway Uncontrolled Emissions	0.82	2.278	0.252	tons/year
	0.19	0.520	0.057	lbs/hr
Total Roadway Controlled Emissions	0.82	2.278	0.252	tons/year
	0.19	0.520	0.057	lbs/hr

Truck Type	Max Annual Number of Trucks (trucks/yr)	Average Truck Weight (tons)	Approx. Round Trip Miles Paved (miles/truck)	Approx. Annual Miles Traveled Paved (miles/yr)	Approx. Round Trip Miles Unpaved (miles/truck)	Approx. Annual Miles Traveled Unpaved (miles/yr)
Feed Ingredients Truck (Salt and Methionine)	12	28	0.30	4	0.21	3
Feedmill Ingredients - Wheat	500	28	0.30	148	0.21	106
Feedmill Ingredients - Corn	2,600	28	0.30	768	0.21	552
Feedmill Haul Trucks	7,800	28	0.30	2,305	0.21	1,655
Wheat Haul Rail - Feedmill	50	91	0.30	15	0.21	11
Corn Haul Rail - Feedmill	250	91	0.30	74	0.21	53
Grain Trucks Hauled /Loaded Out - Soybeans	4,800	28	0.30	1,418	0.21	1,018
Grain Trucks Hauled /Loaded Out - Corn	350	28	0.30	103	0.21	74
Total	16,362	29	--	4,834	--	3,471

ATTACHMENT E

PERMIT TO CONSTRUCT – GRAIN LEGS & COOLER – PELLET LINE 1

March 7, 2025

Susan Nash
Regulatory and Compliance Engineer Sr.
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard
Baltimore MD 21203

RE: Perdue AgriBusiness – Hurlock Feedmill, Grain & Hatchery
Permit to Construct: Pit #1 Receiving Jump Leg, Pit #3 Receiving Leg, Dry Leg Replacement, and Cooler- Pellet Line 1

Ms. Nash:

Perdue AgriBusiness LLC (Perdue) is submitting three Permits to Construct applications concurrently with the sitewide application for different elevator leg installations at the facility located at 37 Delaware Avenue, Hurlock, Maryland. The proposed grain elevator leg installations would include a jump receiving leg for Pit #1, Pit #3 Receiving Leg, Dry Leg Replacement, and a replacement in-kind of the cooler for Pellet Line 1.

Please let me know if you have any further questions.

Sincerely,

Jessie Long

Digitally signed by: Jessie Long
DN: CN = Jessie Long email = jessie.long@perdue.com C = AD
Date: 2025.03.07 10:11:20 -05'00'

Jessie Long
Senior Environmental Manager

cc: Civil and Environmental Consultants, Inc.
Jaclyn Mays, Director of Environmental Compliance and Services

Attachments:

Permit Application Forms
Workman's Compensation Insurance
Process Flow Diagram
Site Plan
Emissions Calculations

AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Perdue Agribusiness LLC
COMPANY ADDRESS:	6906 Zion Church Road, Salisbury, MD 21804
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Hurlock Grain
PREMISES ADDRESS:	37 Delaware Avenue, Hurlock MD 21643
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Jessie Long
JOB TITLE:	Sr. Environmental Manager
PHONE NUMBER:	410-543-3296
EMAIL ADDRESS:	jessie.long@perdue.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Install receiving jump leg for Pit #1 on Brock dryer side	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

☒ Application package cover letter describing the proposed project

☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. X Form 5
No. _____ Form 5T
No. _____ Form 5EP
No. _____ Form 6
No. _____ Form 10
No. _____ Form 11
No. _____ Form 41
No. _____ Form 42
No. _____ Form 44

☐ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☒ Material balance data and all emissions calculations

☐ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.

☐ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission (1)

☐ Documentation that the proposed installation complies with local zoning and land use requirements (2)

(1) Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

(2) Required for applications subject to Expanded Public Participation Requirements.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ▪ Air Quality Permits Program
1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

APPLICATION FOR FUEL BURNING EQUIPMENT

Information Regarding Public Outreach

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Air and Radiation Management Administration ▫ Air Quality Permits Program

APPLICATION FOR PROCESSING/ MANUFACTURING EQUIPMENT

Permit to Construct q Registration Update q Initial Registration q

1A. Owner of Equipment/Company Name

____Perdue AgriBusiness LLC

Mailing Address

_6906 Zion Church Rd._____

Street Address

__Salisbury_____MD_____21804_____
___City State Zip

Telephone Number
(_____410-341-2055 ___)

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.03.07 10:11:39 -05'00'

Jessie Long, Senior Environmental Manager
Print Name and Title Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) Premises No. (3-6)
Registration Class (7) Equipment No. (8-11)
Data Year (12-13) Application Date

1B. Equipment Location and Telephone Number (if different from above)

_____Hurlock Grain, Feedmill & Hatchery, 37 Delaware Avenue_____
Street Number and Street Name

___Hurlock_____MD_____21643____-____ (__410___) __943-0512_____-____
City/Town State Zip Telephone Number

_____
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Warrior 15k BPH Leg

5. Workmen's Compensation Coverage_____MWC31817225_____01/01/2026_____
Binder/Policy Number Expiration Date

Company_____Old Republic Insurance Company_____

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment_____0_____

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company____ Groff Julius_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____)_____

8. Major Activity, Product or Service of Company at this Location

Grain Elevator

9. Control Devices Associated with this Equipment

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other ☒ Describe_____Grain bucket Elevator completely enclosed_____ 24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT³	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) ☐ 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

OTHER FUEL _____ (Specify Type) ☐ 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
1 ☐	☐	☐☐	☐	☐☐	☐	☐☐☐

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
☐	10	☐☐	☐☐	90	

233 hr/yr - seasonal hours per day vary due to harvest season

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) [ ] 85

If not, then

Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ]	[ ][ ][ ]
86-88	89-91	92-95	96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? [ ] (Y or N)

		INPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain	N/A	450	tons	105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

		OUTPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.Grain	N/A	450	tons	105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams - Solid and Liquid

		OUTPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ Date Rec'd. State _____ Return to Local Jurisdiction Date_____ By_____

Reviewed by Local Jurisdiction Date_____ By_____ Reviewed by State Date_____ By_____

19. Inventory Date Month/Year (171-174) Equipment Code (175-177) SCC Code (178-185)

20. Annual Operating Rate (186-192) Maximum Design Hourly Rate (193-199) Permit to Operate Month (200-201) Transaction Date (MM/DD/YR) (202-207)

Staff Code (208-210) VOC Code (211) SIP Code (212 214) Regulation Code (215-218) Confidentiality (219)

Point Description (220-238) Action (239) A: Add C: Change

Form Number: 5
Rev. 9/27/2002
TTY Users 1-800-735-2258

Recycled Paper

AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Perdue Agribusiness LLC
COMPANY ADDRESS:	6906 Zion Church Road, Salisbury, MD 21804
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Hurlock Grain
PREMISES ADDRESS:	37 Delaware Avenue, Hurlock MD 21643
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Jessie Long
JOB TITLE:	Sr. Environmental Manager
PHONE NUMBER:	410-543-3296
EMAIL ADDRESS:	jessie.long@perdue.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
	Replace receiving leg for Pit #3

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

☒ Application package cover letter describing the proposed project

☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. X Form 5
No. _____ Form 5T
No. _____ Form 5EP
No. _____ Form 6
No. _____ Form 10
No. _____ Form 11
No. _____ Form 41
No. _____ Form 42
No. _____ Form 44

☐ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☒ Material balance data and all emissions calculations

☐ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.

☐ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission (1)

☐ Documentation that the proposed installation complies with local zoning and land use requirements (2)

(1) Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

(2) Required for applications subject to Expanded Public Participation Requirements.

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APPLICATION FOR FUEL BURNING EQUIPMENT

Information Regarding Public Outreach

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Air and Radiation Management Administration ▫ Air Quality Permits Program

APPLICATION FOR PROCESSING/ MANUFACTURING EQUIPMENT

Permit to Construct q Registration Update q Initial Registration q

1A. Owner of Equipment/Company Name

____Perdue AgriBusiness LLC

Mailing Address

_6906 Zion Church Rd._____

Street Address

__Salisbury_____MD_____21804_____
___City State Zip

Telephone Number
(_____410-341-2055 ___)

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.03.07 10:11:57 -05'00'

Jessie Long, Senior Environmental Manager

Print Name and Title Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) Premises No. (3-6)

Registration Class (7) Equipment No. (8-11)

Data Year (12-13) Application Date

1B. Equipment Location and Telephone Number (if different from above)

_____Hurlock Grain, Feedmill & Hatchery, 37 Delaware Avenue _____
Street Number and Street Name

___Hurlock_____MD_____21643_____ (__410___) __943-0512_____
City/Town State Zip Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A			
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Warrior 15k BPH Leg

5. Workmen's Compensation Coverage_____MWC31817225_____01/01/2026_____
Binder/Policy Number Expiration Date

Company_____Old Republic Insurance Company_____

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment_____0_____

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company____ Groff Julius_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____)_____

8. Major Activity, Product or Service of Company at this Location

Grain Elevator

9. Control Devices Associated with this Equipment

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other ☒ Describe_____Grain bucket Elevator completely enclosed_____ 24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT³	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) ☐ 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

OTHER FUEL _____ (Specify Type) ☐ 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
1 ☐	☐	☐☐	☐	☐☐	☐	☐☐☐

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
☐	10	☐☐	☐☐	90	

233 hr/yr - seasonal hours per day vary due to harvest season

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) [ ] 85

If not, then

Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ]	[ ][ ][ ]
86-88	89-91	92-95	96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? [ ] (Y or N)

		INPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. Grain	N/A	450	tons	105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

		OUTPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.Grain	N/A	450	tons	105,000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams - Solid and Liquid

		OUTPUT RATE			
NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

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Point Description (220-238) Action (239) A: Add C: Change

Form Number: 5
Rev. 9/27/2002
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Recycled Paper

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PREMISES ADDRESS:	37 Delaware Avenue, Hurlock MD 21643
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Jessie Long
JOB TITLE:	Sr. Environmental Manager
PHONE NUMBER:	410-543-3296
EMAIL ADDRESS:	jessie.long@perdue.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Replace dry leg on Brock Dryer side	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

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☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. X Form 5
No. _____ Form 5T
No. _____ Form 5EP
No. _____ Form 6
No. _____ Form 10
No. _____ Form 11
No. _____ Form 41
No. _____ Form 42
No. _____ Form 44

☐ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☒ Material balance data and all emissions calculations

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Air and Radiation Management Administration ▫ Air Quality Permits Program

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Permit to Construct q Registration Update q Initial Registration q

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Street Address

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City State Zip

Telephone Number

(_____410-341-2055 ___)

Signature

Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.03.07 10:12:19 -05'00'

Jessie Long, Senior Environmental Manager

Print Name and Title Date

DO NOT WRITE IN THIS BLOCK

2. REGISTRATION NUMBER

County No. (1-2) Premises No. (3-6)

Registration Class (7) Equipment No. (8-11)

Data Year (12-13) Application Date

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_____Hurlock Grain, Feedmill & Hatchery, 37 Delaware Avenue _____

Street Number and Street Name

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City/Town State Zip Telephone Number

_____

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

~~Status~~ (15)	~~New Construction Begun (MM/YY)~~ (16-19)	~~New Construction Completed (MM/YY)~~ (20-23)	~~Existing Initial Operation (MM/YY)~~ (20-23)
A			

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

~~Warrior 6k BPH Leg~~

5. Workmen's Compensation Coverage_____MWC31817225_____01/01/2026_____

Binder/Policy Number Expiration Date

Company_____Old Republic Insurance Company_____

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment_____0_____

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company____ Groff Julius_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____)_____

8. Major Activity, Product or Service of Company at this Location

Grain Elevator

9. Control Devices Associated with this Equipment

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other ☒ Describe_____Grain bucket Elevator completely enclosed_____ 24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT³	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) ☐ 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

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11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
1 ☐	☐	☐☐	☐	☐☐	☐	☐☐☐

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
☐	10	☐☐	☐☐	90	

583 hr/yr - seasonal hours per day vary due to harvest season

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) [ ] 85

If not, then

Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ]	[ ][ ][ ]
86-88	89-91	92-95	96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? [ ] (Y or N)

NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1. Grain	N/A	180	tons	105000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.Grain	N/A	180	tons	105000	tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams - Solid and Liquid

NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ Date Rec'd. State _____ Return to Local Jurisdiction Date_____ By_____

Reviewed by Local Jurisdiction Date_____ By_____ Reviewed by State Date_____ By_____

19. Inventory Date Month/Year (171-174) Equipment Code (175-177) SCC Code (178-185)

20.

Annual Operating Rate	Maximum Design Hourly Rate	Permit to Operate Month	Transaction Date (MM/DD/YR)
186-192	193-199	200-201	202-207

Staff Code	VOC Code	SIP Code	Regulation Code	Confidentiality
208-210	211	212 214	215-218	219

Point Description (220-238) Action (239) A: Add C: Change

AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Perdue Agribusiness LLC
COMPANY ADDRESS:	6906 Zion Church Road, Salisbury, MD 21804
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Hurlock Grain
PREMISES ADDRESS:	37 Delaware Avenue, Hurlock MD 21643
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Jessie Long
JOB TITLE:	Sr. Environmental Manager
PHONE NUMBER:	410-543-3296
EMAIL ADDRESS:	jessie.long@perdue.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Replace cooler for pellet line 1, replacement in-kind, no emissions change	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

☒ Application package cover letter describing the proposed project

☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. X Form 5
No. _____ Form 5T
No. _____ Form 5EP
No. _____ Form 6
No. _____ Form 10
No. _____ Form 11
No. _____ Form 41
No. _____ Form 42
No. _____ Form 44

☐ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☐ Material balance data and all emissions calculations

☐ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.

☐ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission (1)

☐ Documentation that the proposed installation complies with local zoning and land use requirements (2)

(1) Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

(2) Required for applications subject to Expanded Public Participation Requirements.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ▪ Air Quality Permits Program
1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

APPLICATION FOR FUEL BURNING EQUIPMENT

Information Regarding Public Outreach

For Air Quality Permit to Construct applications subject to public review, applicants should consider the following information in the initial stages of preparing a permit application.

If you are not sure at the time you are applying for a permit whether public review of your application is required or for information on steps you can take to engage the surrounding community where your planned project will be located, please contact the Air Quality Permits Program at 410-537-3225 and seek their advice.

Communicating and engaging the local community as early as possible in your planning and development process is an important aspect of your project and should be considered a priority. Environmental Justice or "EJ" is a movement to inform, involve, and engage communities impacted by potential and planned environmental projects by affording citizens opportunities to learn about projects and discuss any concerns regarding impacts.

Although some permit applications are subject to a formal public review process prescribed by statute, the Department strongly encourages you to engage neighboring communities separate from and well ahead of the formal permitting process. Sharing your plans by way of community meetings, informational outreach at local gatherings or through local faith-based organizations can initiate a rewarding and productive dialogue that will reduce anxiety and establish a permanent link with your neighbors in the community.

All parties benefit when there is good communication. The Department can assist applicants in developing an outreach plan that fits the needs of both the company and the public.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Blvd Baltimore, Maryland 21230
(410) 537-3230 1-800-633-6101 www.mde.state.md.us

Air and Radiation Management Administration ▫ Air Quality Permits Program

APPLICATION FOR PROCESSING/ MANUFACTURING EQUIPMENT

Permit to Construct X Registration Update q Initial Registration q

1A. Owner of Equipment/Company Name

Perdue AgriBusiness LLC

Mailing Address

6906 Zion Church Road
Street Address

Salisbury MD 21804
City State Zip

Telephone Number

(410) -341-2055

Signature Jessie Long Digitally signed by: Jessie Long DN: CN = Jessie Long email = jessie.long@perdue.com C = AD Date: 2025.03.07 10:12:55 -05'00'

Jessie Long, Senior Environmental Manager
Print Name and Title Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) Premises No. (3-6)
Registration Class (7) Equipment No. (8-11)
Data Year (12-13) Application Date

1B. Equipment Location and Telephone Number (if different from above)

Hurlock Grain, Feedmill, & Hatchery, 37 Delaware Avenue
Street Number and Street Name

Hurlock MD 21643 (410) 943-0512
City/Town State Zip Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

Andritz Cooler 25 TPH

5. Workmen's Compensation Coverage MWC31817225 Binder/Policy Number 01/01/2026 Expiration Date
Company Old Republic Insurance Company

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time_____

6B. Number of Stack/Emission Points Associated with this Equipment_____

Form Number: 5

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name_____ Title_____

Company Farrior_____

Mailing Address/Street_____

City/Town_____ State_____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

Feedmill

9. Control Devices Associated with this Equipment

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
X							
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

☐ Describe_____ 24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS ☐☐☐☐☐☐ 26-31 | SULFUR % ☐☐ 32-33 | GRADE ☐ 34 | NATURAL GAS-1000 FT³ ☐☐☐☐☐☐ 35-41 | LP GAS-100 GALLONS ☐☐☐☐ 42-45 | GRADE ☐

COAL- TONS ☐☐☐☐☐☐☐ 46-52 | SULFUR % ☐☐☐ 53-55 | ASH% ☐☐☐ 56-58 | WOOD-TONS ☐☐☐☐☐ 59-63 | MOISTURE % ☐☐ 64-65

OTHER FUELS _____ (Specify Type) ☐ 66-1 | ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

OTHER FUEL _____ (Specify Type) ☐ 66-2 | ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
X						
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) [ ] 85

If not, then

Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ][ ]	[ ][ ][ ]
86-88	89-91	92-95	96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? [ ] (Y or N)

	NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	Pellet Feed	N/A	30	tons	262800	tons
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

14. Output Materials (for this equipment)
Process/Product Stream

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	Pellet Feed	N/A	30	tons	262800	tons
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

15. Waste Streams - Solid and Liquid

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ Date Rec'd. State _____ Return to Local Jurisdiction Date_____ By_____

Reviewed by Local Jurisdiction Date_____ By_____ Reviewed by State Date_____ By_____

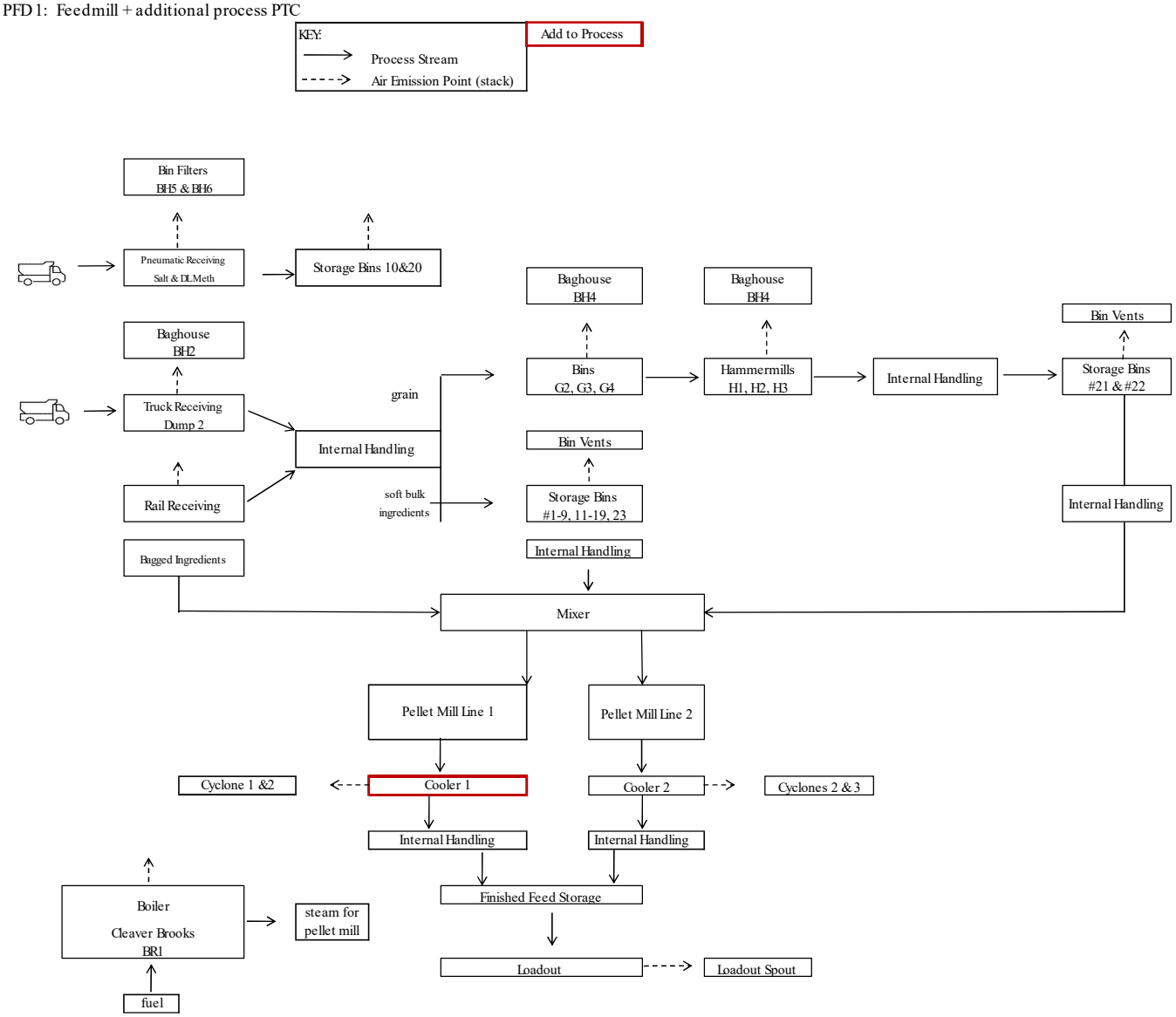
19. Inventory Date Month/Year (171-174) Equipment Code (175-177) SCC Code (178-185)

20. Annual Operating Rate (186-192) Maximum Design Hourly Rate (193-199) Permit to Operate Month (200-201) Transaction Date (MM/DD/YR) (202-207)

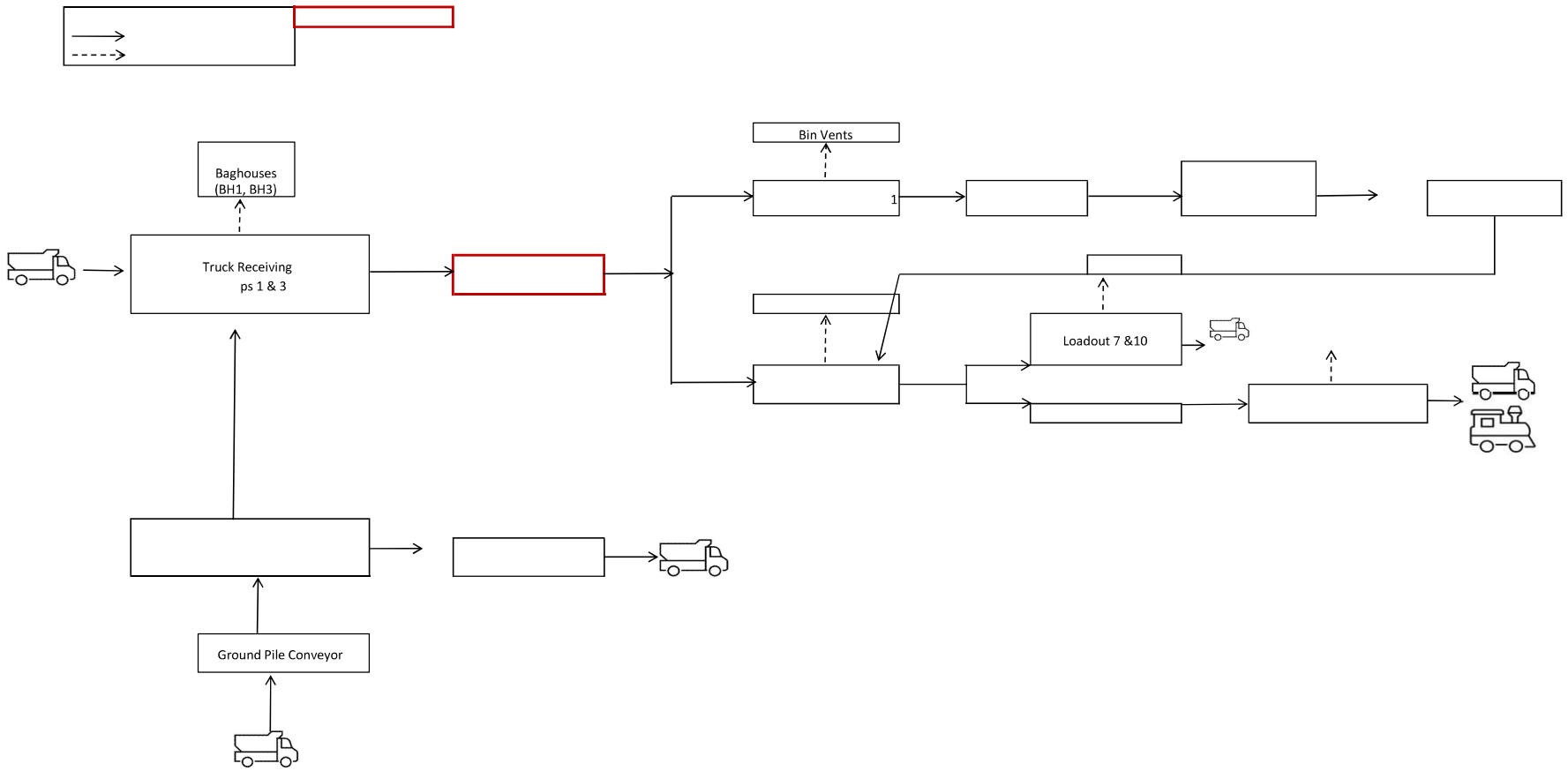
Staff Code (208-210) VOC Code (211 212) SIP Code (213 214) Regulation Code (215-218) Confidentiality (219)

Point Description (220-238) Action (239) A: Add C: Change

Perdue Agribusiness LLC
Process Flow Diagram
Hurlock Facility, Grain, Feedmill & Hatchery
PFD 1: Feedmill + additional process PTC



Perdue Agribusiness LLC
Process Flow Diagram



ACORD®

DATE (MM/DD/YYYY)
01/13/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
MARSH USA LLC. 1050 CONNECTICUT AVENUE, SUITE 700 WASHINGTON, DC 20036-5386 Attn: CSS - TEL: 202 263 7600	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
CN108313099-*STND-XSWC-25-26	INSURER A : Old Republic Insurance Company	24147
INSURED PERDUE FOODS LLC AND ITS SUBSIDIARIES 31149 OLD OCEAN CITY RD. PO BOX 1537 SALISBURY, MD 21802-1537	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** CLE-006908651-05 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADD L	SUB R	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X COMMERCIAL GENERAL LIABILITY			MWZY31817425	01/01/2025	01/01/2026	EACH OCCURRENCE	$	2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$	1,000,000
							MED EXP (Any one person)	$	10,000
							PERSONAL & ADV INJURY	$	2,000,000
	GEN AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$	3,000,000
	LX POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$	3,000,000
	OTHER:							$	
A	AUTOMOBILE LIABILITY			MWTB31817525	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident)	$	5,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$	
	OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident)	$	
							PROPERTY DAMAGE (Per accident)	$	
								$	
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$	
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$	
	DED RETENTION $							$	
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			MWC31817225 (AOS)	01/01/2025	01/01/2026	X PER STATUTE OTH-ER		
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N N	N / A		MWC31817225 (WI)	01/01/2025	01/01/2026	E.L. EACH ACCIDENT	$	2,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$	2,000,000
							E.L. DISEASE - POLICY LIMIT	$	2,000,000
A	Excess Workers Compensation Statutory Limits			MWXS31817325 (VA,IN,KY,MD,SC,WA)	01/01/2025	01/01/2026	Each Accident Disease-EA Emp/Policy Lmt		2,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Evidence of Insurance

CERTIFICATE HOLDER

PERDUE FOODS LLC and its subsidiaries
31149 Old Ocean City Road
Salisbury, MD 21804

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh USA LLC

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PROJECT **Perdue Foods, LLC. - Hurlock Complex**

Maximum Annual Throughput	105000 tons/yr
Control Efficiency	80 %

	Controlled Hourly Emission Rate	**Annual Emission Rate**

Cyclone Control Efficiency 90 %

Pollutant	**Emission Factor**	**Emission Rate**			
[5]	209.8440	1.05E-01	20.9844	1.05E-02	
[1]					
[6]					emission

The Mayor and Council of Hurlock

POST OFFICE BOX 327
HURLOCK, MARYLAND 21643
410-943-4181
FAX 410-943-8556
E-MAIL: townofhurlock@townofhurlock.org

REV. CHARLES T. CEPHAS, SR.
MAYOR
JOHN H. AVERY
TOWN MANAGER
JESSE B. HAMMOCK
TOWN ATTORNEY

COUNCIL MEMBERS
DAVID HIGGINS
BONNIE FRANZ
RUSSELL C. MURPHY, JR.
CEDERICK TURNER
EARL H. MURPHY, JR.

April 9, 2025

Perdue Agribusiness Grain, LLC
31149 Old Ocean City Road
Salisbury, MD 21804

Attention: Jessie Long

Dear Ms. Long:

This letter is to confirm Perdue Agribusiness Grain, LLC feed mill, granary, and hatchery is zoned properly to add an elevator leg to the grain side.

Sincerely,

John H. Avery

John H. Avery
Town Manager
Town of Hurlock

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

SUPPLEMENT TO
DOCKET #05-25

COMPANY: Perdue AgriBusiness LLC – Hurlock Feedmill

LOCATION: 37 Delaware Ave., Hurlock, MD 21643

APPLICATION: Hatchery, Feedmill, and Grain Handling & Drying Facility

ITEM	DESCRIPTION
1	Notice of Tentative Determination, Opportunity to Request a Public Hearing, and Opportunity to Submit Written Comments
2	Fact Sheet and Tentative Determination
3	Draft Permit to Construct and Conditions
4	Supplemental Information: • Application for a 500-kW emergency engine, installed 1979; • Application for a 500-kW emergency engine, installed 2022; • Air Toxics Estimates; • Emissions Estimates; • Form 5T; • SDS Ing 485 OMNI Feed Additive; • OMNI 485 Premix Feed Additive Label; • SDS Ing 486 Trace Mineral Premix Feed Additive; and • Stack Parameters.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF TENTATIVE DETERMINATION, OPPORTUNITY TO REQUEST A PUBLIC HEARING, AND OPPORTUNITY TO SUBMIT WRITTEN COMMENTS

FIRST NOTICE

The Department of the Environment, Air and Radiation Administration (ARA) has completed its review of an application for a Permit to Construct submitted by Perdue AgriBusiness LLC on April 14, 2025 for the Hurlock Feedmill, which includes a hatchery, feedmill, and grain handling & drying facility. The facility is located at 37 Delaware Ave., Hurlock, MD 21643.

Pursuant to Section 1-604, of the Environment Article, Annotated Code of Maryland, the Department has made a tentative determination that the Permit to Construct can be issued and is now ready to receive public comment on the application. Copies of the Department's tentative determination, the application, the draft permit to construct with conditions, and other supporting documents are available for public inspection on the Department's website. Look for Docket #05-25 at the following link:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the project is located. The EJ Score, expressed as a statewide percentile, was shown to be 57.3, which the Department has verified. This score represents a combined measure of pollution and the potential vulnerability of a population to the effects of pollution. The Department's review of the factors contributing to the score is included in the tentative determination that is available for public inspection.

Interested persons may request a public hearing and/or submit written comments on the tentative determination. Requests for a public hearing must be submitted in writing and must be received by the Department no later than 20 days from the date of this notice. A requested public hearing will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person public hearing is received. Written comments must be received by the Department no later than 30 days from the date of this notice.

Interested persons may request an extension to the public comment period. The extension request must be submitted in writing and must be received by the Department no later than 30 days from the date of this notice or within 5 days after the hearing (if a hearing is requested), whichever is later. The public comment period may only be extended one time for a 60-day period.

All requests for a public hearing, requests for an extension to the public comment period, and all written comments should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program by email to shannon.heafey@maryland.gov or by mail to the Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230. Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christopher R. Hoagland, Director
Air and Radiation Administration

MARYLAND DEPARTMENT OF ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

FACT SHEET AND TENTATIVE DETERMINATION
PERDUE AGRIBUSINESS, LLC

INSTALLATION OF HURLOCK FEEDMILL

I. INTRODUCTION

The Maryland Department of the Environment (the "Department") received an application from Perdue Agribusiness, LLC (“Perdue”) on April 14, 2025, with supplementary information received on August 15, 2025, September 18, 2025, October 7, 2025, October 27, 2025, November 21, 2025, and December 16, 2025 for a Permit to Construct for the Hurlock Feedmill. The feedmill is located at 37 Delaware Ave., Hurlock, MD 21643.

A notice was placed in the Star Democrat and The Dorchester Star on June 4, 2025 and June 11, 2025 announcing an opportunity to request an informational meeting to discuss the application for a Permit to Construct. An informational meeting was not requested.

As required by law, all public notices were also provided to elected officials in all State, county, and municipality legislative districts located within a one mile radius of the facility’s property boundary.

The Department has reviewed the application and has made a tentative determination that the installation is expected to comply with all applicable air quality regulations. A notice will be published to provide the public with opportunities to request a public hearing and to comment on the application, the Department's tentative determination, the draft permit conditions, and other supporting documents. The Department will not schedule a public hearing unless a legitimate request is received.

If the Department does not receive any comments that are adverse to the tentative determination, the tentative determination will automatically become a final determination. If adverse comments are received, the Department will review the comments, and will then make a final determination with regard to issuance or denial of the permit. A notice of final determination will be published in a newspaper of general circulation in the affected area. The final determination may be subject to judicial review pursuant to Section 1-601 of the Environment Article, Annotated Code of Maryland.

II. CURRENT STATUS AND PROPOSED INSTALLATION

A. Current Status

The installation includes a hatchery, feedmill, and a grain drying & handling process.

Particulate emission sources are generally controlled by baghouses or by installing enclosed equipment, with the pellet lines controlled by cyclones.

The existing installation was unpermitted, and Perdue has applied for a permit to construct to bring the facility into compliance.

B. Proposed Installation

Perdue has proposed to install the following new equipment as part of this permitting process: replacement of Pellet Cooler 1, a new jump receiving leg to service Truck Receiving Pit 1 on the Brock Dryer side, replacement of Receiving Elevator Leg 3, replacement of the Dry Grain Elevator Leg (Brock dryer side), and installation of a vortex spout to control particulate emissions from Mechanical Grain Loadout 3 (Rail).

III. APPLICABLE REGULATIONS

The installation is subject to all applicable Federal and State air quality control regulations, including, but not limited to the following:

(a) 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

(b) 40 CFR Part 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

(c) 40 CFR Part 63 Subpart DDDDDDD, National Emission Standards for Hazardous Air Pollutants for Area Sources: Prepared Feeds Manufacturing.

(d) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.

(e) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.

(f) COMAR 26.11.06.03C and D, which requires that the Permittee take reasonable precautions to prevent particulate matter from unconfined sources and materials handling and construction operations from becoming airborne.

(g) COMAR 26.11.09.05A(1), which limits visible emissions to 20 percent opacity from fuel burning equipment.

(h) COMAR 26.11.09.05E(2) & (3), which limits visible emissions of stationary internal combustion engine powered equipment to 10 percent opacity during idle mode and 40 percent opacity while operating at other than idle conditions.

(i) COMAR 26.11.09.07A(1), which limits the sulfur content of distillate fuel oil to 0.3 percent by weight.

(j) COMAR 26.11.02.13A(16) & (25), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.

(k) COMAR 26.11.02.14D, which requires that the Permittee submit to the Department not later than 60 days prior to initiating operation of the installation for which this permit is issued a completed application for a State permit-to-operate.

(l) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in such submittals.

(m) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

(n) COMAR 26.11.15.05, which requires that the Permittee implement “Best Available Control Technology for Toxics” (T – BACT) to control emissions of toxic air pollutants.

(o) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

(p) COMAR 26.11.18.03A(1), which prohibits the operation of any grain-drying operation unless all exhaust gases discharge through a 24 mesh screen.

(q) COMAR 26.11.18.03A(2), which prohibits the operation of any grain drying or handling operation without taking reasonable precautions to prevent particulate matter from becoming airborne.

IV. GENERAL AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six (6) criteria pollutants, i.e., sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead. The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation.

The Department utilizes a statewide air monitoring network, operated in accordance with EPA guidelines, to measure the concentrations of criteria pollutants in Maryland's ambient air. The measurements are used to project statewide ambient air quality, and currently indicate that Dorchester County complies with the NAAQS for ozone, sulfur dioxide, particulate matter, carbon monoxide and lead.

With regard to toxic air pollutants (TAPs), screening levels (i.e., acceptable ambient concentrations for toxic air pollutants) are generally established at 1/100 of allowed worker exposure levels (TLVs)[1]. The Department has also developed additional screening levels for carcinogenic compounds. The additional screening levels are established such that continuous exposure to the subject TAP at the screening level for a period of 70 years is expected to cause an increase in lifetime cancer risk of no more than 1 in 100,000.

V. ENVIRONMENTAL JUSTICE ANALYSIS

The concept behind the term environmental justice (EJ) is that all Maryland residents and communities should have an equal opportunity to enjoy an enhanced quality of life. How to assess whether equal protection is being applied is the challenge.

Communities surrounded by a disproportionate number of polluting facilities puts residents at a higher risk for health problems from environmental exposures. It is important that residents who may be adversely affected by a source be aware of the current environmental issues in their community in order to have meaningful involvement in the permitting process. Resources may be available from government and private entities to ensure that community health is not negatively impacted by a new source located in the community.

The Maryland General Assembly passed HB 1200, effective October 1, 2022, that adds to MDE's work into our mission to help overburdened and underserved communities with environmental issues. In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the source is located. The EJ Score, expressed as a statewide percentile, was shown to be 57.3 which the Department has verified. This score represents a combined measure of pollution and the potential vulnerability of a population to the effects of pollution.

An EJ Score of 57.3 indicates that the installation is located in an area that is not disproportionately impacted by sources of pollution or at a higher risk of health problems from environmental exposures than other areas in Maryland. The Department has reviewed the air quality impacts from this installation and has determined that the installation will meet all applicable air quality standards.

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[1] TLVs are threshold limit values (exposure limits) established for toxic materials by the American Conference of Governmental Industrial Hygienists (ACGIH). Some TLVs are established for short-term exposure (TLV – STEL), and some are established for longer-term exposure (TLV – TWA), where TWA is an acronym for time-weight average.

VI. COMPLIANCE DEMONSTRATION AND ANALYSIS

The installation must comply with all State imposed emissions limitations and screening levels, as well as the NAAQS. The Department has conducted an engineering and air quality review of the application. The emissions were projected based on vendor data and EPA-approved emission factors. The conservative U.S. EPA's SCREEN3 model was used to project the maximum ground level concentrations from the facility, which were then compared to the screening levels and the NAAQS.

A. **Estimated Emissions** - The maximum emissions of air pollutants of concern from the installation are listed in Table I.

B. **Compliance with National Ambient Air Quality Standards -** The ambient background concentration for each pollutant, which includes the projected contribution from the existing facility, are listed in column 2 of Table II. The ambient background concentration for each pollutant shown in column 2 of Table II is less than the NAAQS for each pollutant shown in column 3.

C. **Compliance with Air Toxics Regulations** – The toxic air pollutants of concern that would be emitted from this installation are listed in column 1 of Table III. The predicted maximum off-site ambient concentrations of these toxic air pollutants are shown in column 4 of Table III, and in each case the maximum concentration is less than the corresponding screening level for the toxic air pollutant shown in column 2.

VII. TENTATIVE DETERMINATION

Based on the above information, the Department has concluded that the installation will complies with all applicable Federal and State air quality control requirements. In accordance with the Administrative Procedure Act, Department has made a tentative determination to issue the Permit to Construct.

Enclosed with the tentative determination is a copy of the draft Permit to Construct.

TABLE I
PROJECTED MAXIMUM EMISSIONS FROM THE INSTALLATION

POLLUTANT	PROJECTED MAXIMUM EMISSIONS FROM INSTALLATION	
	(lbs/day)	(tons/year)
Nitrogen Dioxide (NO_2)	304	52.4
Sulfur Dioxide (SO_2)	2	0.1
Carbon Monoxide (CO)	232	41.4
Volatile Organic Compounds (VOC)	36	5.5
Particulate Matter (PM_{10})	304	50.3

TABLE II
PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE INSTALLATION ON AMBIENT AIR QUALITY

POLLUTANTS	**BACKGROUND AMBIENT AIR CONCENTRATIONS INCLUDING IMPACT FROM EXISTING FACILITY* ($\mu g/m^3$)****	**NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ($\mu g/m^3$)**
Nitrogen Dioxide (NO_2)	1-hr avg. → 83 annual avg.→ 28	1-hr max. → 188 annual avg.→ 100
Carbon Monoxide (CO)	8-hr max.→ 1,610 1-hr max.→ 3,335	8-hr max.→ 10,000 1-hr max.→ 40,000
Sulfur Dioxide (SO_2)	1-hr max.→ 20	1-hr max → 196.5
Particulate Matter (PM_{10})	24-hr max.→ 33	24-hr max.→ 150
Particulate Matter ($PM_{2.5}$)	24-hr avg. → 19 annual avg. → 7.5	24-hr max → 35 annual avg. → 9

*Note: The background ambient air concentrations listed above include the concentrations of pollutants generated from the existing facility. There will be no new significant emissions added to the existing background concentrations.
**Background concentrations were obtained from Maryland air monitoring stations as follows:

NO_2, → Lochearn monitor located at 4380 Old Court Rd., highest 2024 Maryland value
CO and SO_2 → Essex monitor located at 600 Dorsey Rd., highest 2024 Maryland value
PM_{10} and $PM_{2.5}$ 24-hr Avg → 3900 Hillen Rd. – Baltimore, highest 2024 Maryland value
$PM_{2.5}$ → Fair Hill Natural Resource Mgnt. Area 4493 Telegraph Rd., highest 2024 Maryland value

TABLE III
PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR TOXIC AIR POLLUTANTS EMITTED FROM THE INSTALLATION

TOXIC AIR POLLUTANTS	SCREENING LEVELS ($\mu g/m^3$)	PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)	PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu g/m^3$)
2-Methylnaphthalene	1-hour→ None 8-hour→ 29.08 Annual→ None	1.737E-06	1-hour→ None 8-hour→ 5.45E-05 Annual→ None
3-Methylcholanthrene	1-hour→ None 8-hour→ 20 Annual→ None	1.30E-07	1-hour→ None 8-hour→ 4.09E-06 Annual→ None
7,12-Dimethylbenz(a)anthracene	1-hour→ None 8-hour→ 4.76 Annual→ None	1.16E-06	1-hour→ None 8-hour→ 3.64E-05 Annual→ None
Acenaphthene	1-hour→ None 8-hour→ 20 Annual→ None	1.30E-07	1-hour→ None 8-hour→ 4.09E-06 Annual→ None
Acenaphthylene	1-hour→ None 8-hour→ 24.64 Annual→ None	1.30E-07	1-hour→ None 8-hour→ 4.09E-06 Annual→ None
Anthracene	1-hour→ None 8-hour→ 574 Annual→ None	1.74E-07	1-hour→ None 8-hour→ 5.45E-06 Annual→ None
Benzene	1-hour→ 79.87 8-hour→ 15.97 Annual→ 0.13	1.52E-04	1-hour→ 6.82E-03 8-hour→ 4.77E-03 Annual→ 5.45E-04
Benzo(g,h,i)perylene	1-hour→ None 8-hour→ 20 Annual→ None	8.69E-08	1-hour→ None 8-hour→ 2.73E-06 Annual→ None
Ethane	1-hour→ None 8-hour→ 12,300 Annual→ None	2.24E-01	1-hour→ None 8-hour→ 7.04 Annual→ None
Fluoranthene	1-hour→ None 8-hour→ 82 Annual→ None	2.17E-07	1-hour→ None 8-hour→ 6.82E-06 Annual→ None

Fluorene	1-hour→ None 8-hour→ 20 Annual→ None	2.03E-07	1-hour→ None 8-hour→ 6.36E-06 Annual→ None
Formaldehyde	1-hour→ None 8-hour→ 20.3 Annual→ 0.8	2.37E-02	1-hour→ None 8-hour→ 1.70E-01 Annual→ 1.95E-02
Phenanthrene	1-hour→ None 8-hour→9.8 Annual→ None	1.23E-06	1-hour→ None 8-hour→ 3.86E-05 Annual→ None
Propane	1-hour→ None 8-hour→ 18,030 Annual→ None	1.16E-01	1-hour→ None 8-hour→ 3.64 Annual→ None
Pyrene	1-hour→ None 8-hour→ 20 Annual→ None	3.62E-07	1-hour→ None 8-hour→ 1.14E-05 Annual→ None
Toluene	1-hour→ None 8-hour→ 753.6 Annual→ None	2.46E-04	1-hour→ None 8-hour→ 7.72E-03 Annual→ None
Arsenic	1-hour→ None 8-hour→ 0.1 Annual→ None	1.63E-05	1-hour→ None 8-hour→ 4.54E-04 Annual→ None
Barium	1-hour→ None 8-hour→ 5 Annual→ None	3.18E-04	1-hour→ None 8-hour→ 1.00E-02 Annual→ None
Beryllium	1-hour→ None 8-hour→ None Annual→ 0.004	3.80E-06	1-hour→ None 8-hour→ None Annual→ 3.11E-06
Cadmium	1-hour→ None 8-hour→ 0.02 Annual→ 0.006	3.49E-04	1-hour→ None 8-hour→ 2.50E-03 Annual→ 2.85E-04
Chromium	1-hour→ None 8-hour→ 5 Annual→ None	1.38E-04	1-hour→ None 8-hour→ 3.65E-03 Annual→ None
Cobalt	1-hour→ None 8-hour→ 0.2 Annual→ None	6.08E-06	1-hour→ None 8-hour→ 2.12E-04 Annual→ None
Copper	1-hour→ None 8-hour→ 2 Annual→ None	2.17E-04	1-hour→ None 8-hour→ 5.08E-03 Annual→ None
Manganese	1-hour→ None 8-hour→ 2 Annual→ None	2.86E-03	1-hour→ None 8-hour→ 5.98E-02 Annual→ None

Mercury	1-hour→ None 8-hour→ 0.1 Annual→ None	1.88E-05	1-hour→ None 8-hour→ 5.19E-04 Annual→ None
Molybdenum	1-hour→ None 8-hour→ 5 Annual→ None	7.96E-05	1-hour→ None 8-hour→ 2.50E-03 Annual→ None
Nickel	1-hour→ None 8-hour→ 1 Annual→ None	1.52E-04	1-hour→ None 8-hour→ 4.77E-03 Annual→ None
Selenium	1-hour→ None 8-hour→ 2 Annual→ None	1.06E-05	1-hour→ None 8-hour→ 2.73E-04 Annual→ None
Vanadium	1-hour→ None 8-hour→ 2 Annual→ None	1.66E-04	1-hour→ None 8-hour→ 5.23E-03 Annual→ None
Iodine	1-hour→ 10.38 8-hour→ 1.04 Annual→ None	6.19E-05	1-hour→ None 8-hour→ 1.32E-03 Annual→ None
Zinc	1-hour→ None 8-hour→ 0.5 Annual→ None	4.38E-03	1-hour→ None 8-hour→ 7.32E-02 Annual→ None

The values represent maximum facility-wide emissions of toxic air pollutants during any 1-hour period of facility operation.

The values are based on worst-case emissions from the facility and were predicted by EPA's SCREEN3 model, which provides conservative estimations concerning the impact of pollutants on ambient air quality.

DRAFT PERMIT

Wes Moore Serena McIlwain

Air and Radiation Administration

1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

☒ Construction Permit ☐ Operating Permit

PERMIT NO.
As listed on Page 2

DATE ISSUED: TBD

PERMIT FEE:
$2,000.00

EXPIRATION DATE:
In accordance with
COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS
Perdue AgriBusiness, LLC
6906 Zion Church Rd.
Salisbury, MD 21804
Attention: Ms. Jessie Long, Sr. Environmental Manager

SITE
Perdue AgriBusiness, LLC – Hurlock Feedmill
37 Delaware Ave.
Hurlock, MD 21643
AI # 10633

SOURCE DESCRIPTION

This permit authorizes the installation of one (1) hatchery, one (1) feedmill, (1) grain drying & handling operation, replacement of one (1) pellet cooler, installation of one (1) new jump receiving leg to service Truck Receiving Pit 1, replacement of the Receiving Elevator Leg 3, replacement of the Dry Grain Elevator Leg and installation of a vortex spout for particulate emissions control of Mechanical Grain Loadout 3.

This permit supersedes all pervious permits issued to ARA Premises No. 019-0121.

This source is subject to the conditions described on the attached pages.

Program Manager

Director, Air and Radiation Administration

PERDUE AGRIBUSINESS, LLC
HURLOCK FEEDMILL
37 DELAWARE AVE.
HURLOCK, MARYLAND 21643
PERMIT-TO-CONSTRUCT CONDITIONS
PERMIT #019-0121

INDEX

Part A – General Provisions
Part B – Applicable Regulations
Part C – Construction Conditions
Part D, D1, D2, D3 – Operating Conditions
Part E – Notification and Monitoring
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Part G – Temporary Permit-To-Operate Conditions

This permit-to-construct incorporates requirements for the following registered installations:

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
Hatchery			
019-0121-5-0043	EU 1	Raypack Boiler, 2.1 million BTU per hour capacity, fired by natural gas only.	2006
019-0121-5-0059	EU 2	Laars Boiler, 1.2 million BTU per hour capacity, fired by natural gas only.	2007
019-0121-9-0115	EU 3	Diesel Emergency Generator (Inside) 500 kW capacity.	1979
019-0121-9-0120	EU 4	Diesel Emergency Generator (Outside), 500 kW capacity.	2022
Feedmill			
019-0121-5-0075	EU 5	Cleaver Brooks Boiler, 14.65 million BTU per hour capacity, fired by natural gas only.	1979
019-0121-8-0066	EU 6	Truck Receiving Pit #2 – Feed Ingredients, 300 TPH capacity, controlled by baghouse BH-2.	1979
019-0121-8-0066	EU 7	Rail Receiving Pit, 10,000 bushel per hour capacity.	1979
019-0121-8-0066	EU 8	Receiving Elevator Leg 2, 300 TPH capacity.	1979
019-0121-8-0066	EU 9	Salt Pneumatic Line, 0.2 TPH capacity, controlled by baghouse BH-5.	1997

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
019-0121-8-0066	EU 10	Methionine Pneumatic Line, 0.2 TPH capacity, controlled by baghouse BH-6.	1997
019-0121-8-0066	EU 11	Hammermill 1, 60 TPH capacity, controlled by baghouse BH-4.	1979
019-0121-8-0066	EU 12	Hammermill 2, 60 TPH capacity, controlled by baghouse BH-4.	1979
019-0121-8-0066	EU 13	Hammermill 3, 60 TPH capacity, controlled by baghouse BH-4.	1994
019-0121-8-0066	EU 14	Grain Grinding Elevator Leg 1, 20,000 bushel per hour capacity.	1979
019-0121-8-0066	EU 15	Grain Grinding Elevator 2, 20,000 bushel per hour capacity.	1994
019-0121-8-0066	EU 16	Storage Tank G2, 20,528-bushel capacity.	1979
019-0121-8-0066	EU 17	Storage Tank G3, 20,831-bushel capacity.	1979
019-0121-8-0066	EU 18	Storage Tank G4, 20,528-bushel capacity.	1979
019-0121-8-0066	EU 19	Twenty-three (23) Bulk Bins: Bin — Capacity BB1 — 1701 Cu. Ft BB2 — 2717 Cu. Ft BB3 — 3524 Cu. Ft BB4 — 3473 Cu. Ft BB5 — 3394 Cu. Ft BB6 — 3394 Cu. Ft BB7 — 3473 Cu. Ft BB8 — 3524 Cu. Ft BB9 — 2423 Cu. Ft BB10 — 2449 Cu. Ft BB11 — 2448 Cu. Ft BB12 — 2448 Cu. Ft BB13 — 3366 Cu. Ft BB14 — 3366 Cu. Ft BB15 — 3478 Cu. Ft	1979

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
		BB16 5650 Cu. Ft BB17 5650 Cu. Ft BB18 1148 Cu. Ft BB19 1180 Cu. Ft BB20 2496 Cu. Ft BB21 5252 Cu. Ft BB22 5337 Cu. Ft BB23 5323 Cu. Ft	
019-0121-8-0066	EU 20	Sixteen (16) Micro Bins: Bin Capacity mB001 4 Cu. Ft mB002 4 Cu. Ft mB003 4 Cu. Ft mB004 4 Cu. Ft mB005 4 Cu. Ft mB006 4 Cu. Ft mB007 4 Cu. Ft mB008 4 Cu. Ft mB009 4 Cu. Ft mB010 4 Cu. Ft mB011 4 Cu. Ft mB012 4 Cu. Ft mB013 4 Cu. Ft mB014 4 Cu. Ft mB015 4 Cu. Ft mB016 4 Cu. Ft	2022
019-0121-8-0066	EU 21	Four (4) Mash Bins, each with a capacity of 1750 cubic feet: Mash Bin #1 Mash Bin #2 Mash Bin #3 Mash Bin #4	1979
019-0121-8-0066	EU 22	Ten (10) Finished Feed Bins: Bin Capacity FF1 125 tons FF2 125 tons FF3 125 tons FF4 125 tons FF5 125 tons	 1979 1979 1979 1979 1979

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
		FF6 80 tons FF7 37 tons FF8 37 tons FF9 80 tons FF10 125 tons FF11 100 tons FF12 100 tons	1979 1979 1979 1979 1979 1994 1994
019-0121-8-0066	EU 23	Mixer, Scott Model No. SRMDG 6613, 60 TPH capacity.	2012
019-0121-8-0066	EU 24	Mash Elevator Leg, 2,500 bushel per hour capacity.	1979
019-0121-8-0066	EU 25	Pellet Line 1, including: • Pelletizer 1; and • Pellet Cooler 1, Andritz model DP 525, 30 tons per hour capacity, controlled by cyclones 1 & 2 operating in parallel.	1979 Modified 2026
019-0121-8-0066	EU 26	Pellet Line 2, including • Pelletizer 2; and • Pellet Cooler 2, Andritz model DP 525, 30 tons per hour capacity, controlled by cyclones 3 & 4 operating in parallel.	1979
019-0121-8-0066	EU 27	Pellet Mill Elevator Leg 1, 10,000 bushel per hour capacity.	1979
019-0121-8-0066	EU 28	Pellet Mill Elevator Leg 2, 10,000 bushel per hour capacity.	1979
019-0121-8-0066	EU 29	Mechanical Finished Feed Loadout 1, 300 TPH capacity, controlled by a dust sock.	1979
Grain Side			
019-0121-8-0073	EU 30	Truck Receiving Pit 1, 10,000 bushel per hour capacity, controlled by baghouse BH-1.	1979

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
019-0121-8-0073	EU 31	Receiving Elevator Leg 1, 15,000 bushel per hour capacity, enclosed.	1979
019-0121-8-0073	EU 32	Jump Receiving Leg for Pit 1 on Brock Dryer Side, 15,000 bushel per hour capacity, enclosed.	2026
019-0121-8-0073	EU 33	Truck Receiving Pit 3, 10,000 bushel per hour capacity, controlled by baghouse BH-3.	1979
019-0121-8-0073	EU 34	Receiving Elevator Leg 3, 15,000 bushel per hour capacity, enclosed.	1978 Modified 2026
019-0121-8-0662	EU 35	Berico Grain Dryer, 38 million BTU per hour direct-fired natural gas burner, controlled by a 24 mesh screen.	1985
019-0121-8-0073	EU36	Wet Grain Elevator Leg (Berico side), 4,000 bushel per hour capacity.	1985
019-0121-8-0073	EU 37	Dry Grain Elevator Leg (Berico side), 4,000 bushel per hour capacity.	1985
019-0121-8-0070	EU 38	Brock Grain Dryer, 61 million BTU per hour direct-fired natural gas burner, controlled by a 24 mesh screen.	2014
019-0121-8-0073	EU 39	Dry Grain Elevator Leg (Brock Dryer side), 6,000 bushel per hour capacity, enclosed.	2026
019-0121-8-0073	EU 40	Wet Grain Elevator Leg (Brock side), 6,000 bushel per hour.	2014
019-0121-8-0073	EU 41	Temporary Outdoor Storage #1, 1.6 million bushel capacity.	2005
019-0121-8-0073	EU 42	Temporary Outdoor Storage #2, 250,000-bushel capacity.	2015
019-0121-8-0073	EU 43	Wet Grain Storage Bin #1, 21,000-bushel storage capacity.	2014

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
019-0121-8-0073	EU 44	Wet Grain Storage Bin #2 21,000-bushel storage capacity.	2014
019-0121-8-0073	EU 45	Wet Grain Storage Bin #3 30,000-bushel storage capacity.	2014
019-0121-8-0073	EU 46	Wet Grain Storage Bin #4 21,000-bushel storage capacity.	1979
019-0121-8-0073	EU 47	Grain Storage Tank G1 20,000-bushel storage capacity.	1979
019-0121-8-0073	EU 48	Grain Storage Tank 6, 140,000-bushel storage capacity	1979
019-0121-8-0073	EU 49	Grain Storage Tank 7, 250,000-bushel storage capacity.	1979
019-0121-8-0073	EU 50	Grain Storage Tank 8 250,000-bushel storage capacity.	1979
019-0121-8-0073	EU 51	Grain Storage Tank 9, 73,000-bushel storage capacity.	1979
019-0121-8-0073	EU 52	Grain Storage Tank 10, 73,000-bushel storage capacity.	1979
019-0121-8-0073	EU 53	Mechanical Grain Loadout 3 (Rail), 6,000 bushel per hour capacity, controlled by a vortex spout.	1979 Modified 2026
019-0121-8-0073	EU 54	Mechanical Grain Loadout 2 (Tank 10), 6,000 bushel per hour capacity, controlled by a dust sock.	1979
019-0121-8-0073	EU 55	Tank 7 Loadout (Gravity), 4,000 bushel per hour capacity, controlled by a dust sock.	1979
Insignificant Sources			
N/A	N/A	Temporary Rental Grain Pile Diesel Emergency Generator, less than 373 kW capacity.	Varies
N/A	N/A	Hatchery Diesel Emergency Generator (Inside), 260 kW capacity.	1979

ARA Registration Number	Emission Unit No.	Emissions Unit Name and Description	Date of Installation
N/A	N/A	Lochnivar Boiler, natural gas fired, rated for 0.65 MMBtu/hr	1979
N/A	N/A	Roadway Operations	N/A

Part A – General Provisions

(1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:

(a) All valid applications for Processing or Manufacturing Equipment (Form 5) received at the Department prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121). This includes the ten (10) Form 5 applications received April 14, 2025.

(b) All valid applications for Gas Cleaning or Emission Control Equipment (Form 6) received at the Department prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121). This includes the thirteen (13) Form 6 applications received April 14, 2025.

(c) All valid applications for Fuel Burning Equipment (Boilers) (Form 11) received at the Department prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121).

(d) All valid applications for Emergency Generators (Form 42) received at the Department prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121). This includes the two (2) Form 42 applications received November 20, 2025 for two (2) diesel emergency generators rated at 670.5 hp, each.

(e) All valid Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration (Form 5T) received at the Department

prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121). This includes the Form 5T received on October 24, 2025.

(f) All valid Emission Point Data (Form 5EP) received at the Department prior to issuance of this permit, and pertaining to registered equipment associated with Perdue AgriBusiness, LLC (ARA Premises No. 019-0121). This includes the sixteen (16) Form 5EP applications received April 14, 2025.

(g) Supplemental Information: Emissions estimates received on August 15, 2025, an SDS sheet received September 19, 2025, a feed additives label received October 7, 2025, air toxics emissions estimates received October 24, 2025 and stack parameters received December 15, 2025.

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

(2) Upon presentation of credentials, representatives of the Maryland Department of the Environment (“MDE” or the “Department”) and the Dorchester County Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee’s property and permitted to:

(a) inspect any construction authorized by this permit;

(b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;

(c) inspect any monitoring equipment required by this permit;

(d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit;

(e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit; and

(f) exercise its right of entry through use of an unmanned aircraft system to conduct inspections, collect samples, or make visual observations through photographic or video recordings to determine compliance with the requirements of this permit.

(3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the Department determines that such increases or changes constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.

(4) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.

(5) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.

(6) This permit supersedes all previous permits-to-construct issued to ARA Premises No. 019-0121.

(7) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a State permit-to-operate issued pursuant to COMAR 26.11.02.13.

Part B – Applicable Regulations

(1) This source is subject to all applicable federal air pollution control requirements including, but not limited to, the following:

(a) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in federal New Source Performance Standards (NSPS) promulgated under 40 CFR 60, Subparts A and IIII for Stationary Compression Ignition Internal Combustion Engines.

(b) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in the National Emissions Standards for Hazardous Air Pollutants

(NESHAP) promulgated under 40 CFR 63, Subparts A, ZZZZ for Stationary Reciprocating Internal Combustion Engines, and DDDDDDD for Prepared Feeds Manufacturing.

All notifications required under 40 CFR 60, Subparts A and IIII and 40 CFR 63 Subparts A, ZZZZ, and DDDDDDD shall be submitted to both of the following:

The Administrator
Compliance Program
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard, STE 715
Baltimore MD 21230

and

United States Environmental Protection Agency
Region III, Enforcement & Compliance Assurance Division
Air, RCRA and Toxics Branch (3ED21)
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2852

(2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.

(b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:

(i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;

(ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or

(iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval.

(c) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.

(d) COMAR 26.11.06.03C and D, which requires that the Permittee take reasonable precautions to prevent particulate matter from unconfined sources and materials handling and construction operations from becoming airborne.

NOTE: The reasonable precaution requirements of COMAR 26.11.06.03C and D apply to road dust.

(e) COMAR 26.11.09.05A(1), which limits visible emissions to 20 percent opacity from fuel burning equipment.

Exceptions. The visible emissions standards do not apply during load changing, soot blowing, startup, or adjustments if the visible emissions are not greater than 40 opacity and the visible emissions do not occur for more than 6 consecutive minutes in any 60-minute period.

(f) COMAR 26.11.09.05E(2) & (3), which limits visible emissions of stationary internal combustion engine powered equipment to 10 percent opacity during idle mode and 40 percent opacity while operating at other than idle conditions.

Exceptions. COMAR 26.11.09.05E(4)(a) establishes that COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system. COMAR 26.11.09.05E(4)(b) establishes that COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(i) Engines that are idled continuously when not in service: 30 minutes; and

(ii) All other engines: 15 minutes.

COMAR 26.11.09.05E(4)(c) establishes that COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

(g) COMAR 26.11.09.07A(1), which limits the sulfur content of distillate fuel oil to 0.3 percent by weight.

(3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.02.13A(16) & (25), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.

(b) COMAR 26.11.02.14D, which requires that the Permittee submit to the Department not later than 60 days prior to initiating operation of the installation for which this permit is issued a completed application for a State permit-to-operate.

(c) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in such submittals.

(d) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

(e) COMAR 26.11.15.05, which requires that the Permittee implement “Best Available Control Technology for Toxics” (T – BACT) to control emissions of toxic air pollutants.

(f) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

NOTE: COMAR 26.11.15 applies to the Feedmill and Grain Dryers.

(g) COMAR 26.11.18.03A(1), which prohibits the operation of any grain-drying operation unless all exhaust gases discharge through a 24 mesh screen.

(h) COMAR 26.11.18.03A(2), which prohibits the operation of any grain drying or handling operation without taking reasonable precautions to prevent particulate matter from becoming airborne.

Part C – Construction Conditions

(1) Except as otherwise provided in this part, the one (1) hatchery, one (1) feedmill, and one (1) grain handling and drying installation shall be constructed in accordance with specifications included in the incorporated applications.

(2) The following Emission Units shall be constructed such that emissions are vented through the specified controls prior to discharge to atmosphere:

(a) Truck Receiving Pit #2 [019-0121-8-0066, EU 6] emissions shall be controlled by baghouse BH-2;

(b) Salt Pneumatic Line [019-0121-8-0066, EU 9] emissions shall be controlled by baghouse BH-5;

(c) Methionine Pneumatic Line [019-0121-8-0066, EU 10] emissions shall be controlled by baghouse BH-6;

(d) Hammermill 1 [019-012108-0066, EU 11] emissions shall be controlled by baghouse BH-4;

(e) Hammermill 2 [019-012108-0066, EU 12] emissions shall be controlled by baghouse BH-4;

(f) Hammermill 3 [019-012108-0066, EU 13] emissions shall be controlled by baghouse BH-4;

(g) Pellet Line 1 (Pelletizer 1 & Pellet Cooler 1) [019-0121-8-0066, EU 25] emissions shall be controlled by cyclones 1 & 2 in parallel configuration; **[Reference: 40 CFR §63.11621(f)]**

(h) Pellet Line 2 (Pelletizer 2 & Pellet Cooler 2) [019-0121-8-0066, EU 26] emissions shall be controlled by cyclones 3 & 4 in parallel configuration; **[Reference: 40 CFR §63.11621(f)]**

(a) Mechanical Finished Feed Loadout 1 [019-0121-8-0066, EU 29] emissions shall be controlled by a dust sock; **[Reference: 40 CFR §63.11621(d)]**

(i) Truck Receiving Pit 1 [091-0121-8-0073, EU 30] emissions shall be controlled by baghouse BH-1;

(j) Receiving Elevator Leg 1 [019-0121-9-0073, EU 31] shall be enclosed;

(k) Truck Receiving Pit 3 [091-0121-8-0073, EU 33] emissions shall be controlled by baghouse BH-3;

(l) Receiving Elevator Leg 3 [019-0121-9-0073, EU 34] shall be enclosed;

(m) Berico Grain Dryer [019-0121-8-0662, EU 35] emissions shall be controlled by a 24 mesh screen on the Tyler Standard Screen Scale; **[Reference: COMAR 26.11.18.03A(1)]**

(n) Brock Grain Dryer [019-0121-8-0070, EU 38] emissions shall be controlled by a 24 mesh screen on the Tyler Standard Screen Scale; **[Reference: COMAR 26.11.18.03A(1)]**

(o) Dry Grain Elevator Leg [019-0121-8-0073, EU 39] shall be enclosed;

(p) Mechanical Grain Loadout 3 (Rail) [019-0121-8-0073, EU 53] emissions shall be controlled by a vortex spout;

(q) Mechanical Grain Loadout 2 (Tank 10) [019-0121-8-0073, EU 54] emissions shall be controlled by a dust sock; and

(r) Tank 7 Loadout (Gravity) [091-0121-8-0073, EU 55] emissions shall be controlled by a dust sock.

NOTE: The particulate controls required above are necessary for the facility to meet National Ambient Air Quality Standards (NAAQS).

(3) The two (2) emergency generators (Emission Units EU 3 and EU 4) shall be equipped with a non-resettable hour meter. **[Reference: COMAR 26.11.01.02H]**

(4) The emergency generator installed in 2022 (Emission Unit EU 4) shall:

(a) Be certified to meet the emissions standards in §60.4205(b). The generator must be installed and configured according to the manufacturer's specifications. **[Reference: §60.4211(c)]**

(b) Be certified to the emission standards for new nonroad diesel engines in 40 CFR§1039.105, appendix I. **[Reference: §60.4202(b)(2)].**

Part D – Operating Conditions

(1) Except as otherwise provided in this part, all registered installations shall be operated in accordance with specifications included in the application and any operating procedures recommended by equipment vendors unless the Permittee obtains from the Department written authorization for alternative operating procedures.

(2) The Permittee shall maintain all installations and associated air pollution control equipment so as to assure full and continuous compliance with all applicable air pollution control regulations and permit conditions.

(3) The Permittee shall properly maintain, calibrate, and operate all control panel instrumentation and all devices employed to monitor performance of the facility's air pollution control devices.

(5) During operation, the following Emission Units shall be vented through the specified controls prior to discharge to atmosphere:

(b) Truck Receiving Pit #2 [019-0121-8-0066, EU 6] emissions shall be controlled by baghouse BH-2;

(c) Salt Pneumatic Line [019-0121-8-0066, EU 9] emissions shall be controlled by baghouse BH-5;

(d) Methionine Pneumatic Line [019-0121-8-0066, EU 10] emissions shall be controlled by baghouse BH-6;

(e) Hammermill 1 [019-012108-0066, EU 11] emissions shall be controlled by baghouse BH-4;

(f) Hammermill 2 [019-012108-0066, EU 12] emissions shall be controlled by baghouse BH-4;

(g) Hammermill 3 [019-012108-0066, EU 13] emissions shall be controlled by baghouse BH-4;

(h) Pellet Line 1 (Pelletizer 1 & Pellet Cooler 1) [019-0121-8-0066, EU 25] emissions shall be controlled by cyclones 1 & 2 to be operated simultaneously; **[Reference: 40 CFR §63.11621(f)]**

(i) Pellet Line 2 (Pelletizer 2 & Pellet Cooler 2) [019-0121-8-0066, EU 26] emissions shall be controlled by cyclones 3 & 4 to be operated simultaneously; **[Reference: 40 CFR §63.11621(f)]**

(j) Mechanical Finished Feed Loadout 1 [019-0121-8-0066, EU 29] emissions shall be controlled by a dust sock; **[Reference: 40 CFR §63.11621(d)]**

(k) Truck Receiving Pit 1 [091-0121-8-0073, EU 30] emissions shall be controlled by baghouse BH-1;

(l) Receiving Elevator Leg 1 [019-0121-9-0073, EU 31] shall be enclosed;

(m) Truck Receiving Pit 3 [091-0121-8-0073, EU 33] emissions shall be controlled by baghouse BH-3;

(n) Receiving Elevator Leg 3 [019-0121-9-0073, EU 34] shall be enclosed;

(o) Berico Grain Dryer [019-0121-8-0662, EU 35] emissions shall be controlled by a 24 mesh screen on the Tyler Standard Screen Scale; **[Reference: COMAR 26.11.18.03A(1)]**

(p) Brock Grain Dryer [019-0121-8-0070, EU 38] emissions shall be controlled by a 24 mesh screen on the Tyler Standard Screen Scale; **[Reference: COMAR 26.11.18.03A(1)]**

(q) Dry Grain Elevator Leg [019-0121-8-0073, EU 39] shall be enclosed;

(r) Mechanical Grain Loadout 3 (Rail) [019-0121-8-0073, EU 53] emissions shall be controlled by a vortex spout;

(s) Mechanical Grain Loadout 2 (Tank 10) [019-0121-8-0073, EU 54] emissions shall be controlled by a dust sock; and

(t) Tank 7 Loadout (Gravity) [091-0121-8-0073, EU 55] emissions shall be controlled by a dust sock.

NOTE: The particulate controls required above are necessary for the facility to meet National Ambient Air Quality Standards (NAAQS).

(4) Unless an alternate fuel is approved by the Department, the boilers (Emission Units EU 1, 2, and 5) and grain dryers (Emission Units EU 35 and 38) shall burn only natural gas.

(5) Visible emissions from the boilers (Emission Units EU 1, 2, and 5) shall be limited to 20 percent opacity.

NOTE: The visible emissions standards do not apply during load changing, soot blowing, startup, or adjustments if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in any 60-minute period.
[Reference: COMAR 26.11.09.05A(1)]

(6) The Permittee may not cause or permit the operation of any grain drying or handling operation unless the following procedures are used:

(a) Proper housekeeping and equipment maintenance procedures, including, but not limited to, prompt removal of "beeswing" accumulation by a technique which prevents this material from re-entering the ambient air; and

(b) Reasonable precautions to minimize emissions from grain receiving, conveyance, or load-out facilities in accordance with good engineering design and operational procedures.
[Reference: COMAR 26.11.18.03A(2)]

(7) The Permittee shall develop a facility-wide fugitive dust plan to minimize particulate matter emissions from fugitive sources. The fugitive dust plan shall include reasonable precautions to prevent road dust from becoming airborne.
[Reference: COMAR 26.11.06.03C&D, COMAR 26.11.18.03A(2), and 40 CFR §63.11621]

(8) The Permittee shall develop a facility-wide operation and maintenance plan to ensure that all equipment, including control equipment, is operated and maintained in a manner that ensures compliance with all applicable regulations and permit conditions.

Part D1 – Operating Conditions for the Emergency Generator Installed in 1979 (Emission Unit EU 3), Subject to 40 CFR Part 63 Subpart ZZZZ

(1) The emergency generator shall combust only diesel fuel oil with a maximum sulfur content of 0.3 percent. **[Reference: COMAR 26.11.09.07A(1)]**

(2) The Permittee shall comply with COMAR 26.11.09.05E(2) & (3), which limits visible emissions of stationary internal combustion engine powered equipment to 10 percent opacity during idle mode and 40 percent opacity while operating at other than idle conditions.

Exceptions. COMAR 26.11.09.05E(4)(a) establishes that COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system. COMAR 26.11.09.05E(4)(b) establishes that COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(i) Engines that are idled continuously when not in service: 30 minutes; and

(ii) All other engines: 15 minutes.

COMAR 26.11.09.05E(4)(c) establishes that COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

(3) The Permittee shall comply with the following requirements for the emergency generator:

(a) Change the oil and filter every 500 hours of operation or annually, whichever comes first;

(b) Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first;

(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary; and

(d) Minimize the engine's time spent at idle during start-up and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[Reference: 40 CFR §63.6603(a), §63.6625(h), and Table 2d to 40 CFR 63, Subpart ZZZZ]

(4) If an emergency generator is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of 40 CFR 63, Subpart ZZZZ, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. **[Reference: Footnote 2 to Table 2d of 40 CFR 63, Subpart ZZZZ]**

(5) The Permittee must be in compliance with the emission limitations and operating limitations in 40 CFR 63, Subpart ZZZZ that apply to the engines at all times. **[Reference: 40 CFR §63.6605(a) and §63.6640(a)]**

(6) At all times the Permittee must operate and maintain each emergency generator, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by 40 CFR 63, Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **[Reference: 40 CFR §63.6605(b)]**

(7) The Permittee must operate and maintain each emergency generator according to the manufacturer's emission-related written instructions or the Permittee must develop their own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. **[Reference: 40 CFR §63.6625(e), §63.6640(a), and Table 6 to 40 CFR 63, Subpart ZZZZ]**

(8) The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Table 2d of 40 CFR 63, Subpart ZZZZ. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2d. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water

content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.

If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the Permittee must change the oil within 2 days of receiving the results of the analysis; if an engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 business days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. **[Reference: 40 CFR §63.6625(i)]**

(9) The Permittee must operate each emergency generator according to the following requirements:

(a) To be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR §63.6640(f)(1) through (4), is prohibited. If you do not operate the emergency generator according to the requirements in 40 CFR §63.6640(f)(1) through and (4), the engine will not be considered an emergency engine under 40 CFR 63, Subpart ZZZZ and must meet all requirements for non-emergency engines. **[Reference: 40 CFR §63.6640(f)]**

(b) There is no time limit on the use of the emergency generator in emergency situations. **[Reference: 40 CFR §63.6640(f)(1)]**

(c) The Permittee may operate the emergency generator for a maximum of 100 hours per calendar year, each, for maintenance checks and readiness testing, provided that the tests are recommended by federal, State, or local government, the manufacturer, the vendor, the regional transmission operator or the insurance company associated with the engine. The Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal State, or local standards require maintenance and testing of the

emergency generators beyond 100 hours per calendar year. **[Reference: 40 CFR §63.6640(f)]**

(d) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity**.** **[Reference: 40 CFR §63.6640(f)]**

Part D2 – Operating Conditions for the Emergency Generator Installed in 2022 (Emission Unit EU 4), Subject to 40 CFR Part 60 Subpart IIII

(1) The Permittee must operate and maintain the emergency generator according to the manufacturer's written instructions or according to procedures developed by the owner or operator that are approved by the manufacturer. Additionally, the Permittee may change only those settings that are permitted by the manufacturer. The Permittee must also meet the requirements of 40 CFR part 1068, as they may apply to an owner or operator. **[Reference: 40 CFR §60.4211]**.

(2) The Permittee shall comply with COMAR 26.11.09.05E(2) & (3), which limits visible emissions of stationary internal combustion engine powered equipment to 10 percent opacity during idle mode and 40 percent opacity while operating at other than idle conditions.

Exceptions. COMAR 26.11.09.05E(4)(a) establishes that COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system. COMAR 26.11.09.05E(4)(b) establishes that COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(i) Engines that are idled continuously when not in service: 30 minutes; and

(ii) All other engines: 15 minutes.

COMAR 26.11.09.05E(4)(c) establishes that COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

(3) The exhaust opacity from the emergency generator shall not exceed:

(a) 20 percent during the acceleration mode;

(b) 15 percent during the lugging mode; and

(c) 50 percent during the peaks in either the acceleration or lugging modes.
[Reference: 40 CFR §60.4205(b), §60.4202(b)(2), and §1039.105]

(4) The Permittee must use fuel in the emergency generator that meets the requirements of 40 CFR §1090.305 fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent, unless a waiver is obtained from the Department and/or the EPA Administrator.
[Reference: 40 CFR §60.4207].

Note: Compliance with this requirement demonstrates compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight.

(5) The Permittee must comply with the following emissions standards for the emergency generator:

(a) Non-methane Hydrocarbons and NOx (NMHC+NOx): 6.4 grams per kilowatt-hour (g/kW-hr)

(b) Carbon Monoxide (CO): 3.5 g/kW-hr

(c) Particulate Matter (PM): 0.2 g/kW-hr
[Reference: 40 CFR §60.4205(b), §60.4202(b)(2), and §1039.105, appendix I]

Note: Compliance is demonstrated by maintaining documentation that the engine is certified to meet these limits by the manufacturer.

(6) In accordance with 40 CFR §60:4211(f), non-emergency use of the emergency generator for the purpose of maintenance checks and readiness testing is limited to 100 hours per year or less unless prior approval is received from the Department.

(7) There is no time limit on the use of the emergency generator in emergency situations. **[Reference: 40 CFR §60.4211(f)(1)]**

(8) The Permittee may operate the emergency generator for a maximum of 100 hours per calendar year, each, for maintenance checks and readiness testing, provided that the tests are recommended by federal, State, or local government, the manufacturer, the vendor, the regional transmission operator or the insurance company associated with the engine. The Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal State, or local standards require maintenance and testing of the emergency generators beyond 100 hours per calendar year. **[Reference: 40 CFR §60.4211(f)(2i)]**

(9) The Permittee may operate the emergency generator for up to 50 hours per calendar year, each, in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. **[Reference: 40 CFR §60.4211(f)(3)]**

Part D3 – Operating Conditions for the Feedmill (Emission Units Registered to ARA No. 019-0121-8-0066), Subject to 40 CFR Part 63 Subpart DDDDDDD

(1) In all areas of the Feedmill where materials contain chromium or manganese, the Permittee shall maintain the following management practices and housekeeping measures to minimize dust:

(a) Use either an industrial vacuum system or manual sweeping to reduce the amount of dust;

(b) At least once per month, remove dust from walls, ledges, and equipment using low pressure air or by other means, and then sweep or vacuum the area;

(c) Keep exterior doors in the immediate affected areas shut except during normal ingress and egress, as practicable. This does not apply to areas where finished product is stored in closed containers, and no other materials containing chromium or manganese are present.

(d) Maintain and operate all process equipment in accordance with manufacturer's specifications and in a manner to minimize dust creation.

(e) Store any raw materials containing chromium or manganese in closed containers.

(f) The mixer where materials containing chromium or manganese are added must be covered at all times when mixing is occurring, except when the materials are being added to the mixer. Materials containing chromium or manganese must be added to the mixer in a manner that minimizes emissions.

(g) For bulk loading processes, where materials containing chromium or manganese are loaded into trucks or railcars, you must lessen fugitive emissions by reducing the distance between the loadout spout and the vehicle being loaded.

(h) For pelleting operations, capture emissions and route them to a cyclone. The cyclone must be maintained in accordance with good air pollution control practices and manufacturer's specifications and operating instructions, if available. If manufacturer's specifications and operating instructions are not available, you must develop and follow standard operating procedure that ensure proper operation and maintenance of the cyclone. The good air pollution control practices, cyclone manufacturer's specifications, cyclone maintenance, and cyclone operating instructions shall be included with the facility-wide operations and maintenance plan.

(i) All management practices and housekeeping measures to minimize dust shall be included in the facility-wide fugitive dust plan.

[Reference: 40 CFR Part §63.11621]

Part E – Notification and Monitoring

(1) The Permittee shall submit a Notification of Compliance Status within 120 days of the issuance of this permit. The Notification of Compliance Status shall include:

(i) The company name and address;

(ii) A statement by a responsible official that that official's name, title, phone number, email address, and signature, certifying the truth, accuracy, and

completeness of the notification and a statement whether the source has complied with all the relevant standards and other requirements of 40 CFR Part 63 Subpart DDDDDDD; and

(iii) Documentation of what constitutes proper operation of the cyclones required by 40 CFR §63.11621(f), that control particulate matter from the pellet lines.

[Reference: 40 CFR §63.11624]

(2) Perform monthly inspections of each device used to reduce fugitive emissions from bulk loading processes to ensure that each device is in proper working condition. **[Reference: 40 CFR §63.11622]**

(3) Perform quarterly inspections of the cyclones required by 40 CFR §63.11621(f) for corrosion, erosion, or any other damage that could result in air-leakage. **[Reference: 40 CFR §63.11622]**

(4) Perform a weekly visual inspection of the operating cyclones required by 40 CFR §63.11621(f) to ensure they are operating consistent with good air pollution control practices. **[Reference: 40 CFR §63.11622]**

Part F – Record Keeping and Reporting

(1) The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:

(a) All notifications, including the Notification of Compliance Status required by 40 CFR §63.11624(a)(2);

(b) The monthly throughput of the Feedmill, including the amount and type of all material processed, in units of pounds;

(c) Safety data sheets for all feed additives processed in the Feedmill;

(d) The monthly throughput of the Grain Side, including the type and amount of grain processed, in units of bushels, on a monthly basis;

(e) The vent filter mesh of each grain dryer, or equivalent information;

(f) The monthly amount of natural gas combusted in each grain dryer;

(g) The monthly amount of natural gas combusted in each boiler;

(h) For each fuel oil delivery, a certification from the fuel oil supplier that includes the name of the fuel oil supplier, the date of delivery, the amount of fuel oil delivered, and a statement from the fuel oil supplier that specifies the applicable permit limits and confirms that the fuel oil delivered complies with those limits;

(i) A log for each registered emergency generator indicating the amount of fuel oil combusted, the hours of operation, and the reason for generator operation (i.e., maintenance or operational testing, power outage, etc.). For emergency operation, the records shall include documentation supporting the reason why the operation was classified as an emergency;

(j) The results of all inspections required by 40 CFR Part 63 Subpart DDDDDDD, including the date, place, time of each inspection, the person performing the inspection, and the results of the inspection. Inspection results shall include any deviations found, corrective actions taken, the date & time that corrective actions were taken, and the duration of the time period from when the deviation was found upon inspection until the device was replaced or restored to operation;

(k) The Annual Compliance Certification Report required by 40 CFR §63.11624(b);

(l) The fugitive dust plan and records demonstrating compliance with the plan; and

(m) The operations and maintenance plan, and records to demonstrate compliance with the plan.

(2) The Permittee shall maintain on site, for the life of each registered emergency generator, records including:

(a) Engine information – make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(b) The installation date of the emergency generator; and

(c) The certifications of compliance or manufacturer engine test data required by 40 CFR §60.4211, as applicable.

(3) The Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:

(a) mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;

(b) accounts of the methods and assumptions used to quantify emissions;

(c) all operating data, including operating schedules and production data, that were used in determinations of emissions;

(d) amounts, types, and analyses of all fuels used;

(e) any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:

(i) all emissions data generated by such monitors;

(ii) all monitor calibration data;

(iii) information regarding the percentage of time each monitor was available for service; and

(iv) information concerning any equipment malfunctions.

(f) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:

(i) identifications and descriptions of all such equipment;

(ii) operating schedules for each item of such equipment;

(iii) accounts of any significant maintenance performed;

(iv) accounts of all malfunctions and outages; and

(v) accounts of any episodes of reduced efficiency.

(g) limitations on source operation or any work practice standards that significantly affect emissions; and

(h) other relevant information as required by the Department.

(4) The Permittee shall prepare, by March 1 of each year, an Annual Compliance Certification Report for the previous calendar year containing the following information:

(a) Company name and address;

(b) A statement by a responsible official with that official's name, title, phone number, email address, and signature, certifying the truth, accuracy, and completeness of the notification and a statement whether the source has complied with all the relevant standards and other requirements of 40 CFR Part 63 Subpart DDDDDDD;

(c) If the source is not in compliance with 40 CFR Part 63 Subpart DDDDDDD, include a description of deviations from the applicable requirements, the time periods during which the deviations occurred, and the corrective actions taken;

(d) Identification of all instances when the cyclones required by 40 CFR §63.11621(f) were not operating properly; and

(e) Notification if the average daily feed production level in the pellet lines for the previous calendar year was 50 tons per day or less in total, and that you are no longer complying with 40 CFR §63.11621(f).

[Reference: 40 CFR §63.11624(b)]

(5) The Annual Compliance Certification Report required by 40 CFR Part 63 Subpart DDDDDDD shall be submitted to the Department and EPA by March 1 of any year that there was a non-compliance or any instance when a cyclone required by 40 CFR §63.11621(f) was not operating properly in the previous calendar year. **[Reference: 40 CFR §63.11624(b)]**

(6) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall

be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.

(a) Certifications of emissions shall be submitted on forms obtained from the Department.

(b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.

(c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(7) The Permittee shall submit to the Department by April 1 of each year a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. Such analysis shall include either:

(a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

(b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.

(8) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.

Part G – Temporary Permit-to-Operate Conditions

(1) This permit-to-construct shall also serve as a temporary permit-to-operate that confers upon the Permittee authorization to operate the one (1) hatchery, one (1) feedmill, and one (1) grain handling and drying installation for a period of up to 180 days after issuance of this permit.

(2) During the effective period of the temporary permit-to-operate the Permittee shall operate the new installation as required by the applicable terms and conditions of this permit-to-construct, and in accordance with operating procedures and recommendations provided by equipment vendors.

(3) The Permittee shall submit to the Department an application for a State permit-to-operate no later than 60 days prior to expiration of the effective period of the temporary permit-to-operate.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410) 537-3230 ● 1-800-633-6101● www.mde.maryland.gov

Mail application and payment to:	**Make checks payable to the following:**
MDE/ARA P.O. Box 2037 Baltimore, MD 21203-2037	Department of the Environment/Clean Air Fund **$400 per generator set**

Request for Coverage: Air Quality General Permit to Construct

EMERGENCY GENERATORS

To be eligible for this Air Quality General Permit to Construct, your electric generator set must meet and you must check off ALL of the following requirements:

☑	This generator set is equipped with an emergency stationary internal combustion engine rated at 500 brake horsepower (373 kilowatts) or up to and including 2,681 brake horsepower (2000 kilowatts)
☑	This generator set is equipped with an engine that was constructed after July 11, 2005 with a manufacture date after April 1, 2006, the engine is an emergency diesel-fired, compression ignition, internal combustion engine with a displacement of less than 30 liters per cylinder, and the engine is certified to the emergency engine emission standards of 40 CFR §60.4205(a) or (b), as applicable, for the same model year and maximum engine power. **OR** This generator set is equipped with an engine that is an existing emergency stationary reciprocating internal combustion engine constructed before June 12, 2006.
☑	This generator set is **NOT** equipped with a spark ignition internal combustion engine or a combustion turbine
☑	This generator set **DOES NOT** participate in any demand response programs, and will not be used for peak or load shaving
☑	This generator set is **NOT** located at a major source of federal hazardous air pollutants (HAP)

NOTE: If you are unable to check off ALL of the boxes above, your generator set does not qualify for an Air Quality General Permit to Construct. Contact the Air Quality Permits Program for further instructions.

1) Business/Institution/Facility Information where the emergency electric generator set will be located			☐ Check this box if this is a federal facility.
Business/Institution/Facility Name: Perdue - Hurlock			Phone: 410-341-2055
Street Address: 37 Delaware Avenue			
City: Hurlock	State: MD1220021	Zip Code: 21643	County: Dorchester
Contact Person's Name: Jessie Long			Email Address: jessie.long@perdue.com

2) Owner Information ☐ Check this box if the owner is different from above. If checked, complete the following:			
Owner Name:			Phone:
Mailing Address:			
City:	State:	Zip Code:	County:

3) Installer Information

☐ Check this box if the installer is different from above. If checked, complete the following:

Installer Name:	Phone:
Installer Company Name:	

4) Emergency Electric Generator Set Information

No. of Identical Generator Sets Installed: 1	Installation Date: 1979		Engine Displacement (L/Cylinder):
Engine Make: CAT	Engine Model No: 3412	Engine Output (horsepower): 670.5	Engine Fuel Type: Diesel

Is the electric generator set an existing unit that was constructed before June 12, 2006?

☐ Yes

☐ No

If no, please complete the following additional information below.

Engine Manufacture Date:	Engine Model Year:	U.S. EPA Certified Tier Rating for the Engine:

5) Major Source of NOx

☐ Check this box if the generator set is located at a Major Source of NOx, as defined in COMAR 26.11.02.01. If checked, complete the following:

Capacity Factor of Generator Set (COMAR 26.11.09.01B):

Does the facility have an operator training course sponsored by the Department?

☐ Yes ☐ No

6) Required Attachments

Check off and attach to the application form.

■ Engine Manufacturer Literature/Engine Specification Sheet	☐ A copy of the engine Certificate of Conformity or other evidence showing that the engine is certified to meet U.S. EPA Tier standards for emergency engines, if the electric generator set is NOT an existing unit constructed before June 12, 2006.

7) Workers' Compensation Coverage Information

Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of workers' compensation coverage as required under Section 1-202 of the Workers' Compensation Act.

Workers' Insurance Policy or Binder Number: MWC31817255	☐ Check if self-employed or otherwise exempt from this requirement

"I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

11/20/25

Responsible Party Signature — Date

Jessie Long, Sr. Environmental Manager

Printed Name and Title

LEAVE BLANK
MDE USE ONLY

Permit/Registration Number: _____

AI: _____

Revised: 08/19/2019

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 01/13/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA LLC. 1050 CONNECTICUT AVENUE, SUITE 700 WASHINGTON, DC 20036-5386 Attn: CSS - TEL: 202 263 7600 CN108313099-*STND-XSWC-25-26	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED PERDUE FOODS LLC AND ITS SUBSIDIARIES 31149 OLD OCEAN CITY RD. PO BOX 1537 SALISBURY, MD 21802-1537	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Old Republic Insurance Company — 24147 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** CLE-006908651-05 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [ ] OCCUR [X] GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY [ ] PRO-JECT [ ] LOC OTHER:			MWZY31817425	01/01/2025	01/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 3,000,000 $ 3,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			MWTB31817525	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 5,000,000 $ $ $
	UMBRELLA LIAB [ ] OCCUR EXCESS LIAB [ ] CLAIMS-MADE DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
A A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [N] If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		MWC31817225 (AOS) MWC31817225 (WI)	01/01/2025 01/01/2025	01/01/2026 01/01/2026	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 2,000,000 $ 2,000,000 $ 2,000,000
A	Excess Workers Compensation Statutory Limits			MWXS31817325 (VA,IN,KY,MD,SC,WA)	01/01/2025	01/01/2026	Each Accident Disease-EA Emp/Policy Lmt	2,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of Insurance

CERTIFICATE HOLDER

PERDUE FOODS LLC and its subsidiaries
31149 Old Ocean City Road
Salisbury, MD 21804

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh USA LLC

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Product Specifications For 3412C (60 Hz)

Generator Set Specifications

Maximum Rating	800 ekW
Minimum Rating	635 ekW
Emissions/Fuel Strategy	Low Fuel Consumption
Voltage	220 to 480 Volts
Frequency	60 Hz
Speed	1800 rpm
Duty Cycle	Standby, Prime

Engine Specifications

Engine Model	3412C TA, V-12, 4-Stroke Water-Cooled Diesel
Bore	5.4 in
Stroke	6 in
Displacement	1648.86 in^3
Compression Ratio	13:00:01
Aspiration	TA
Fuel System	Pump and Lines
Governor Type	ADEM™ A5

Generator Set Dimensions

Length - Maximum	162.4 in

Width - Maximum	78.3 in
Height - Maximum	75 in
Dry Weight - Genset (minimum)	5761 lb
Dry Weight - Genset (maximum)	13275 lb

3412C (60 Hz) Standard Equipment

Air Inlet System

Air cleaner, single element canister type
Single element canister type

Control Panel

High coolant temperature
Customer data link (Modbus RTU)
Low coolant temperature
Low coolant level
Communications:
Run/auto/ stop/control
Engine cycle crank
Generator temperature monitoring module
Power factor (per phase & average)
Remote CAN annunciator
Serial annunciator module data link
DC volts
Frequency (Hz)
Operating hours.
Emergency stop pushbutton
Digital I/O module
Local annunciator
Low oil pressure
Oil pressure (psi, kPa or bar)
Emergency stop
Warning shutdowns:
Volts (L-L & L-N)
Remote Serial annunciator
Speed adjust
Amps (per phase & average)
Voltage adjust
EMCP 4.2B
Overspeed
coolant temperature

Digital Indicator for:
RPM
Accessory module data link
Failure to start (overcrank)
Controls:
Compatible with the following optional modules:

Cooling System

Caterpillar extended life coolant
Radiator with guard (sized for 50 degrees C)
Fan and belt guards
Coolant drain line with valve

Exhaust System

Stainless steel exhaust flex with ANSI style outlet flange

Fuel System

Primary and Secondary fuel filters
Fuel priming pump
Water separator

Generator And Attachments

3 Phase sensing
SR4B self excited
Class F temperature rise
VR6B voltage regulator
Busbar termination
12 Leads
Class H insulation
2:1 Volts/Hz
Reactive droop

Governing System

Cat electronic governor

Lube System

Oil drain line with valve
Lubricating oil
Oil filter

Mounting System

Base, formed steel with linear vibration isolators between base and engine-generator

Starting / Charging System

Battery with rack, cables
45 Amp Charging alternator
Fuel shutoff solenoid
24 Volt starting motor

General

Paint - Caterpillar yellow except rails and radiators gloss black

3412C (60 Hz) Optional Equipment

Air Inlet System

Air cleaner - Dual element
Air cleaner - Heavy element
Air cleaner - single element

Certificates

EU Certification

Circuit Breakers

4 Pole Circuit breakerswith shunt trip
3 Pole Circuit breakers with shunt trip
Power terminal strip

Control Panel

EMCP 4.3, EMCP 4.4
Temperature monitoring package
Vandal proof panel door
Generator running VFC
Earth leakage Ground fault relay
Common alarm/shutdown relay

Cooling System

Jacket water heater
Radiator duct flange
Radiator removal

Exhaust System

Muffler 10 dBA attenuation
Manifold and turbocharger guards
Muffler 35 dBA attenuation
Elbow mounting kit
Through wall installation kit

Fuel System

Manual fuel transfer pump
Automatic fuel transfer system

Generator And Attachments

Internal excitation (IE)
Anti-condensation heater
Permanent magnet excitation (PMG)
Oversize and premium generators

Governing System

Electronic load share

Lube System

Manual sump pump

Mounting System

Fuel tank base (1200 Ltr)

Special Tests / Reports

PGS Test report @ 1.0 power factor
PGS Test report @ 0.8 power factor
Factory witness test

Starting / Charging System

Oversize battery set
Battery chargers
Heavy duty starting system
Battery disconnect switch
Battery removal

Enclosures

DC lighting package
Weather protective enclosure (WP)
Sound attenuated enclosure (SA)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410) 537-3230 ● 1-800-633-6101● www.mde.maryland.gov

Mail application and payment to:	**Make checks payable to the following:**
MDE/ARA P.O. Box 2037 Baltimore, MD 21203-2037	Department of the Environment/Clean Air Fund **$400 per generator set**

Request for Coverage: Air Quality General Permit to Construct

EMERGENCY GENERATORS

To be eligible for this Air Quality General Permit to Construct, your electric generator set must meet and you must check off ALL of the following requirements:

☑	This generator set is equipped with an emergency stationary internal combustion engine rated at 500 brake horsepower (373 kilowatts) or up to and including 2,681 brake horsepower (2000 kilowatts)
☑	This generator set is equipped with an engine that was constructed after July 11, 2005 with a manufacture date after April 1, 2006, the engine is an emergency diesel-fired, compression ignition, internal combustion engine with a displacement of less than 30 liters per cylinder, and the engine is certified to the emergency engine emission standards of 40 CFR §60.4205(a) or (b), as applicable, for the same model year and maximum engine power. **OR** This generator set is equipped with an engine that is an existing emergency stationary reciprocating internal combustion engine constructed before June 12, 2006.
☑	This generator set is **NOT** equipped with a spark ignition internal combustion engine or a combustion turbine
☑	This generator set **DOES NOT** participate in any demand response programs, and will not be used for peak or load shaving
☑	This generator set is **NOT** located at a major source of federal hazardous air pollutants (HAP)

NOTE: If you are unable to check off ALL of the boxes above, your generator set does not qualify for an Air Quality General Permit to Construct. Contact the Air Quality Permits Program for further instructions.

1) Business/Institution/Facility Information where the emergency electric generator set will be located			☐ Check this box if this is a federal facility.
Business/Institution/Facility Name: Perdue - Hurlock			Phone: 410-341-2055
Street Address: 37 Delaware Avenue			
City: Hurlock	State: MD1220021	Zip Code: 21643	County: Dorchester
Contact Person's Name: Jessie Long			Email Address: jessie.long@perdue.com

2) Owner Information ☐ Check this box if the owner is different from above. If checked, complete the following:			
Owner Name:			Phone:
Mailing Address:			
City:	State:	Zip Code:	County:

3) Installer Information

☐ Check this box if the installer is different from above. If checked, complete the following:

Installer Name:	Phone:
Installer Company Name:	

4) Emergency Electric Generator Set Information

No. of Identical Generator Sets Installed: 1	Installation Date: 1979		Engine Displacement (L/Cylinder): 17.5
Engine Make: CAT	Engine Model No: 3412	Engine Output (horsepower): 670.5	Engine Fuel Type: Diesel

Is the electric generator set an existing unit that was constructed before June 12, 2006?

☐ Yes

☐ No

If no, please complete the following additional information below.

Engine Manufacture Date:	Engine Model Year: 2021	U.S. EPA Certified Tier Rating for the Engine: Tier 2

5) Major Source of NOx

☐ Check this box if the generator set is located at a Major Source of NOx, as defined in COMAR 26.11.02.01. If checked, complete the following:

Capacity Factor of Generator Set (COMAR 26.11.09.01B):

Does the facility have an operator training course sponsored by the Department?

☐ Yes ☐ No

6) Required Attachments

Check off and attach to the application form.

☒ Engine Manufacturer Literature/Engine Specification Sheet	☐ A copy of the engine Certificate of Conformity or other evidence showing that the engine is certified to meet U.S. EPA Tier standards for emergency engines, if the electric generator set is NOT an existing unit constructed before June 12, 2006.

7) Workers' Compensation Coverage Information

Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of workers' compensation coverage as required under Section 1-202 of the Workers' Compensation Act.

Workers' Insurance Policy or Binder Number: MWC31817255	☐ Check if self-employed or otherwise exempt from this requirement

"I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

11/20/25

Responsible Party Signature Date

Jessie Long, Sr. Environmental Manager

Printed Name and Title

LEAVE BLANK
MDE USE ONLY

Permit/Registration Number: _____

AI: _____

Revised: 08/19/2019

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 01/13/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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PRODUCER MARSH USA LLC. 1050 CONNECTICUT AVENUE, SUITE 700 WASHINGTON, DC 20036-5386 Attn: CSS - TEL: 202 263 7600 CN108313099-*STND-XSWC-25-26	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED PERDUE FOODS LLC AND ITS SUBSIDIARIES 31149 OLD OCEAN CITY RD. PO BOX 1537 SALISBURY, MD 21802-1537	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Old Republic Insurance Company — 24147 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** CLE-006908651-05 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [ ] OCCUR [X] GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY [ ] PRO-JECT [ ] LOC OTHER:			MWZY31817425	01/01/2025	01/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 3,000,000 $ 3,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			MWTB31817525	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 5,000,000 $ $ $
	UMBRELLA LIAB [ ] OCCUR EXCESS LIAB [ ] CLAIMS-MADE DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
A A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [N] If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		MWC31817225 (AOS) MWC31817225 (WI)	01/01/2025 01/01/2025	01/01/2026 01/01/2026	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 2,000,000 $ 2,000,000 $ 2,000,000
A	Excess Workers Compensation Statutory Limits			MWXS31817325 (VA,IN,KY,MD,SC,WA)	01/01/2025	01/01/2026	Each Accident Disease-EA Emp/Policy Lmt	2,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of Insurance

CERTIFICATE HOLDER

PERDUE FOODS LLC and its subsidiaries
31149 Old Ocean City Road
Salisbury, MD 21804

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh USA LLC

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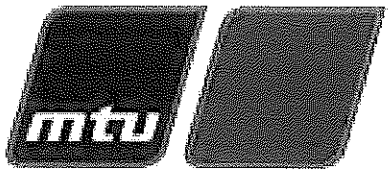
CURTIS POWER SOLUTIONS, LLC

Provider of:

MTU GENERATOR SETS



Engineering Data and Submittal Information

Perdue Hatchery

DIESEL GENERATOR SET
500kW, 277/480 Volts

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mtu A Rolls-Royce solution

August 27, 2021

PROJECT: Perdue Hatchery

Thank you for allowing Curtis Power Solutions, LLC the opportunity to submit the engineering data and proposal brochures specifically prepared for a 500kW Diesel Generator Set.

Per your instructions, we have not released the equipment for production.

I look forward to hearing from you and if you have any questions or require additional information, please feel free to contact me.

Sincerely,

Alan Koch

Alan Koch
Vice President of Sales & Engineering

MTU AMERICA MODEL 10V1600DS500 ENGINE GENERATOR SET
UL2200 Listed and Labeled

GENERATOR: 500kW, 625kVA, 0.8 PF, 277/480 volt, 3 phase, 12 wire, 60hZ, 1800 RPM, revolving field type with amortisseur windings and direct connected brushless exciter, generator base model 572RSL4027, voltage regulator DVR 2400 with a 130 degree temperature rise per NEMA MG1-22.40 & MG1-22.84, commercial RFI shielding, single bearing style, direct connected to the engine flywheel through a semi-flexible coupling. A Permanent Magnet Generator (PMG) and a 1,000 watt strip heater (wired to a terminal strip) are also included.

ENGINE: Model: MTU 10V1600G80S unit radiator-cooled with fan guard. A 4.8 inch bore, 5.91 inch stroke, 1,068 cubic inch displacement developing 752 BHP. Engine equipped for operation on #2 ultra-low sulfur diesel fuel and complete with all necessary accessories to include the following: 24 volt DC starting with charging alternator and regulator; with standard at +/-1/4% regulation and oil drain extension.

MGC-2020 CONTROL PANEL W/ACCESSORIES: This MTU Onsite Energy Digital Gen-Set Controller is a highly advanced integrated Gen-Set control system. The MGC-2020 is perfectly focused, combining rugged construction and microprocessor technology to offer a product that will hold up to almost any environment and flexible enough to meet your application's needs. This device provides Gen-Set control, transfer switch control, metering, protection and programmable logic in a simple, easy to use, reliable, rugged, and cost effective package. A four position relay panel for the engine run, engine fail, minor alarm, and a spare, plus a Contact Expansion Module (CEM) are included.

BREAKER: Model: PGL36080U33A, LSI, 80% rated at 800 amps. The mounted circuit breaker is in a NEMA 1 enclosure located on the right side of the generator outlet box when you are facing the generator end of the unit.

BATTERY: Qty: 2 Model: 4D lead-acid, 12 volt DC battery with unit mounted rack and cables. Extra ruggedness and resistance to vibration, heat, chemicals, and physical abuse are built into every commercial battery. The battery design features the latest in power storage technology as well as incorporating proven designs developed with the most experience in the business.

BATTERY CHARGER: Model: NRG 22-10 RCLS, 10 amps, 24 volts DC, 120 volt AC lead acid battery charger, mounted & DC wired - AC wired to a terminal strip.

JACKET HEATER: Model: CL150810-200, 208 volt, 1 phase, 5,000 watt water heater with a thermostat, wired to a terminal strip.

EXHAUST SILENCERS: Qty: 2 Model CPJS-06X, 6" unit mounted critical grade silencers.

ENCLOSURE: Level 2, skid-mounted weather-protective enclosure constructed of heavy gauge steel with fixed stormproof panels designed for 130 mph wind load rating. Consisting of a bolted and welded construction with unit-mounted internal silencers with hinged, lockable, double-doors on both sides of the enclosure with an exhaust scoop.

FUEL TANK: 48 hour / 2,000 gallon extended sub-base tank with stub up, rupture basin, double wall, UL 142 approved heavy gauge steel tank. Interior protective coating, rust proofed, and finish painted exterior.

VIBRATION ISOLATION: Qty: 16, Model SUA46908 pad isolators. (Shipped loose)

MISCELLANEOUS: The unit is painted MTU Grey; with a 2 year, 3000 hour basic limited warranty and a factory 1 hour extended run factory test.

The issuance of this submittal brochure does not initiate the delivery schedule quoted. The delivery schedule quoted will begin only after formal approval of the submitted material and the approved submittal brochure has been returned to and received by MTU America.

Diesel Generator Set

mtu 10V1600 DS500

500 kWe/60 Hz/Standby/208 - 600V

Reference *mtu* 10V1600 DS500 (450 kWe) for Prime Rating Technical Data

System ratings

Voltage (L-L)	208V †	240V †	380V	440V	480V †	600V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	500	500	500	500	500	500
kVA	625	625	625	625	625	625
Amps	1,735	1,504	950	820	752	601
skVA@30% voltage dip	805	605	947	1,040	1,890	1,041
Generator model	572RSL4029	572RSL4029	573RSL4033	572RSL4027	572RSL4027	572RSS4270
Temp rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD WYE	12 LEAD DELTA	12 LEAD WYE	12 LEAD WYE	12 LEAD WYE	4 LEAD WYE

† UL 2200 offered

Certifications and standards

- Emissions
  - EPA Tier 2 certified
  - South Coast Air Quality Management District (SCAQMD)
- Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Seismic certification – optional
  - 2018 IBC certification
  - OSHPD pre-approval
- UL 2200 - optional (refer to *System ratings* for availability)
- CSA - optional
  - CSA C22.2 No. 100
  - CSA C22.2 No. 14
- Performance Assurance Certification (PAC)
  - Generator set tested to ISO 8528-5 for transient response
  - Verified product design, quality, and performance integrity
  - All engine systems are prototype and factory tested
- Power rating
  - Accepts rated load in one step per NFPA 110
  - Permissible average power output during 24 hours of operation is approved up to 85%.

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Standard features*

- Single source supplier
- Global product support
- Two (2) Year/3,000 Hour Basic Limited Warranty
- 10V1600 diesel engine
  - 17.5 liter displacement
  - Common rail fuel injection
  - 4-cycle
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
  - Integral set-mounted
  - Engine-driven fan
- Generator
  - Brushless, rotating field generator
  - 2/3 pitch windings
  - Permanent Magnet Generator (PMG) supply to regulator
  - 300% short circuit capability
- Digital control panel(s)
  - UL recognized, CSA certified, NFPA 110
  - Complete system metering
  - LCD display

Standard equipment*

Engine
- Air cleaners
- Oil pump
- Oil drain extension and shut-off valve
- Full flow oil filter
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 24V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery box and cables
- Flexible fuel connectors
- Flexible exhaust connection
- EPA certified engine

Generator
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
- Self-ventilated
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 130 °C maximum standby temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- ± 0.25% voltage regulation no load to full load
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Digital control panel(s)
- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- CANBus ECU communications
- Windows®-based software
- Multilingual capability
- Communications to remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

* Represents standard product only. Consult the factory/*mtu* Distributor for additional configurations.

Application data

Engine	
Manufacturer	*mtu*
Model	10V1600G80S
Type	4-cycle
Arrangement	10-V
Displacement: L (cu in)	17.5 (1,068)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression ratio	17.5:1
Rated rpm	1,800
Engine governor	electronic isochronous (ADEC)
Maximum power: kWm (bhp)	561 (752)
Steady state frequency band	± 0.25%
Air cleaner	dry

Liquid capacity	
Total oil system: L (gal)	61 (16)
Engine jacket water capacity: L (gal)	60 (15.9)
System coolant capacity: L (gal)	99.3 (26.2)

Electrical	
Electric volts DC	24
Cold cranking amps under -17.8 °C (0 °F)	1,050
Batteries: group size	4D
Batteries: quantity	2

Fuel system	
Fuel supply connection size	-10 JIC 37° female M20 x 1.5 male adapter provided
Fuel return connection size	-6 JIC 37° female M14 x 1.5 male adapter provided
Maximum fuel lift: m (ft)	5 (16)
Recommended fuel	diesel #2
Total fuel flow: L/hr (gal/hr)	401.3 (106)

Fuel consumption	
At 100% of power rating: L/hr (gal/hr)	125 (33.1)
At 75% of power rating: L/hr (gal/hr)	97 (25.6)
At 50% of power rating: L/hr (gal/hr)	74 (19.5)

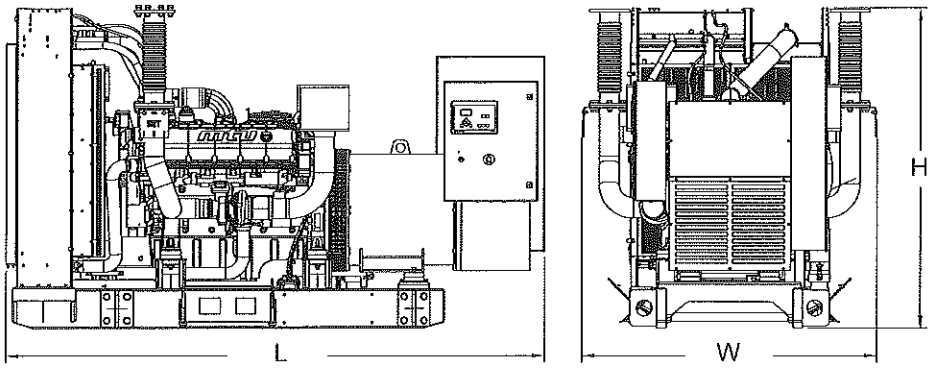
Cooling - radiator system	
Ambient capacity of radiator: °C (°F)	50 (122)
Maximum restriction of cooling air: intake and discharge side of radiator: kPa (in. H_2O)	0.2 (0.8)
Water pump capacity: L/min (gpm)	466 (123)
Heat rejection to coolant: kW (BTUM)	235 (13,364)
Heat rejection to after cooler: kW (BTUM)	118 (6,710)
Heat radiated to ambient: kW (BTUM)	58.6 (3,332)
Fan power: kW (hp)	17.1 (22.9)

Air requirements	
Aspirating: *m^3/min (SCFM)	35 (1,250)
Air flow required for radiator cooled unit: *m^3/min (SCFM)	642 (22,672)
Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: *m^3/min (SCFM)	213 (7,516)

* Air density = 1.184 kg/m^3 (0.0739 lbm/ft^3)

Exhaust system	
Gas temperature (stack): °C (°F)	461 (862)
Gas volume at stack temperature: m^3/min (CFM)	103 (3,623)
Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H_2O)	8.5 (34.1)

Weights and dimensions



Drawing above for illustration purposes only, based on standard open power 480 volt generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

REFERENCE ONLY; SEE PAGE 72

System	Dimensions (L x W x H)	Weight
Open Power Unit (OPU)	3,416 x 1,873 x 2,032 mm (134.5 x 73.8 x 80 in)	4,175-5,129 kg (9,205-11,308 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

Sound data

Unit type	Standby full load
Level 0 (OPU): dB(A)	93.5

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

Emissions data

NO_x + NMHC	CO	PM
6.9	0.45	0.03

- All units are in g/hp-hr and shown at 100% load (not comparable to EPA weighted cycle values). Emission levels of the engine may vary with ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data was obtained in compliance with US EPA regulations. The weighted cycle value (not shown) from each engine is guaranteed to be within the US EPA standards.

Rating definitions and conditions

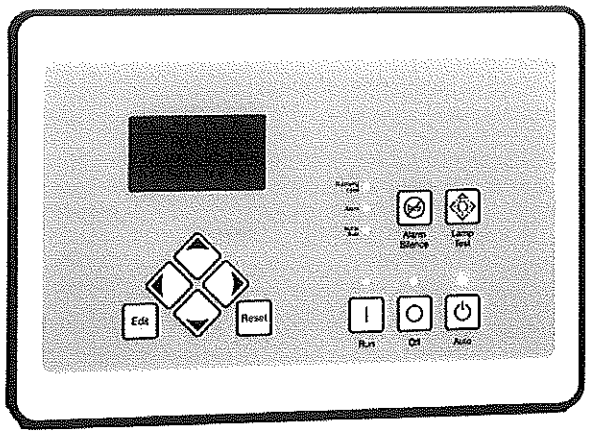
- Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, and AS 2789. Average load factor: ≤ 85%.
- Nominal ratings at standard conditions: 25 °C and 300 meters (77 °F and 1,000 feet).
- Deration factor:
  - Consult your local ***mtu*** Distributor for altitude derations.
  - Consult your local ***mtu*** Distributor for temperature derations.

Subject to change. | 235611 | 2021-05

Digital Generator Set Controller Data Sheet

MGC-2000 Series

The MGC-2000 Series controllers include the following models which are described throughout this document.*
- MGC-2010
- MGC-2020
- MGC-2050



mtu Generator Set Controllers (MGC Series) are highly advanced integrated digital generator set control systems. The MGC-2000 Series is perfectly focused, combining rugged construction and microprocessor technology to offer a product that will hold up to almost any environment and is flexible enough to meet your application's needs. The MGC-2000 Series provides generator set control, transfer switch control, metering, protection, and programmable logic in a simple, easy-to-use, reliable, rugged, and cost effective package.

PRODUCT HIGHLIGHTS

- Three-phase generator metering
- Engine metering
- Generator set control
- Engine and generator protection
- Var sharing over Ethernet
- BESTCOMS*Plus*®
  - Windows®-based software for optional remote operation (Software can be downloaded at www.mtu-solutions.com)
  - Programming and setup software
  - Intuitive and powerful
  - Remote control and monitoring
  - Programmable logic
  - USB communications
- Automatic transfer switch compatible
- Exercise timer
- Suitable for use on rental generator sets with high/low line sensing, single or three phase sensing override, and wye/delta/grounded delta
- SAE J1939 Engine Control Unit (ECU) communications
- Automatic generator configuration detection
- Selection of integrating reset of instantaneous reset characteristics for overcurrent protection
- Multilingual capability
- Remote annunciation to RDP-110
- Extremely rugged, fully potted design
- 16 programmable contact inputs, 12 programmable contact outputs
- ModBus™ communications with RS-485 (Refer to *Configuration Options*.)
- UL recognized, CSA certified, CE approved
- Highly Accelerated Life Tests (HALT) tested
- IP 54 front panel rating with integrated gasket
- NFPA-110 compatible
- Microprocessor based
- Complete system metering
- Expandable to meet customer needs

*Please refer to the last page of this data sheet for available MGC-2000 Series configuration options. The MGC Series Controller Comparison Data Sheet is available as a reference for all MGC Series configuration options.

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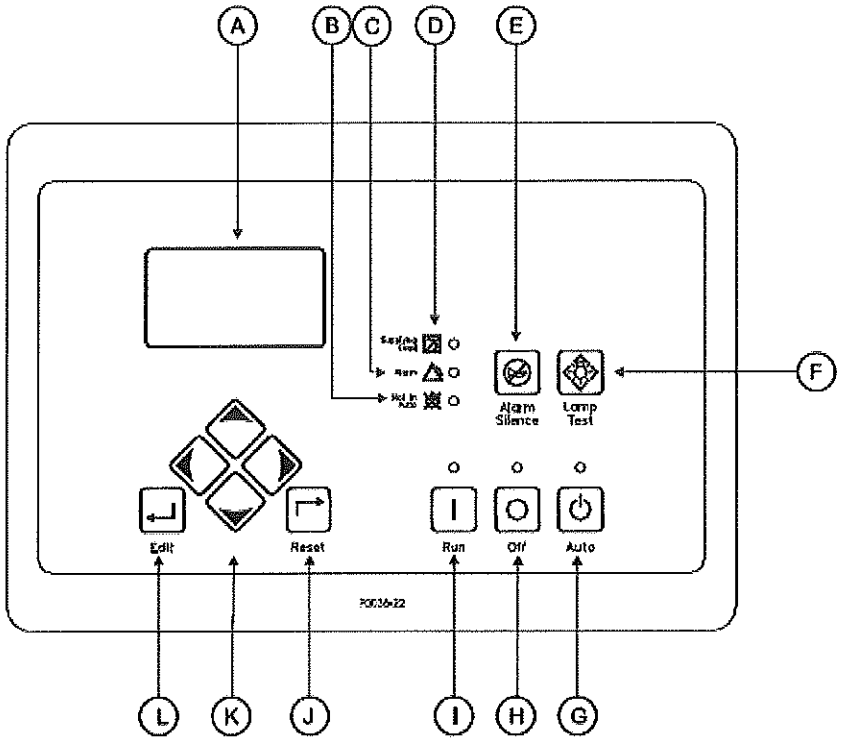
DIAGRAM



Front Panel Descriptions

A. Liquid Crystal Display
B. Not in Auto Indicator
C. Alarm Indicator
D. Supplying Load Indicator
E. Alarm Silence Pushbutton
F. Lamp Test Pushbutton
G. Auto Pushbutton and Mode Indicator
H. Off Pushbutton and Mode Indicator
I. Run Pushbutton and Mode Indicator
J. Reset Pushbutton
K. Arrow Pushbuttons
L. Edit Pushbutton

FUNCTIONS

Generator set protection

Generator ANSI codes

- Overvoltage (59)
- Overfrequency (81o)
- Reverse power (32)
- Undervoltage (27)
- Underfrequency (81u)
- Loss of excitation (40q)
- Phase imbalance (47)
- Overcurrent (51) (optional)
- Vector shift (78) (optional)
- Rate of change of frequency (ROCOF) (81R) (Refer to *Configuration Options.*)

All generator set protection features are programmable as alarms, pre-alarms, status, or not used.

Alarms (Shutdowns)

- Low oil pressure
- High coolant temperature
- Low coolant level
- Overspeed
- Overcrank
- Coolant temp sender fail (non-ECU engines)
- Oil pressure sender fail (non-ecu engines)
- Emergency stop
- Critical low fuel level (Refer to *Configuration Options.*)

FUNCTIONS, continued:

Generator Set Protection, continued:

Pre-alarms (Warnings)
- Low oil pressure
- High coolant temperature
- Low coolant temperature
- Battery overvoltage
- Weak battery voltage
- Aem comms failure
- Breaker open failure
- Cem comms failure
- Generator reverse rotation
- Engine kw overload (three levels)
- Loss of sensing
- Checksum failure
- Ecu comms fail
- Low fuel level
- High fuel level
- Active diagnostic trouble codes (DTC)
- Breaker close failure
- Low battery voltage

All alarms and pre-alarms can be enabled or disabled via the BESTCOMS*Plus*® PC software or the front panel. Additional custom alarms and pre-alarms are available upon request.

Generator set metering
- Generator parameters include voltage, current, real power (watts), apparent power (VA), and power factor (PF).
- Engine parameters include oil pressure, coolant temperature, battery voltage, speed, fuel level, engine load, coolant level (from ECU), ECU specific parameters, and run-time statistics.

Engine control
- Cranking control: cycle or continuous (quantity and duration fully programmable)
- Engine cooldown: smart cooldown function saves fuel and engine life
- Successful start counter: counts and records successful engine starts
- Timers:
  - Engine cooldown timer
  - Engine maintenance timer
  - Pre-alarm time delays for weak/low battery voltage
  - Alarm time delay for overspeed
  - Alarm time delay for sender failure
  - Arming time delays after crank disconnect:
    - Low oil pressure
    - High coolant temperature
  - Pre-crank delay
  - Continuous or cycle cranking time delay
  - Programmable logic timers

Event recording
The MGC-2000 Series has an event recorder that provides a record of alarms, pre-alarms, engine starts, engine runtime loaded, engine runtime unloaded, last run date, and many other events that are all date and time stamped to help the user determine the cause and effect of issues related to the generator set. Contains 30 event records each retaining up to 99 occurrences in memory. Time, date, and engine hour detail is available for the most current 30 occurrences within each event record.

Transfer switch control (Mains failure)
The MGC-2000 Series has the ability to detect a mains failure via a single- or three-phase bus input. A mains failure is established when any one of the following conditions are met:

- Any phase of bus voltage falls below the dead bus threshold
- Any phase of bus voltage is unstable due to overvoltage or undervoltage
- Any phase of bus voltage is unstable due to overfrequency or underfrequency

When conditions are met, the MGC-2000 Series will start the generator set and, when ready, will send generator and mains breaker commands to apply power to the load from the generator set. The MGC-2000 Series implements open or closed breaker transitions to and from the mains. When the mains returns and is considered stable, the MGC-2000 Series will transfer the load back to the mains and stop the engine.

ModBus™ RTU
When utilized, the user can send and receive information from the MGC-2000 Series via the RS-485 communications port and ModBus™ RTU protocol. This feature allows the MGC-2000 Series controlled generator set to be fully integrated into the building management system. Please see the *MGC-2000 Series Controller Manual* for the ModBus™ register list.

Programmable logic
The MGC-2000 Series offers a very powerful, yet easy-to-use, programmable logic scheme, BESTlogic™*Plus*, for custom programming of the various inputs, outputs, alarms, and pre-alarms. It allows these elements to be integrated into a complete logic scheme so that the user can meet even the most complex specification. The programmable logic control includes the selection of logic gates and timers, with drag-and-drop technology to make it fast and simple.

FUNCTIONS, continued:

Remote display panel annunciation

The MGC-2000 Series can communicate to a remote display panel, Model RDP-110. This requires only two wires to annunciate all of the alarms and pre-alarms required by NFPA-110 Level I and II. External power is required.

External modem interface

The MGC-2020 and MGC-2050 controllers include an external modem interface permitting an external modem to be connected to the MGC controller via RS-232. A dial-out modem enables remote control, monitoring, and setting of the MGC-2000 Series. When an alarm or pre-alarm condition occurs, the MGC-2000 Series can dial up to four telephone numbers in sequence until an answer is received and the condition is annunciated.

Note: Only an external modem interface is provided. The external modem must be provided by a third party. The external modem is only available on the MGC-2020 and MGC-2050 controller configurations of the MGC-2000 Series.

SAE J1939 communications

SAE J1939 CANBus communications allows the MGC-2000 Series to communicate with the ECU to gather critical engine information like oil pressure, engine coolant temperature, RPM, battery voltage, and much more. By utilizing the ECU, the addition of analog engine senders is no longer required. This can save substantial money for the installer. It also eliminates any errors or discrepancies between the ECU data and the data displayed on the MGC-2000 Series that may be present due to analog sender inaccuracies or incompatibility. An additional benefit is access to the ECU's diagnostic troubleshooting codes (DTCs). The DTCs provide information about the engine's operating conditions and communicates these, via SAE J1939, to the MGC-2000 Series, eliminating the need for hand-held service tools to diagnose simple engine issues.

SPECIFICATIONS

Operating power

- Nominal: 12 or 24 VDC
- Range: 6 to 32 VDC
- Power consumption:
  - Sleep Mode: 5W with all relays non-energized
  - Normal operational mode: 7.9W - run mode, LCD heater off, six relays energized
- Battery ride-through: withstands cranking ride-through down to 0 V for 50 ms, starting at 10 VDC.

Current sensing (5 A CT inputs)

- Continuous rating: 0.1 to 5.0 Aac
- One second rating: 10 Aac
- Burden: 1 VA

Voltage sensing

- Range: 12 to 576 V rms, line-to-line
- Frequency range: 10 to 72 Hz
- Burden: 1 VA
- One second rating: 720 V rms

Input contacts

Contact sensing inputs include one emergency stop input and 16 programmable inputs. The emergency stop input accepts normally closed, dry contacts. The remote emergency stop is limited to 75 ft. standard. Extended runs are available with optional relay. All programmable inputs accept normally open, dry contacts. The factory utilizes up to three of these inputs.

Engine System Inputs

- Fuel Level Sensing Resistance Range: 0 to 250 Ω nominal
- Coolant Temperature Sensing Resistance Range: 10 to 2,750 Ω nominal
- Oil Pressure Sensing Resistance Range: 0 to 250 Ω nominal
- Engine Speed Sensing:
  - Magnetic Pickup or CANBus
    - Magnetic Pickup Voltage Range: 3 to 35 V peak (6 to 70 V peak to peak)
    - Magnetic Pickup Frequency Range: 32 to 10,000 Hz
  - Generator Frequency (alternate or redundant)
    - Voltage Range: 12 to 576 V rms

Output contacts

- (15) total programmable outputs: (3) 30 A @ 28 VDC and (12) 2 A @ 30 VDC
- The factory utilizes the following on each generator set which can be reprogrammed as needed:
  - (3) 30 A @ 28 VDC for pre-start, start, and run
  - (12) 2 A @ 30 VDC for general purpose

SPECIFICATIONS, continued:

Metering

Generator and bus voltage (rms)
- Metering range: 0 to 576 VAC (direct measurement); up to 9,999 VAC (with appropriate voltage transformer)
- Accuracy: ±1% of programmed rated voltage of ±2 VAC (subject to accuracy of voltage transformer when used)

Generator current (rms)
- Generator current is measured at the secondary windings of 5 A CTs.
- Metering range: 0 to 5,000 Aac
- CT primary range: 1 to 5,000 Aac, in primary increments of 1 Aac
- Accuracy: ±1% of programmed rated current or ±2 Aac (subject to accuracy of CTs)

Generator and bus frequency
- Metering range: 10 to 72 Hz
- Accuracy: ±0.25% or 0.05 Hz

Apparent power
- Indicates total kVA and individual line kVA (four-wire, line-to-neutral or three-wire, line-to-line).
- Accuracy: ±3% or the full-scale indication or ±2 kVA

Power factor
- metering range: 0.2 leading to 0.2 lagging
- Accuracy: ±0.02

Real power
- Indicates total kW and individual line kW (four-wire, line-to-neutral or three-wire, line-to-line)
- Accuracy: ±3% of the full-scale indication or ±2 kW

Oil pressure
- Metering range: 0 to 150 psi or 0 to 1,034 kPa
- Accuracy: ±3% of actual indication or ±2 psi or ±12 kPa (subject to accuracy of sender)

Coolant temperature
- Metering range: 0 °C to 204 °C (32 °F to 410 °F)
- Accuracy: ±3% of actual indication or ±2° (subject to accuracy of sender)

Fuel level
- Metering range: 0 to 100%
- Accuracy: ±2% (subject to accuracy of sender)

Battery voltage
- Metering range: 6 to 32 VDC
- Accuracy: ±3% of actual indication or ±0.2 VDC

Engine RPM
- Metering range: 0 to 4,500 rpm
- Accuracy: ±2% of actual indication or ±2 rpm

Engine run time
- Engine run time is retained in non-volatile memory.
- Metering range: 0 to 99,999 h; update interval: 6 min
- Accuracy: ±1% of actual indication or ±12 min

Maintenance timer
- Maintenance timer indicates the time remaining until generator set service is due. Value is retained in non-volatile memory.
- Metering range: 0 to 5,000 h; update interval: 6 min
- Accuracy: ±1% of actual indication or ±12 min

Generator protection functions

Overvoltage (59) and undervoltage (27)
- Pickup range: 70 to 576 VAC
- Activation delay range: 0 to 30 s

Overfrequency (81O) and underfrequency (81U)
- Pickup range: 45 to 66 Hz
- Pickup increment: 0.1 Hz
- Activation delay range: 0 to 30 s

Reverse power (32)
- Pickup range: -50 to 5%
- Pickup increment: 0.1%
- Hysteresis range: 1 to 10%
- Hysteresis increment: 0.1%
- Activation delay range: 0 to 30 s
- Activation delay increment: 0.1 S

Loss of excitation (40Q)
- Pickup range: -150 to 0%
- Pickup increment: 0.1%
- Hysteresis range: 1 to 10%
- Hysteresis increment: 0.1%
- Activation delay range: 0 to 30 s
- Activation delay increment: 0.1 S

SPECIFICATIONS, continued:

Generator protection functions, continued:

Phase imbalance (47)
- Pickup range: 5 to 100 VAC
- Pickup increment: 1 VAC
- Activation Delay Range: 0 To 30 S
- Activation Delay Increment: 0.1 S

ROCOF (81R) (optional)
- Pickup range: 0.2 to 10 Hz/s
- Pickup increment: 0.1 Hz/s
- Activation delay range: 0 to 10,000 ms
- Activation delay increment: 1 ms
- Accuracy: 0.2 Hz/s
-

Overcurrent (51)
- Pickup range: 0.18 to 1.18 Aac (1 A current sensing)
- Time dial range: 0

Vector shift (78) (optional)
- Pickup range: 2 to 90°
- Pickup increment: 1°
- Accuracy: ±1°

Environmental
- Temperature
  - Operating: -40 °C to 70 °C (-40 °F to 158 °F)
  - Storage: -40 °C to 85 °C (-40 °F to 185 °F)
- Humidity: IEC 68-2-38
- Salt fog: ASTM B 17-73, IEC 68-2-11 (tested while operational)
- Ingress protection: IEC IP54 for front panel
- Shock: 15 G in three perpendicular planes
- Vibration: 5 to 29 to 5 Hz at 1.5 G peak for 5 min.
  29 to 52 to 29 Hz at 0.036" DECS-A for 2.5 min.
  52 to 500 to 52 Hz at 5 G peak for 7.5 min.
  - Swept over the above ranges for 12 sweeps in each of three mutually perpendicular planes with each 15 minute sweep

Agency approvals
- UL/CSA approvals: "cURus" approved to UL 6200 and CSA C22.2 No.14
- NFPA compliance: complies with NFPA Standard 110, standard for emergency and standby power
- CE marked: complies with applicable EC directives

ADDITIONAL SPECIFICATIONS

Battery backup for real time clock
The MGC-2000 Series provides a real-time clock with an internal backup battery. The battery will maintain timekeeping for approximately 10 years (depending on conditions) after power is removed from the controller. The clock is used by the event recorder and sequence of events functions to time-stamp events, and the exercise timer is used to start and stop the generator set when the exercise feature is utilized.

Breaker management
The MGC-2000 Series is capable of controlling the generator breaker and the mains breaker. The status of the breakers is determined by using BESTlogic™*Plus* programmable logic to set up the GENBRK and MAINSBRK logic blocks. These logic blocks have outputs that can be configured to energize an output contact and control a breaker, as well as inputs for breaker control and status. The MGC-2000 Series will attempt to close a breaker only after verifying that it can be closed. If the breaker cannot be closed, the close request will be ignored. Only one breaker can be closed at a time. Synchronization is required before closing the breaker to a live bus. Closure to a dead bus can be performed after meeting dead bus threshold and timing requirements set by the user.

– .

OPTIONAL ACCESSORIES, CEM-2020, continued

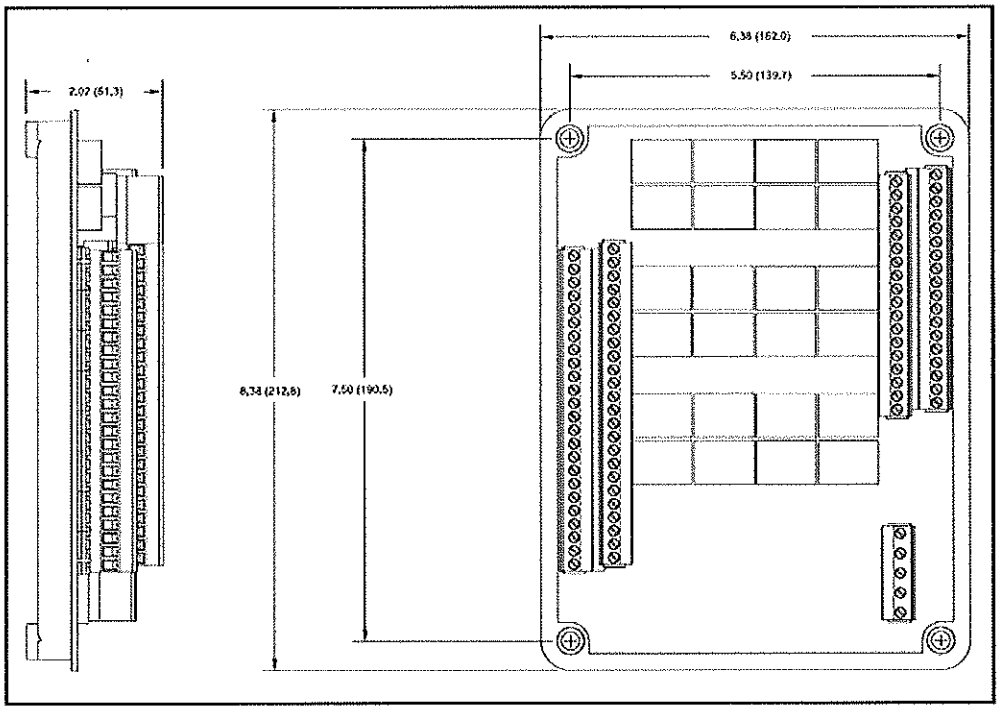
Contact Expansion Module 2020 (CEM-2020)

The CEM-2020 is a remote device that provides additional MGC-2000 Series contact inputs and outputs, giving the user flexibility to use the same model MGC-2000 Series generator set controller for simple or complicated applications that require contact functionality or duplication of contacts for remote annunciation. Its features include:

- **10 Contact Inputs:** The CEM-2020 provides 10 programmable contact inputs with the same functionality as the contact inputs on the MGC-2000 Series.
- **24 Output Contacts:** The CEM-2020 provides 24 Form C programmable output contacts with the same functionality as the output contacts on the MGC-2000 Series. The output ratings of the Form C contacts are:

Output No.	Rating (Cont.)	Additional Information
13–24	1 A @ 30 VDC	This is a gold flash contact for low current circuits.
25–36	4 A @ 30 VDC	

- **Communications via CANBus:** The CEM-2020 communicates to the MGC-2000 Series via SAE J1939 CANBus communications and allows the user to program the functionality of these inputs and outputs in the BESTCOMS*Plus*® software.
- The user can add labels for the inputs and outputs that appear in BESTCOMS*Plus*®, show up on the front panel, and in programmable logic. All the functionality can be assigned to these inputs and outputs as if they were an integrated part of the MGC-2000 Series. The CEM-2020 module has all of the environmental ratings of the MGC-2000 Series, including a model for UL Class1 Div2 applications. The CEM-2020 terminals accept a maximum wire size of 12 AWG, while the chassis ground requires 12 AWG wire. Flexibility is one of the benefits of the MGC-2000 Series, and this add-on module enhances that benefit even further.



CEM-2020 Overall Dimensions

CONFIGURATION OPTIONS

Generator protection	MGC-2010	MGC-2020	MGC-2050
Standard			
Phase Imbalance (47)		✓	✓
Overcurrent (50)			
Overvoltage (59)	✓	✓	✓
Undervoltage (27)	✓	✓	✓
Underfrequency (81U)	✓	✓	✓
Overfrequency (81O)	✓	✓	✓
Reverse Power (32)	✓	✓	✓
Loss of Excitation (40Q)	✓	✓	✓
Enhanced			
Overcurrent (51)		✓	✓
Vector Shift (78)		✓	✓
Rate of Change of Frequency (81R)		✓	✓
Ground Fault			

Inputs	MGC-2010	MGC-2020	MGC-2050
Controller			
Digital	16	16	16
Analog (Dedicated)	3	3	3
Analog	-	-	-
CEM			
Digital	10	10	10
AEM			
Analog	8	8	8
TC	2	2	2
RTD	8	8	8

Outputs	MGC-2010	MGC-2020	MGC-2050
Controller			
Digital Form A, 30 Amp	3	3	3
Digital Form A, 5 Amp	-	-	-
Digital Form A, 2 Amp	12	12	12
Analog	-	-	-
CEM			
Digital Form C, 4 Amp	12	12	12
Digital Form C, 1 Amp	12	12	12
AEM			
Analog	4	4	4
External to Controllers / (CEM)			
Digital Form C, 10 Amp (Interposing Relay)	10	10	10

Communication	MGC-2010	MGC-2020	MGC-2050
ModBus RTU (RS-485)	✓	✓	✓
ModBus TCP-IP			
RDP-110	✓	✓	✓
CANBus	✓	✓	✓
Modem Interface (RS-232)		✓	✓
Ethernet			

Metering	MGC-2010	MGC-2020	MGC-2050
Bus 1 Voltage			
Single Phase	✓	✓	✓
Three Phase	✓	✓	✓
Bus 2 Voltage			
Single Phase			
Three Phase			
Current Transformers			
Generator	3	3	3
Auxiliary	-	-	-

Subject to change. | WT00032340 | 2021-03

marathon® Generators

REGAL

Base Model: 572RSL4027

Configured Values

	Base Value	Customized
Phase	3	
Frequency	60	
Voltage	480	480
PF	0.8	0.8
KW	515	500
KVA	644	625

My Selection

✓ Reactive Capability Curve

MAGNAMAX DVR

MARATHON ELECTRIC GENERATORS

SYNCHRONOUS AC GENERATOR
TYPICAL SUBMITTAL DATA

Base Model: 572RSL4027 | Winding: 570072 | Date: 08/26/2021

Kilowatt ratings at	1800 RPM	60 Hertz	12 Leads
kW (kVA)	3 Phase	0.8 Power Factor	Open or Dripproof Enclosure

	CONTINUOUS ②					STANDBY ②	
Voltage ①	NEMA B 80/40 °C	NEMA F 95/50 °C	ABS 95/50 °C	NEMA F 105/40 °C	NEMA H 125/40 °C	NEMA F 130/40 °C	NEMA H 150/40 °C
240Y/480Y	440 (550)	475 (594)	475 (594)	500 (625)	515 (644)	515 (644)	560 (700)
220Y/440Y	410 (513)	-	-	460 (575)	485 (606)	500 (625)	520 (650)
208Y/416Y	400 (500)	-	-	445 (556)	470 (588)	475 (594)	505 (631)
200Y/400Y	382 (478)	-	-	427 (534)	441 (551)	443 (554)	459 (574)
190Y/380Y	360 (450)	-	-	405 (506)	405 (506)	405 (506)	405 (506)

① Voltage L-L, refers to wye (star) connection. ② Rise by resistance method, Mil-Std-705, Method 680.1b / Ambient.

Submittal Data: 480 Volts, 500 kW, 625 kVA, 1800 RPM, 60 Hz, 3 Phase (kVA, Hz, and Voltage apply to per unit (pu) base)

Mil-Std-705B

Method	Description	Value	
301.1b	Insulation Resistance	>1.5 Meg	
302.1a	High Potential Test		
	Main Stator	2000	Volts
	Main Rotor	1500	Volts
	Exciter Stator	1500	Volts
	Exiter Rotor	1500	Volts
	PMG Stator	1500	Volts
401.1a	Stator Resistance, Line to Line		
	High Wye Connection	0.0126	Ohms
	Rotor Resistance	0.398	Ohms
	Exciter Stator	23.0	Ohms
	Exciter Rotor	0.045	Ohms
	PMG Stator Resistance	2.1	Ohms
410.1a	No Load Exciter Field Amps		
	at 480 Volts Line to Line	0.7	A DC
420.1a	Short Circuit Ratio	0.609	
421.1a	Xd Synchronous Reactance	2.592 0.956	pu Ohms
422.1a	X2 Negative Sequence Reactance	0.219 0.081	pu Ohms
423.1a	X0 Zero Sequence Reactance	0.054 0.02	pu Ohms
425.1a	X'd Transient Reactance	0.157 0.058	pu Ohms
426.1a	X"d Subtransient Reactance	0.133 0.049	pu Ohms
----	Xq Quadrature Synchronous Reactance	1.068 0.394	pu Ohms
427.1a	T'd Transient Short Circuit Time Constant	0.114	sec
428.1a	T"d Subtransient Short Circuit Time Constant	0.01	sec
430.1a	T'do Transient Open Circuit Time Constant	1.68	sec
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.017	sec

Mil-Std-705B

Method	Description	Value	
505.3b	Overspeed	2250	RPM
507.1c	Phase Sequence CCW-ODE	ABC	
601.4a	L-L Harmonic Maximum - Total	5.0	%
	(Distortion Factor)		
	L-L Harmonic Maximum - Single	3.0	%
601.1c	Deviation Factor	5.0	%
	TIF (1960 Weightings)	<50	
	Generator Frame	572	
	Type		
	Insulation	Class H	
	Coupling-Single Bearing	Flexible	
	Amortisseur Windings	Full	
	Exciter	Ext. Voltage Regulated, Brushless	
	Voltage Regulator	DVR2400	
	Voltage Regulation	0.25	%
	Cooling Air Volume	1520	CFM
	Heat Rejection Rate	1879.9	BTU/min
	Full Load Current	751.8	A
	Minimum Input Hp Required	714.5	Hp
	Full Load Torque	2084.1	ft*lb
	Efficiency at Rated Load	93.8	%
	Weight	2840	lbs

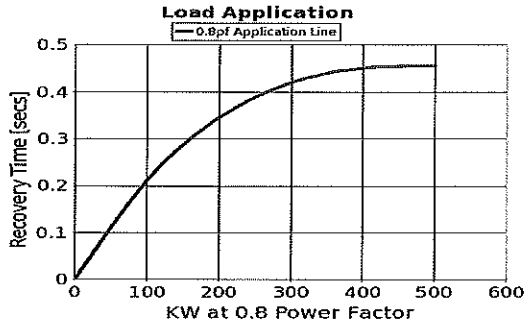
MARATHON ELECTRIC GENERATORS

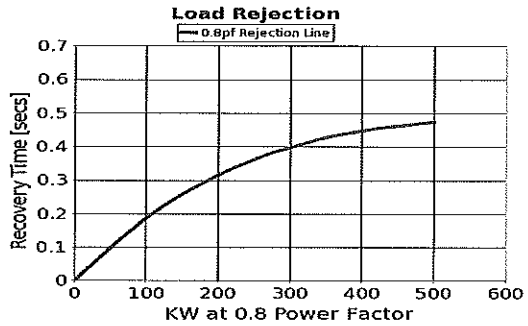
SYNCHRONOUS AC GENERATOR
TYPICAL DYNAMIC CHARACTERISTICS

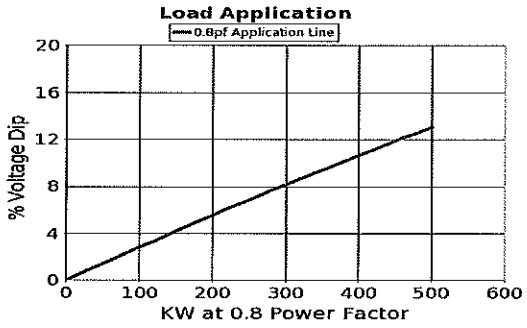
Date: 08/26/2021

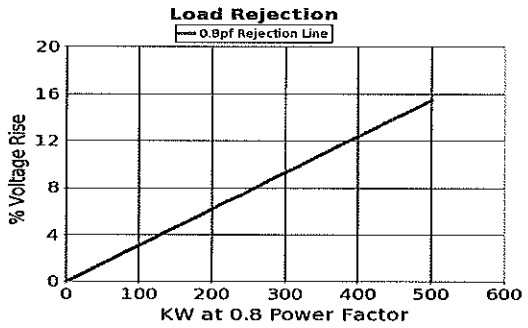
Base Model: 572RSL4027

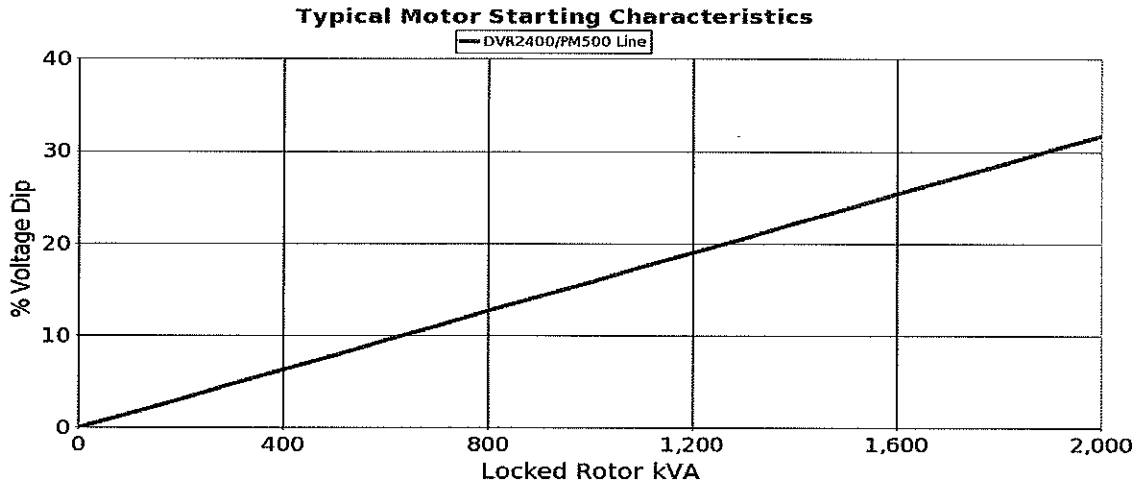
Submittal Data: 480 Volts, 500 kW, 625 kVA, 1800 RPM, 60 Hz, 3 Phase

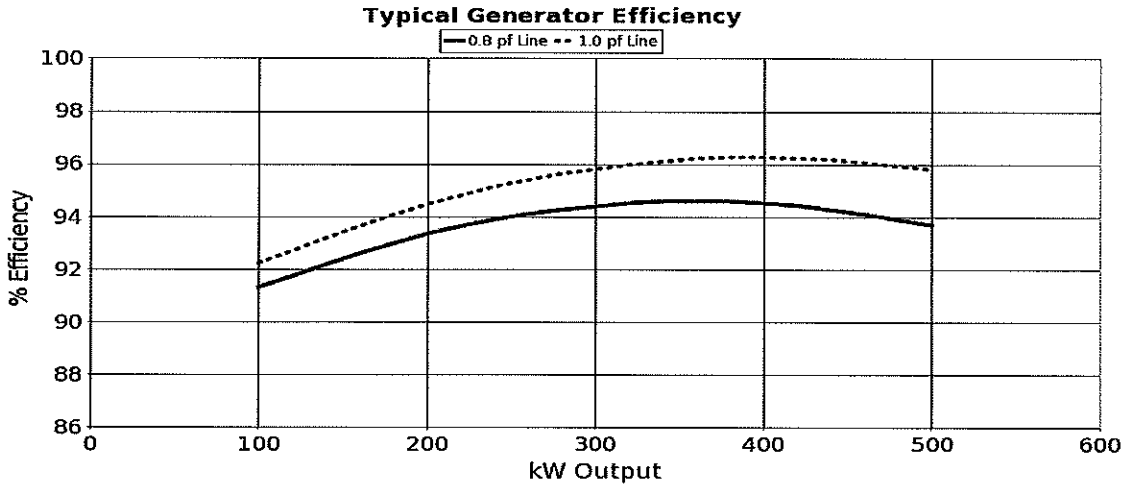








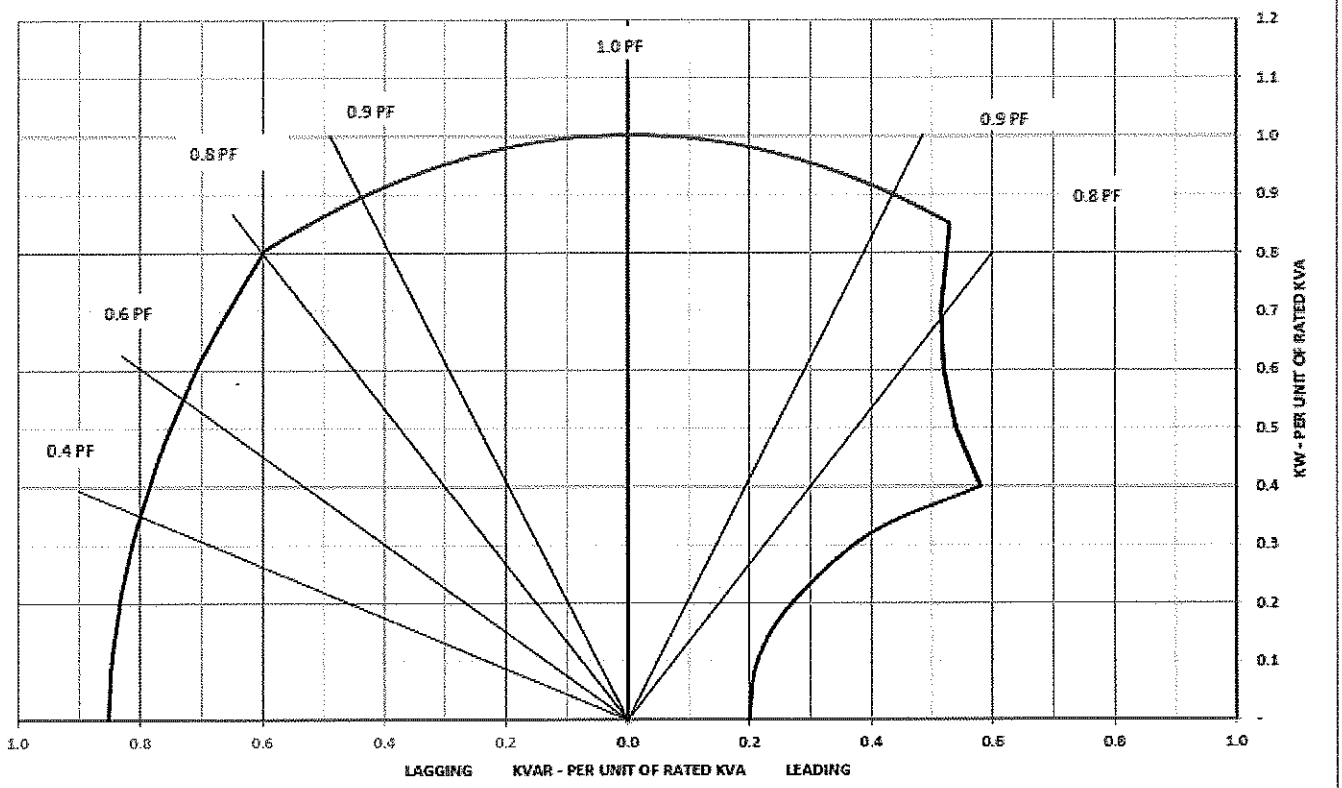




Reactive Capability Curve

marathon™ Generators

Marathon Generator
Typical Reactive Capability Curve



Strip Heater Data Sheet

Marathon Generator

DESCRIPTION

Strip heaters are used when engine generator sets are installed in cold temperature or high humidity climates. The heater maintains the generator windings at a suitable temperature to prevent corrosion due to condensation.

FEATURES

- Rugged, dependable construction
- Minimum maintenance cost
- High-emissivity black oxide finish*

SPECIFICATIONS

- Chrome steel sheath*
- Operational to 648 °C (1,200 °F)*
- Supply voltage: 120 V, 60 Hz. Two heaters may be wired in series for 240 V operation.

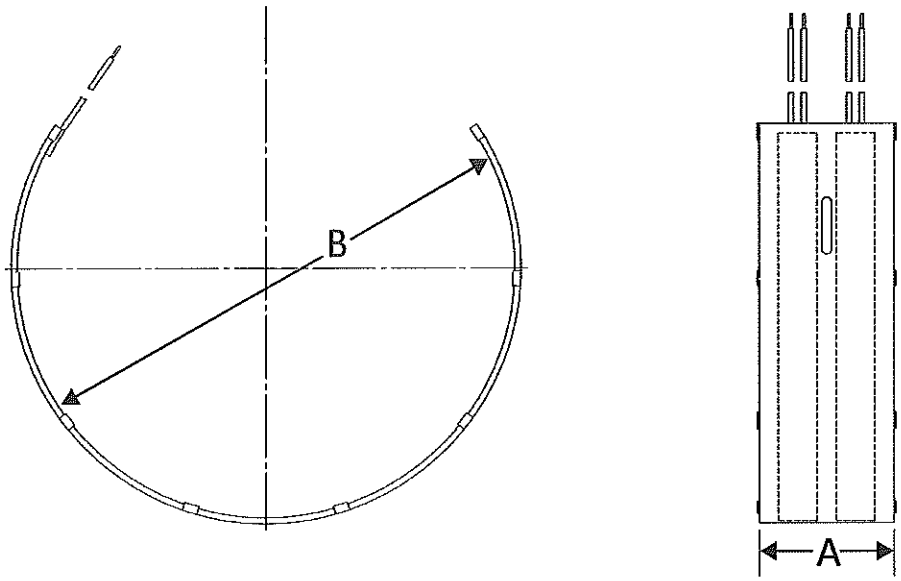
Generator Frame	Watts per Element	Elements per Generator	Dimension A**	Dimension B**	Dimension C**
280	42	2	88.9 mm (3.5 in)	328.4 mm (12.93 in)	N/A
360	126	2	127 mm (5 in)	432 mm (17 in)	N/A
430	250	2	304.8 mm (12 in)	279.4 mm (11 in)	266.7 mm (10.5 in)
570	500	2	454 mm (17.9 in)	428.6 mm (16.9 in)	415.9 mm (16.4 in)
740	250	4	454 mm (17.9 in)	428.6 mm (16.9 in)	415.9 mm (16.4 in)
1,000	625	2	152.4 mm (6 in)	1168.4 mm (46 in)	N/A

* 430-740 generator frame models only
** Refer to Dimensional Diagrams below for dimension reference points
N/A = Not Available

CERTIFICATIONS AND STANDARDS

- UL listed
- CSA certified

A Rolls-Royce solution



~~Figure 1: 280, 360, and 1,000 Frame Dimensional Diagram~~

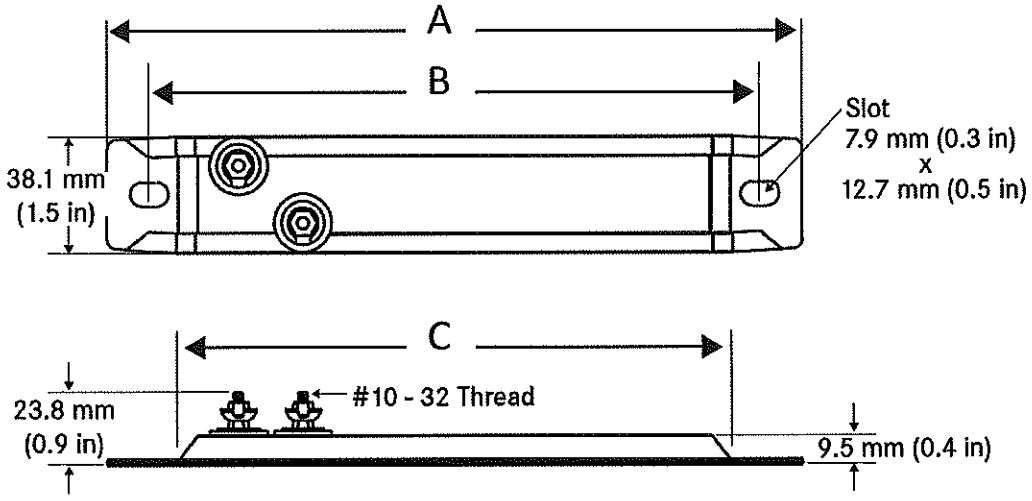


Figure 2: ~~430, 570, and 740~~ Frame Dimensional Diagram

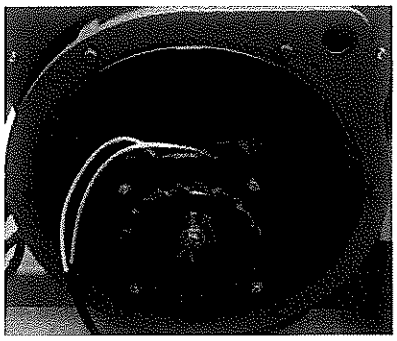
Subject to change. | WT00037949 | 2020-07

Generator System Data Sheet

Permanent Magnet Generator (PMG)

DESCRIPTION

A permanent magnet generator (PMG) is standard on 450 kW and larger units and is available as an optional accessory on most units smaller than 450 kW. The PMG is an improved method of supplying power to the voltage regulator and adds distinct advantages over the alternative shunt type power supply.



FEATURES

Improved transient response

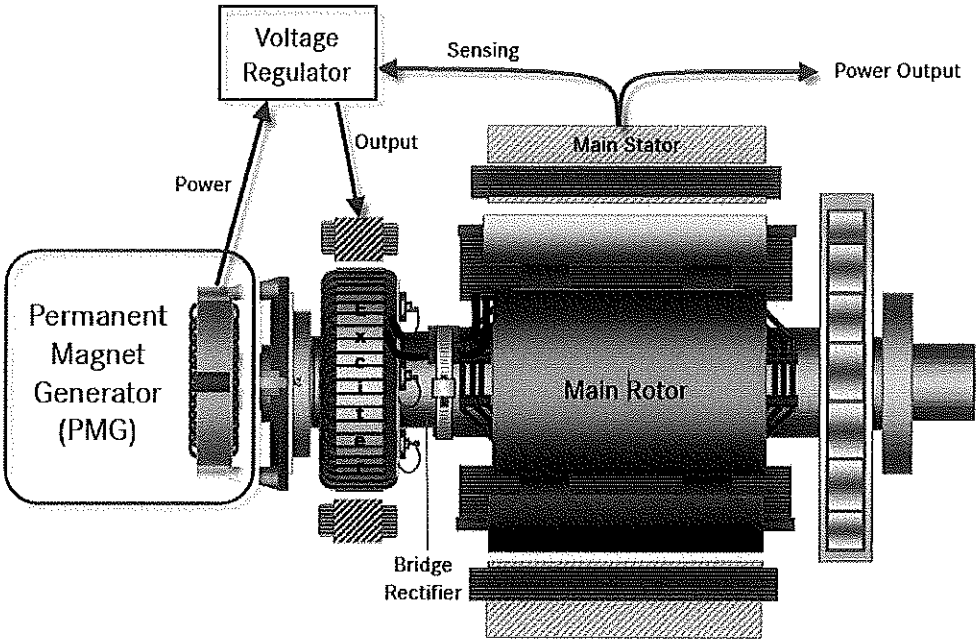
When a generator is subject to a large step load, the generator's terminal voltage experiences a sudden voltage dip. With a shunt style regulator, reduced voltage means the regulator's ability to increase excitation is reduced and voltage recovery will take longer. Power from a PMG is only dependent on the speed of rotation so voltage regulator power, and therefore excitation power, is not compromised during a load step.

300% short circuit capability

The PMG enables the generator to provide up to 300% short circuit current for 10 seconds. This is important when a fault occurs to ensure current continues to flow long enough for downstream breakers to trip and clear the fault. When a fault occurs with a shunt type regulator, the sudden drop in voltage indicates the regulator has no power to increase excitation to keep current flowing. Without current flow, the downstream breakers may not trip.

Resistant to the effects of harmonics

A PMG is also beneficial in applications with harmonic producing loads. When rectifier-type loads are present and cause voltage wave form notching, the disrupted voltage wave form can affect voltage regulator operation on shunt powered regulators. Unlike a shunt regulator, the PMG supplies the regulator with a power source which is isolated from the electrical system.



Generator Equipped with PMG

EXCITATION SYSTEM COMPARISON CHART

	~~AREP~~	Permanent Magnet Generator (PMG)
Motor starting capability	High	High
Short circuit current capability	300% at 60 Hz	300% at 60 Hz
Susceptibility to non-linear loads	Minimum	Minimum
Number of components	Minimum	Maximum
Retrofitability	No	Yes
Generator length	Minimum	Maximum
Stator design	Special	Standard with PM attachment
Voltage buildup	Uses residual magnetism and permanent magnet inserts on some frames	Positive from permanent magnets

Subject to change. | WT00037948 | 2020-07

marathon®
Generators

DVR® 2400
DIGITAL VOLTAGE REGULATOR

NEW FEATURES
- USB 2.0 access through front panel
- Euro style connector for low voltage connections
- Event Logging
- PMG voltage metering
- Polarity configuration for external inputs
- Configurable cut-in and cut-out frequencies
- Retain/reset configuration of remote adjust

FOUR DIGIT HMI DISPLAY
From intial setup to monitoring regulator status, this display provides innovative, fast and easy setup.

REGULATION MODES
Single and Three phase (AVR), Manual Field Current Regulation (FCR), Reactive Power Regulation (VAR) and Power Factor Regulation (PF). All modes compatible with control by external devices.

GENERATOR SOFT START
Controlled increase to rated voltage limits overshoot during voltage build-up in AVR modes.

TRUE RMS VOLTAGE SENSING - SINGLE OR THREE PHASE
Directly sense 100 to 600 Volts at 50/60 Hz. Circuitry senses true RMS voltage for superior regulation.

SINGLE PHASE POWER METERING

FRAME SIZE SPECIFIC PID SELECTION
Simply select the appropriate frame size and your gains are set.

ROBUST GENERATOR PROTECTION FEATURES
9 different Alarm and Shutdown protection features, many are customizable for your application including:
- Field Over & Under Excitation
- Instantaneous Field Over Current
- Generator Over & Under Voltage
- Generator Voltage Imbalance
- Generator Loss of Sensing

REGAL®

DVR®2400 DIGITAL VOLTAGE REGULATOR

SPECIFICATIONS

Voltage Regulation - 0.25% over load range at rated power factor and constant generator frequency.

Output Power - 100 Vdc, 4.0 Adc continuous rating and 190 Vdc, 7.5 Adc forcing capability for one minute.

Exciter Field DC Resistance - 18 to 25Ω Range

Remote Voltage Adjustment - ±30% of nominal via analog input, ±15% via external contacts.

Input Power - 180 to 240 Vac, 250 to 300 Hz PMG power supply

Regulator Sensing - 100 to 600 Vac, 50/60 Hz, 1-phase/3phase

Operating Temperature - From -40°C to +70°C (-40°F to + 158°F)

Storage Temperature - From -40° C to +85°C (-40°F to +185°F)

Ingress Protection - IP52 (front side mounted in conduit box along with swing cover); IP10 (rear side with protective cover)

Shock - 20G in 3 perpendicular planes

Vibration - 2.5G at 5 to 26 Hz; 0.050" double amplitude (27 to 52 Hz); 7G at 53 to 500 Hz

Weight - 3.5 lb. (1361 g)

Humidity Testing - Per MIL-STD-705B, Method 711-D

Salt Fog Testing - Per MIL-STD-810E

EMI Compatibility

Immunity

Meets EN 61000-6-2: 2005 Electromagnetic compatibility (EMC) -Part 6-2: Generic standards- immunity for industrial environments.

Emission

- Meets EN 61000-6-4: 2007 Electromagnetic compatibility (EMC) - Part 6-4: Generic Standards - emmission standard for industrial environments

EMI Compatibility Tests

Immunity

- Electrostatic Discharge (ESD): IEC 61000-4-2
- Radiated RF: IEC 61000-4-3
- Electrical Fast Transient (EFT) /Burst: IEC 61000-4-4
- Conducted RF: IEC 61000-4-6
- Power Frequency and Magnetic Field: IEC 61000-4-8

Emission

- Radiated RF: EN 61000-6-4: 2007, 30 MHz to 1000 MHz

marathon® Generators

Regal Beloit America, Inc.
100 East Randolph Street
Wausau, WI 54402-8003
PH: 715-675-3359

www.marathonelectric.com

APPLICATION CONSIDERATIONS

The proper selection and application of power generation products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and/or its affiliates ("Regal") with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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1.3 ADEC – Functions

Control functions

Following engine functions are controlled:

- Engine start
- Engine stop
- Sequences when "Override" feature is activated (safety system override), engine start with start interlock interrogation deactivated ("emergency start").
- Nominal speed switching between two set values (optional operation as 50 Hz or 60 Hz genset).
- Injection quantity as a function of engine loading and speed.
- Torque regulation

Engine start

The starting sequence is controlled by the software integrated in the engine governor as follows.

Starting sequence activation

The SAM takes a few seconds to boot up. It signals operational availability on the CAN bus by an appropriate PV. Only then may starting be initialized. Under normal operating conditions bothe the SAM and the engine governor are constantly switched on (standby mode).

Start request

The engine is started by a so-called "non-stored start", i.e. the start signal must be applied until the engine has reached idling speed. The actual starting sequence itself is executed automatically.

Furthermore, starting can be requested via the CAN bus. There are correspondingly three CAN receive variables. The start requests are OR operations.

Stop request

Starting is terminated if an external (manual) or internal (automatic) stop request from another part of the software is received. A stop request resets the start interlock time thus allowing immediate restarting in case of internal start termination providing that the engine is at a standstill and no other start request was active.

Coolant temperature monitoring – Start termination

The engine may suffer mechanical damage if started at too low a temperature. The coolant temperature is used to determine the engine temperature.

Excessively low coolant temperature is indicated by a lamp. Indication by the lamp is independent of any alarm signal. Usually the alarms "LO T-Preheat" (for the first limit value) or "SS T-Preheat" (for the second limit value) are tripped when the corresponding limits are violated; even when the engine is at a standstill.

When the second limit value is violated the internal "Stop starting sequence" signal is set providing that Override is not active. This trips a stop and the engine does not start.

The alarm is reset again when the coolant limit value is reached (plus hysteresis).

Starting

The starter is activated via engine governor binary output TOP 4. The engine runs up to starting speed on the starter within a configurable period. If this is not the case starting is terminated and the "SS Starter Speed Not Reached" alarm is output. The starter disengages and a new starting sequence is automatically attempted after a configurable pause.

The starter disengages when the disengagement speed (300 rpm) is reached. The start button may be released once the disengagement speed has been reached. Pressing the start button has no effect from this point on and only takes effect again when the engine has come to a standstill. The "SS Starter Speed Not Reached" alarm is set if the disengagement speed is not reached within a set time and "terminate start" is activated. Starting is also terminated if the starting signal is no longer received.

Engine start with Override ("emergency start")

Various configurable start interlock criteria are bypassed when override is active on starting the engine:

Engine stop

An engine stop is tripped by interrupting the 24V supply at the binary input of the engine governor or by the engine protection system. Fuel is no longer injected as injector activation is disrupted.

Any starting procedure which has been initiated is interrupted.

Override (safety system bypass)

The "Override" feature is used to bypass safety functions tripped by limit value violations or sensor faults and to bypass start interlocks (see above).

Operating states which would normally lead to engine shutdown are ignored when the "Override" function is activated. The following operational data can be configured to trip engine shutdown in case of limit value violation even in Override mode:

- Coolant level
- Coolant temperature
- Coolant pressure
- Charge air coolant level
- Lube oil pressure
- Lube oil temperature

50 Hz/60 Hz switching on bifrequency engines

To increase the genset application scope the network frequency can be adjusted prior to engine start. The nominal speed is set as follows:

- Network frequency 50 Hz: Nominal speed 1500 rpm
- Network frequency 60 Hz: Nominal speed 1800 rpm

Caution!

Switching is only possible when the engine is at a standstill! Switching requires programming of corresponding performance maps and parameters in the governor and appropriate engine hardware.

Monitoring functions

The engine management system fulfils the following monitoring tasks:

- Control of analog instruments;
  - Engine lube oil pressure
  - Engine coolant temperature
- Transmission of all measurands, warnings and alarms to monitoring system via CAN bus.
- Automatic shutdown in case of limit value violations.

Refer to the measuring-point list for order-specific configuration data.

Engine monitoring can basically be divided into two different areas:

- Engine protection system, monitors the engine during operation,
- Safety system, generates automatic engine shutdown in case of limit value violation.

These two functional areas are constantly monitored by the internal "Integral Test System (ITS)" to ensure operational availability.

Oil priming pump option

An optional oil priming pump may be integrated in the system. The pump is activated manually via a binary input on the SAM.

Closed-loop control functions

Closed-loop engine control functions:

- Speed regulation
- Injection control with mapped commencement of injection.
- Two adjustable speed droops.
- Setpoint speed regulation
  - Analog or binary speed demand on CAN bus, CANopen and SDE J1939
  - Analog speed setting 0 V to 10 VDC / 0 V to 5 VDC / 4 mA to 20 mA.
  - Binary speed demand via Up/Down signal
  - Frequency speed setting.
- HP fuel governor.
- Torque control

Speed - injection control

Functions of the closed-loop engine speed control integrated in the engine governor:

- Maintaining the desired engine speed under changing load conditions.
- Adjusting the engine speed when the setting is changed by the operator.

Fuel quantity control during engine start

The quantity of fuel injected during engine start increases along a time ramp from a set initial value to a specified value. This ensures that the engine starts reliably. This fuel quantity control is effective until idling speed has been reached.

Desired speed handling

The desired speed is the command variable for the engine speed control loop.

Providing that speed demand is set by Up/Down signals, the engine runs up to an internally programmed nominal speed when started (for 50 Hz network frequency: 1500 rpm, for 60 Hz network frequency: 1800 rpm). The engine runs up to the set value in case of analog speed demand.

The starting sequence is completed when idling speed has been reached ("open-loop control" mode) and switching over to "closed-loop control" mode is effected.

The following speed setting variants are possible:

- Desired speed setting via an analog input:

  The setpoint speed may be adjusted within a (configurable) range around the preset synchronous speed (depending on the set network frequency) (relative speed control, the voltage/current or frequency controls the speed window only).

  Absolute speed control is also possible (the voltage/current or frequency can cover the entire speed range).

  The internal setpoint speed follows the applied speed setting value along a configurable acceleration/deceleration curve (speed ramp). The setting value last applied is maintained or the engine is set to a default speed should the applied signal fail.

  The response can be configured as desired:
  - Speed setting via CAN bus.
  - Speed setting via an analog speed setting input (0 V to 10 V).
  - Speed setting via an analog speed setting input (4 mA to 20 mA).
  - Frequency input.
- Setpoint processing via binary inputs "Setpoint speed up"/"Setpoint speed down":

  The setpoint speed can be adjusted within a (configurable) range around the preset synchronous speed (depending on the set network frequency). Briefly actuating the appropriate optocoupler input for less than 0.3 s increases or decreases the setpoint speed by 1 rpm.

  The setpoint speed is automatically adjusted at a configurable rate if the input is activated for longer than 0.3 seconds.

Speed droop

Speed droop calculation

Speed droop influences the effective setpoint speed depending on engine power. Maximum, speed-dependent engine power is limited by the MCR curve. The setpoint speed is not influenced by speed droop at 100% power. The effective setpoint speed increases at lower power. This allows power to be balanced when operating a number of engines in a network.

Switchable speed droop

Two different speed droop settings can be selected at the engine governor.

The speed droop is selected by a binary input at the engine governor.

Speed droop is required to balance the load of coupled prime movers. Speed droop can be adjusted to meet plant requirements via the dialog unit.

Quantity limitations

Dynamic quantity limitation

Dynamic quantity limits protect the engine against overloading and optimize exhaust emission values. The engine governor determines the maximum injection quantity based on preset and stored engine performance maps.

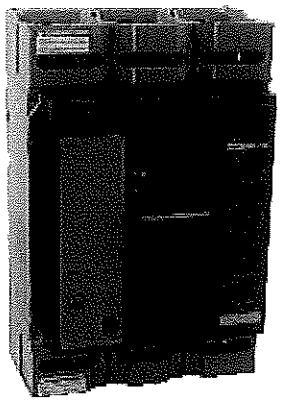
Fuel quantity is limited as a function of speed (DBR).

Fixed quantity limitation

Fixed quantity limitations are used for power limitation and power reduction to protect the engine from sustained overload sustained overload.

Product data sheet
Characteristics

PGL36080U33A
MOLDED CASE CIRCUIT BREAKER 600V 800A



Main

Product or component type	Circuit breaker
Range of product	PowerPact P
Current sensor rating range	800 A
Breaking capacity code	G
Trip unit technology	Electronic standard Micrologic 5.0 LSI
Device short name	A

Complementary

Line Rated Current	800 A
Product certifications	IEC UL listed CSA
System Voltage	600 V AC
Mounting mode	Unit mount
Poles description	3P
Breaking capacity	65 kA at 240 V AC 35 kA at 480 V AC 18 kA at 600 V AC
[Ics] rated service short-circuit breaking capacity	80 %
Electrical connection	Lugs load Lugs line
AWG gauge	AWG 3/0...500 kcmil (aluminium/copper) 3
Height	12.86 in
Depth	8.07 in
Width	8.27 in

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Ordering and shipping details

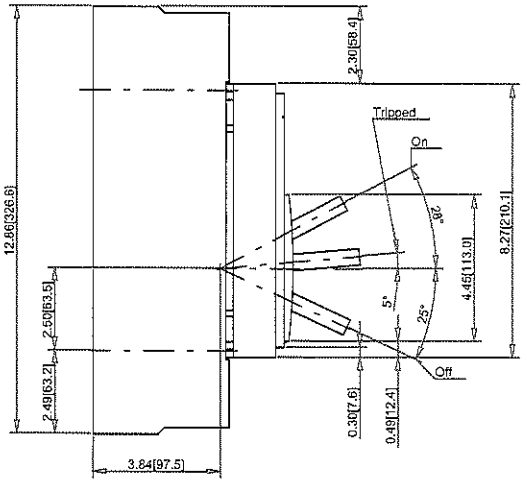
Category	01215 - PG,H,J,K,L,N UNIT MT BREAKERS
Discount Schedule	DE2
GTIN	00785901657941
Nbr. of units in pkg.	1
Package weight(Lbs)	32
Returnability	Y
Country of origin	US

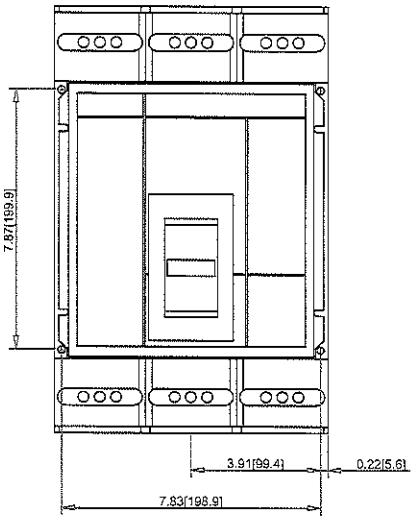
Offer Sustainability

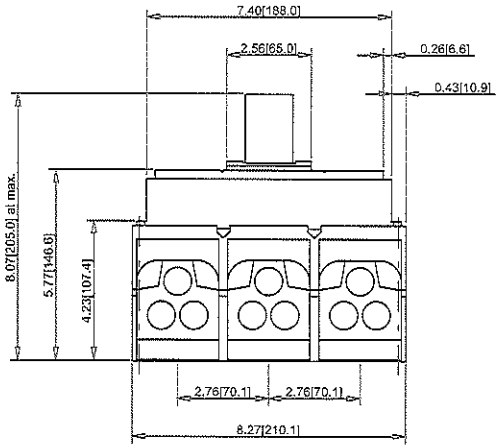
Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1323 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Available

Contractual warranty

Warranty period	18 months







Note:
- Drawings Not To Scale
- Drawings Subject to Change Without Notice
- Dimensions are inches next to [Millimeters]

Part No.:

PGL36080U33A

SQUARE D by Schneider Electric

Schneider Electric United States
North American Division
Boston One Campus
800 Federal Street
Andover, MA 01810, USA
Phone:+1 8773425173
Email: CCC@us.schneider-electric.com

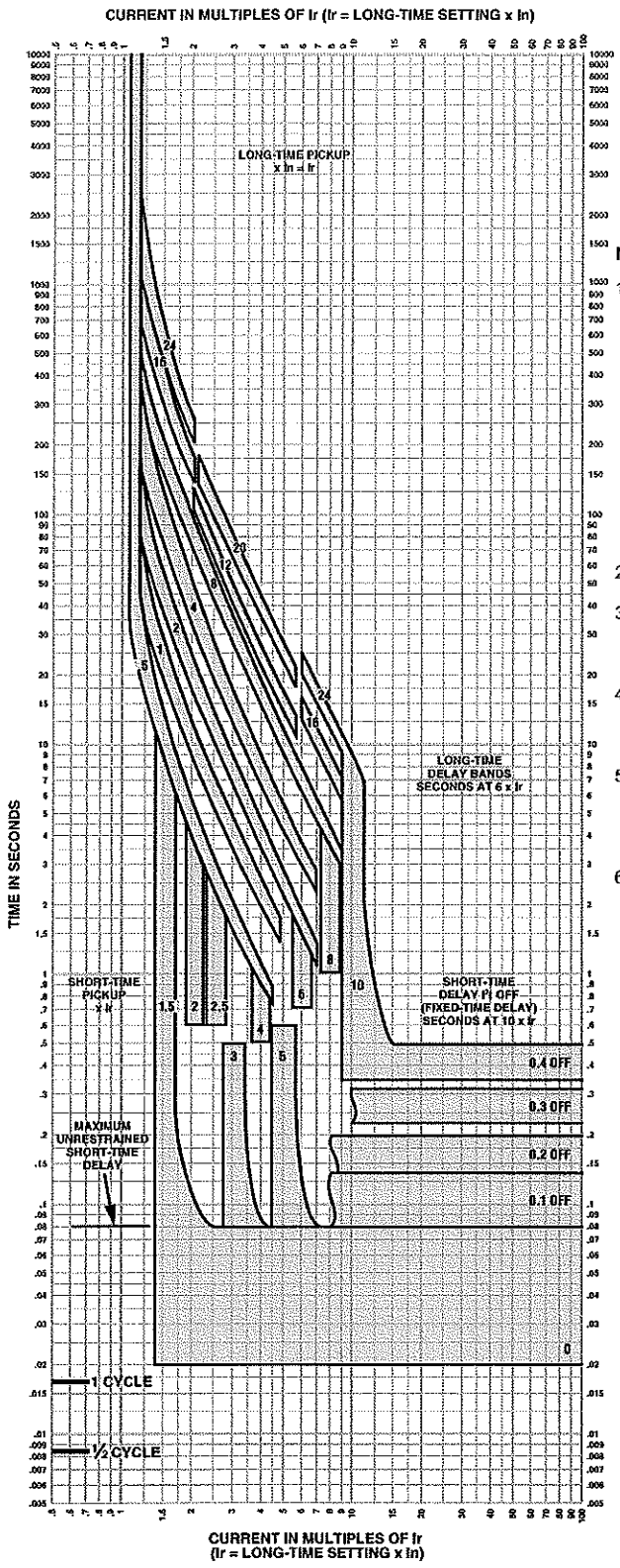
Technical Information:

General Application:	Provides overload and short circuit protection
For Use With:	Panelboards and Switchboards
Approvals:	UL Listed - CSA Certified - IEC Rated
Mounting Type:	Unit Mount
Terminal Type:	Lugs (ON and OFF ends)
Wire Size:	#3/0-500 AWG/kcmil(Al/Cu)
Weight:	32 Pounds
Depth:	8.07 Inches
Height:	12.86 Inches
Width:	8.27 Inches

Specification:

Description:	PowerPact P-frame Electronic Trip Circuit Breaker
Number of Poles:	3-Pole
Sensor Rating:	800A
Voltage Rating:	600VAC
Interrupting Rating:	65kA at 240VAC - 35kA at 480VAC - 18kA at 600VAC
Circuit Breaker Rating:	80% Rated
Electronic Trip Unit:	Micrologic Standard Trip Unit (5.0)
Trip Function:	LSI
Installed Rating Plug:	Type A
Rating Plug Range:	0.4A to 1A

Micrologic 5.0/6.0 P-Frame, R-Frame and NS630b–NS3200 A/P/H Trip Unit Characteristic Trip Curve



Micrologic 5.0/6.0 A/P/H Trip Units Characteristic Trip Curve No. 613-4

Long-Time Pickup and Delay
Short-Time Pickup and I^2t OFF Delay

The time-current curve information is to be used for application and coordination purposes only. Curves apply from -25°C to +70°C (-13°F to +158°F) ambient temperature.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal-imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately twenty minutes is required between overloads to completely reset thermal-imaging.
2. The end of the curve is determined by the interrupting rating of the circuit breaker.
3. With zone-selective interlocking ON, short-time delay utilized, and no restraining signal, the maximum unrestrained short-time delay time band applies regardless of the setting.
4. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.
5. For a withstand circuit breaker, instantaneous can be turned OFF. See trip curve 613-7 on page 178 for instantaneous trip curve. See table on page 182 for instantaneous override values.
6. Overload indicator illuminates at 100%.

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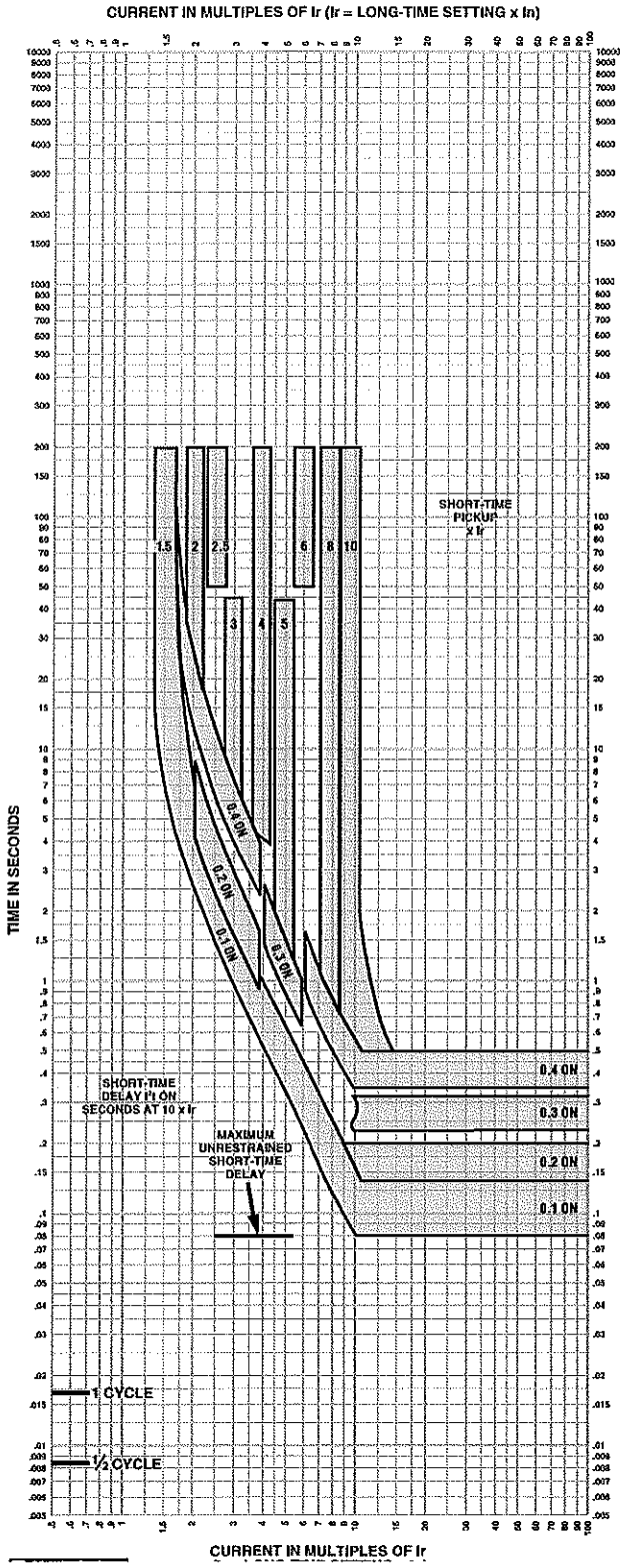
Micrologic 5.0/6.0 P-Frame, R-Frame and NS630b–NS3200 A/P/H Trip Units Characteristic Trip Curve



Micrologic 5.0/6.0 A/P/H Trip Units Characteristic Trip Curve No. 613-5

Short-Time Pickup and I^2t ON Delay

The time-current curve information is to be used for application and coordination purposes only.

Curves apply from -25°C to +70°C (-13°F to +158°F) ambient temperature.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal-imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately twenty minutes is required between overloads to completely reset thermal-imaging.
2. The end of the curve is determined by the interrupting rating of the circuit breaker.
3. With zone-selective interlocking ON, short-time delay utilized, and no restraining signal, the maximum unrestrained short-time delay time band applies regardless of the setting.
4. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of current.
5. For withstand circuit breaker, instantaneous can be turned OFF. See trip curve 613-7 on page 178 for instantaneous trip curve. See table on page 182 for instantaneous override values.
6. See Trip Curve 613-4 on page 176 for long-time pickup and delay trip curve.

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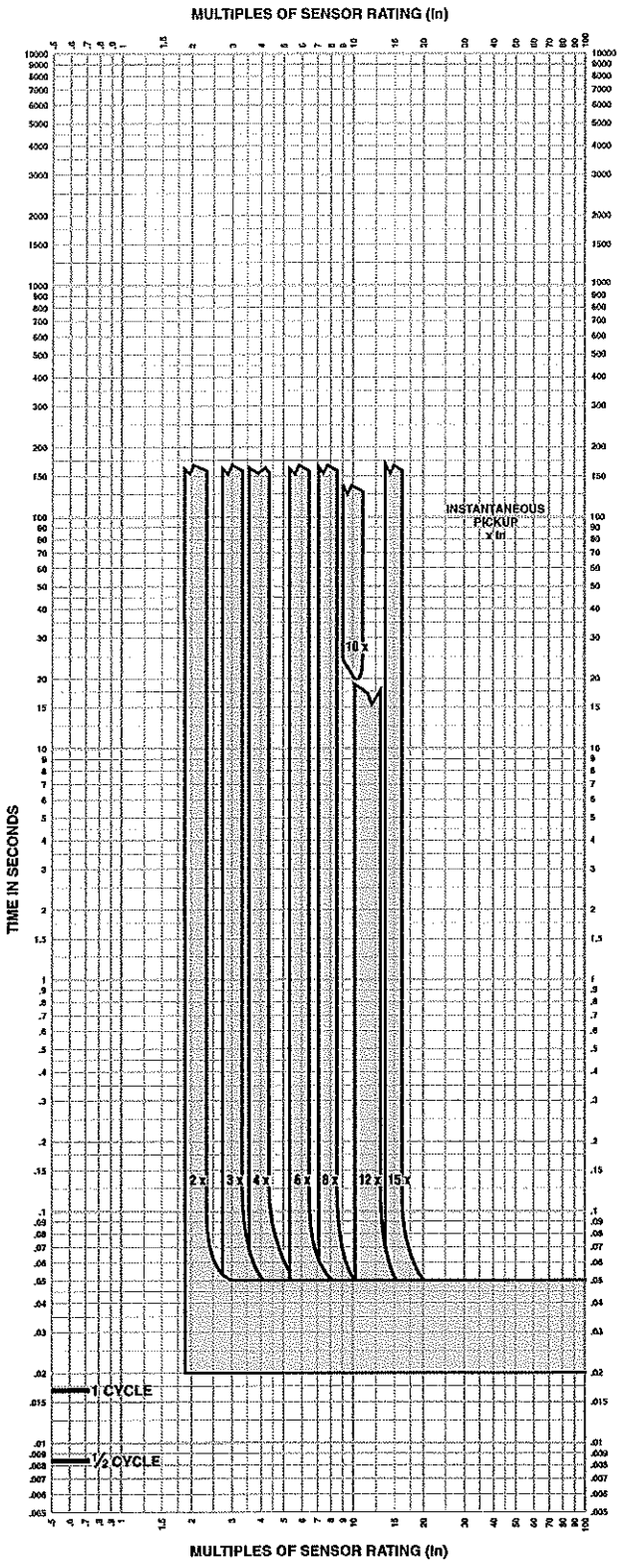
Micrologic 5.0/6.0 P-Frame, R-Frame and NS630b–NS3200 A/P/H Trip Units Characteristic Trip Curve



Micrologic 5.0/6.0 Trip Units Characteristic Trip Curve No. 613-7

Instantaneous Pickup, 2X to 15X and OFF

The time-current curve information is to be used for application and coordination purposes only.

Curves apply from -30°C to +60°C (-22°F to +140°F) ambient temperature.

Notes:

1. The end of the curve is determined by the interrupting rating of the circuit breaker.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of current.
3. The instantaneous region of the trip curve shows maximum total clearing times. Actual clearing times in this region can vary depending on the circuit breaker mechanism design and other factors. The actual clearing time can be considerably faster than indicated. Contact your local sales office for additional information.
4. For a withstand circuit breaker, instantaneous can be turned OFF. See trip curve 613-7 on page 178 for the instantaneous trip curve. See table on page 182 for the instantaneous override values.
5. See trip curve 613-4 on page 176 and trip curve 613-5 on page 177 for long-time pickup, long-time delay, short-time pickup and short-time delay trip curves.

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Circuit Breaker Enclosure Data Sheet - Diesel
60 Hz: 450-500 kW Standby / 400-450 kW Prime
50 Hz: 500-550 kVA Standby / 450-500 kVA Prime

DESCRIPTION

This circuit breaker enclosure data sheet is used in conjunction with dimensional drawings to assist with submittal documentation, specification requirements, and installation. This document summarizes the enclosure dimensions and mounting positions for the 60 Hz - ***mtu*** 10V1600 DS450 and ***mtu*** 10V1600 DS500, and 50 Hz - ***mtu*** 10V1600 DS500, ***mtu*** 10V1600 DS550 circuit breakers, including single (small and large), dual, and triple enclosures. The dimensional drawings will govern and should be referenced for installation.

SMALL SINGLE ENCLOSURE

- Small enclosure supplied with all 570 frame alternator applications.
- Right side breakers shown. Left side breakers optional.
- Reference Figure 2 for breaker mounting positions.

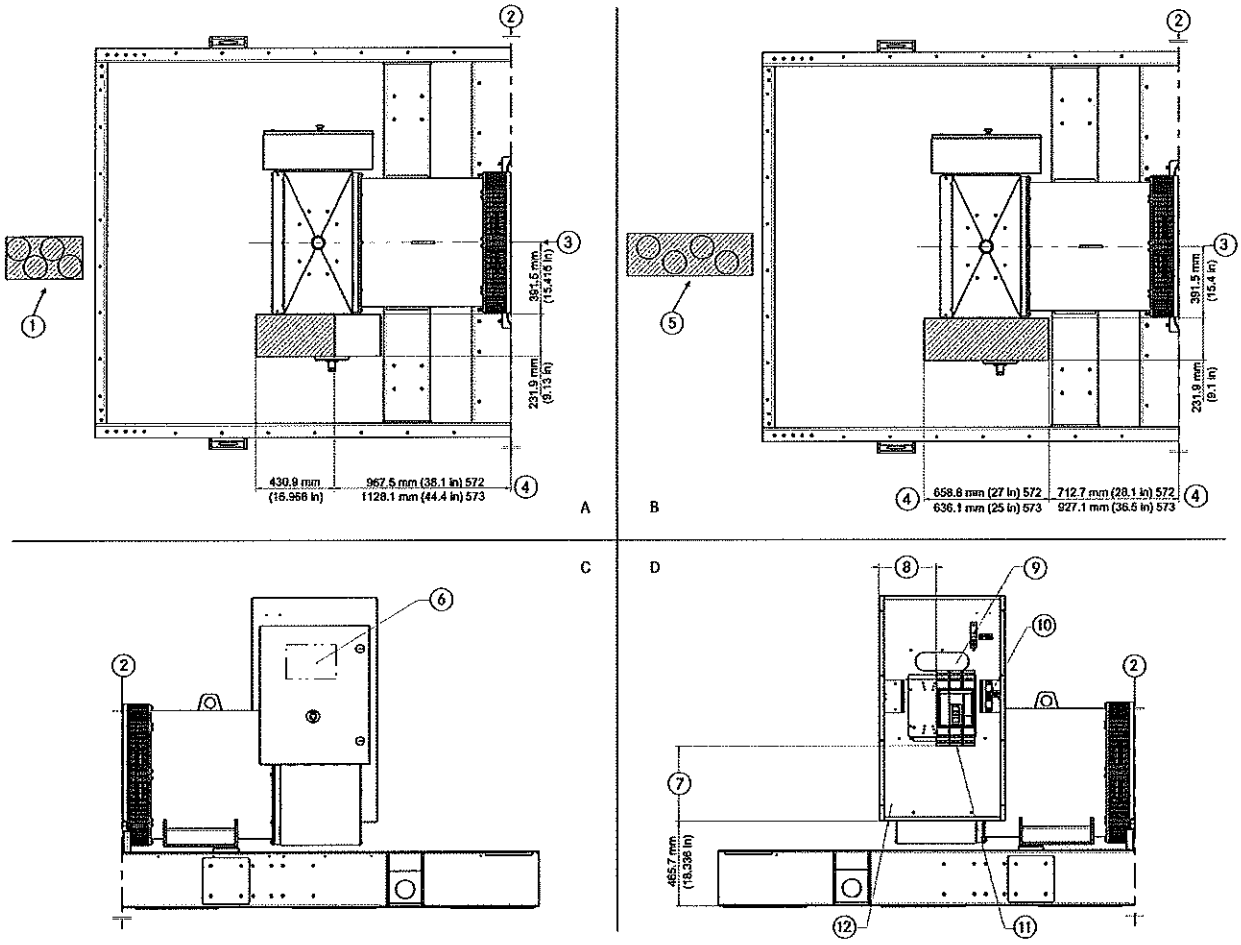


Figure 1: Small Single Enclosure

A. Top view, top entry conduit area
B. Top view, bottom entry conduit area
C. Left view, breaker enclosure detail
D. Right view, breaker enclosure detail (enclosure cover not shown)

1. Four conduit maximum
2. Rear face of flywheel housing
3. Generator centerline
4. Dimensions per generator frame
5. Four conduit displayed
6. Optional control panel location
7. Dimension A
8. Dimension B
9. Equipment ground terminal (torque to 275 in/lbs)
10. Neutral ASM (torque to 275 in/lbs)
11. Customer connect end (recommended torque on label)
12. Bottom entry conduit area

A Rolls-Royce solution

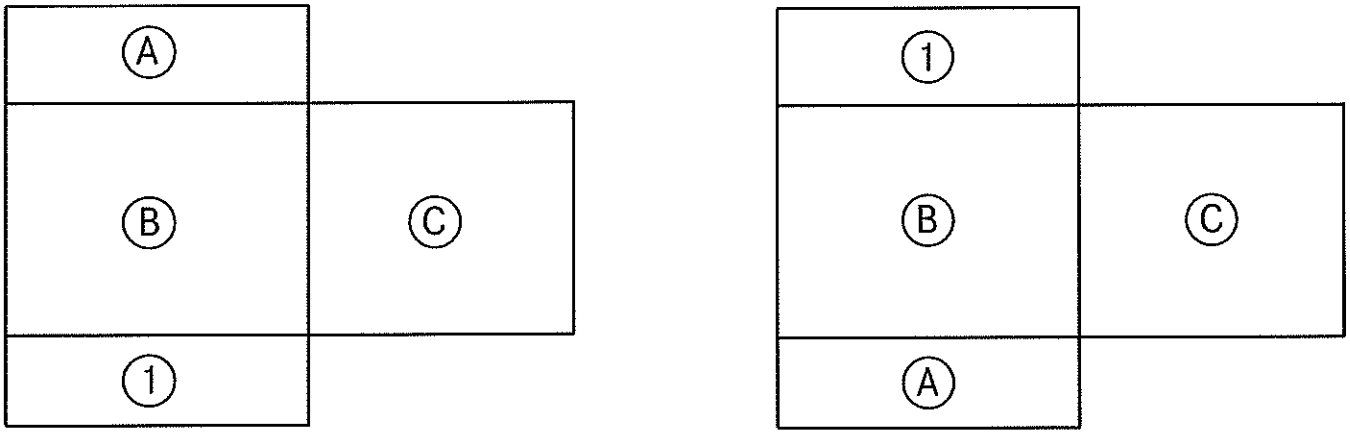
Circuit Breaker Enclosure Data Sheet - Diesel
60 Hz: 450-500 kW Standby / 400-450 kW Prime
50 Hz: 500-550 kVA Standby / 450-500 kVA Prime

Available Circuit Breakers		Enclosure Data				
Breaker Frame	Amperage	Output Wire Range 90 °C Cu (wires per lug)	Wire Bending Space[1] Dimension A mm (in)	Wire Gutter Space[1,2] Dimension B mm (in)	Conduit Quantity	Conduit Size[3] in
H-Frame	20-150	(1) 8-3/0	534.8 (21.1)	364.2 (14.3)	1	2
J-Frame	175	(1) 4-4/0	520.6 (20.5)	364.2 (14.3)	1	2.5
J-Frame	200-250	(1) 3/0-350	520.6 (20.5)	364.2 (14.3)	1	3
L-Frame 100%	300-400	(2) 2/0-500	446.1 (17.6)	346.2 (13.6)	2	3.5
L-Frame 80%	300-600	(2) 2/0-500	446.1 (17.6)	346.2 (13.6)	2	3.5
M/P-Frame	250-800	(3) 3/0-500	409.5 (16.1)	311.3 (12.3)	3	3.5
P-Frame	1,000-1,200	(4) 3/0-500	409.5 (16.1)	311.3 (12.3)	4	3.5

[1] Meets or exceeds NFPA 70, NEC 312.6(A), and NEC 312.6(B)
[2] Top entry only available for single breaker applications
[3] Based on flexible metal conduit at 40% fill using THHN wire according to NEC table 4 and 5

NOTE: Equipment grounding terminal wire range: 6 AWG - 350 kcmil.

Table 1: Small Single Enclosure Data



Top View - Right Side Breaker

Top View - Left Side Breaker

Figure 2: Small Single Enclosure Breaker Mounting Positions

A. Controls
B. Outlet box
C. Alternator
1. Breaker

Starting System Data Sheet
Commercial Battery

Extra ruggedness and resistance to vibration, heat, chemicals, and physical abuse are built into every commercial battery provided with an ***mtu*** generator set. The battery design features the latest in power storage technology for lead-acid batteries, as well as incorporates proven designs developed with the most experience in the business.

PRODUCT FEATURES

- **Case Design:** Tough, high-impact reinforced polypropylene case is heat sealed under extreme pressure to withstand heavy commercial service usage. This helps to prevent electrolyte leakage, improves reliability, and reduces breakage.
- **Internal Design:** Full-frame power path grids avoid sharp wires protruding through separators and directs the power straight to the lug for low resistance and higher cranking amps.
- **Terminals:** Standard terminals are solidly built preventing porosity, corrosion, black post, and harmful acid leaks.
- **Power Density:** Extra heavy-duty batteries deliver more cranking amps per pound.
- **Maintenance:** The battery uses pure de-mineralized electrolytes for reduced water loss, reduced gassing, longer battery life, and low maintenance.
- **Reliability:** Narrow ribs reduce separator corrosion to protect against shorts while deep-pocket envelopes dramatically improve reliability and extend service life.
- **Quality:** Over 250 quality control checks, combined with computer-aided design technology, provide a tough, durable battery in each commercial battery provided with an ***mtu*** generator set.

							Overall Dimension			
	BCI Group Size	Terminal Type	*mtu* Part Number	Volt	Cranking Performance CCA (Cold Cranking Amps) -18° C / 0° F	Reserve Capacity	Length mm (in)	Width mm (in)	Height mm (in)	Weight (Wet) kg (lbs)
	24	Post	SUA102538	12	650	115	273 (10.75)	171 (6.75)	229 (9)	18.1 (40)
	31	Post	SUA120299	12	950	175	330 (13)	171 (6.75)	241 (9.5)	25.7 (56.5)
QTY: 2	4D	Post	SUA102493	12	1,050	290	527 (20.75)	216 (8.5)	258 (10.125)	45.2 (99.5)
	8D	Post	SUA102492	12	1,400	430	527 (20.75)	279 (11)	254 (10)	59.3 (130.5)

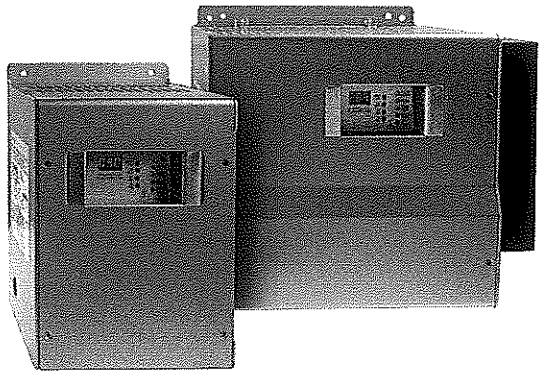
Subject to change. | WT000379987 | 2021-03

A Rolls-Royce solution

Battery Charger Data Sheet

NRG Intelligent Engine Start Battery Charger

The smart choice for mission-critical engine starting:
- Fast, accurate, mission-critical charging gives best starting reliability
- 4-rate, temperature-compensated output offers longest battery life
- Replace nearly any charger without planning ahead
- Industry-first battery-fault alarm helps dispatch service early
- Lasting reliability — field MTBF > 1 million hours with industry-best warranty
- IBC seismic certification meets latest building codes, no installation delays
- Optional OSHPD pre-approval



BENEFITS AND FEATURES

Failure to start due to battery problems is the leading cause of inoperable generator sets.

The NRG battery charger maximizes starting system reliability while slashing generator set servicing costs:
- One NRG replaces almost any charger without extra site visits. Installers can select or change at any time 120, 208, or 240 volts AC input, 12 or 24-volt battery and output settings optimized for nearly any lead-acid or nickel cadmium battery.
- Easy-to-understand user interface provides state-of-the-art system status including digital metering, NFPA 110 alarms, and a battery fault alarm that can send service personnel to the site before failure to start.
- Batteries charged by NRG give higher performance and last longer. In uncontrolled environments, precision charging increases battery life and watering intervals 400% or more.
- NRG meets all relevant industry standards – including UL, NFPA 110, and CE. Seismic Certification per International Building Code (IBC) 2000, 2003, 2006. All units are C-UL listed. 50/60 Hz units add CE marking to UL agency marks.

EnerGenius reliability technology built into every charger includes:
- All-electronic operation with generous component de-rating
- Disconnected/reversed/incorrect voltage battery alarm and protection
- Protection of connected equipment against load dump transients
- Widest temperature rating and overtemperature protection
- Superior lightning and voltage transient protection
- Demonstrated field MTBF > 1 million hours

SPECIFICATIONS

AC Input

- Voltage: 110-120/208-240 VAC, ±10%, single phase, field selectable
- Input current:
  - 10A charger: 6.6/3.3 amps maximum
  - 20A charger: 12.6/6.3 amps maximum
- Frequency: 60 Hz ±5% standard; 50/60 Hz ±5% optional
- Input protection: 1-pole fuse, soft-start, transient suppression

Charger Output

- Nominal voltage rating: 12/24 volt, field selectable
- Battery settings: six discrete battery voltage programs
  - Low or high S.G. flooded
  - Low or high S.G. VRLA
  - Nickel cadmium 9, 10, 18, 19 or 20 cells
- Regulation: ±0.5% line and load regulation
- Current: 10 or 20 amps nominal
- Electronic current limit: 105% rated output typical—no crank disconnect required
- Charge characteristic: constant voltage, current limited, 4-rate automatic equalization
- Temperature compensation: Enable or disable anytime, remote sensor optional
- Output protection: Current limit, 1-pole fuse, transient suppression

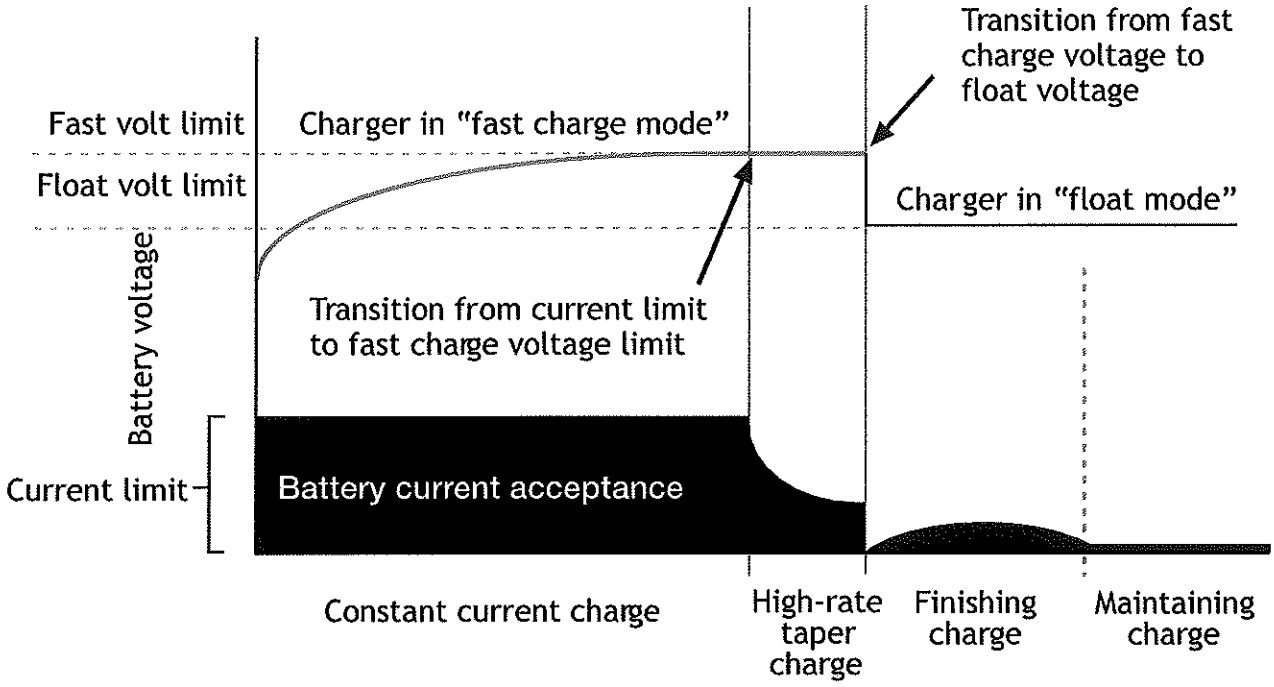


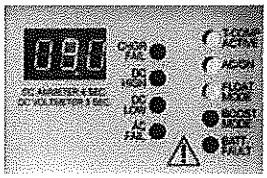
Figure 1: Standard Four (4) Rate Charging

SPECIFICATIONS, continued:

User Interface, Indication and Alarms

- Digital meter: automatic meter alternately displays output volts, amps[1]
- Accuracy: ±2% volts, ±5% amp
- Alarms: LED and Form C contact(s) per table:

	Alarm Code "C" (meets requirements of NFPA 110)
AC good	LED
Float mode	LED
Fast charge	LED
Temp comp active	LED
AC fail	LED and Form C contact[2]
Low battery volts	LED and Form C contact[2]
High battery volts	LED and Form C contact[2]
Charger fail	LED and Form C contact[2]
Battery Fault	LED and Form C contact[2]



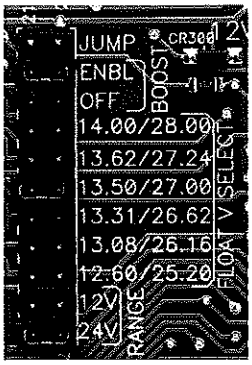
Front panel status display

[1]Three-position jumper allows user to select from three display settings: alternating volts / amps (normal), constant volts, or constant amps
[2]Contacts rated 2A at 30 VDC resistive

Table 1: Alarm Code "C", LED and Form C contacts

Controls

- AC input voltage select: field-selectable switch
- 12/24-volt output select: field-selectable two-position jumper
- Battery program select: field-selectable six-position jumper
- Meter display select: field-selectable three-position jumper
- Fast charger enable/disable: field-selectable two-position jumper
- Temp compensation enable: standard, can be disabled or re-enabled in the field
- Remote temp comp enable: connect optional remote sensor to temp comp port



Simple field adjustments

Environmental

- Operating temperature: -20 °C to 60 °C, meets full specification to 45 °C
- Over temperature protection: gradual current reduction to maintain safe power device temperature
- Humidity: 5% to 95%, non-condensing
- Vibration (10A unit): UL 991 Class B (2G sinusoidal)
- Transient immunity: ANSI/IEEE C62.41, Cat. B, EN50082-2 heavy industrial, EN 61000-6-2
- Seismic certification:
  - IBC 2000, 2003, 2006, 2009
  - Maximum S_{ds} of 2.28 g
  - Optional OSHPD pre-approval

NRG Intelligent Engine Start Battery Charger Data Sheet

Agency Standards

- Safety
  - C-UL Listed to UL 1236 (required for UL 2200 gensets),
  - UL Category BBGQ, CSA standard 22.2 no. 107.2-M89
  - CE: 50/60 Hz units DOC to EN 60335
- Agency marking
  - 60 Hz: c-UL-us listed
  - 50/60 Hz: c-UL-us listed plus CE marked
- EMC
  - Emissions: FCC Part 15, Class B; EN 50081-2
  - Immunity: EN 61000-6-2
- NFPA standards
  - NFPA 70
  - NFPA 110. (NFPA 110 requires alarms "C")
- Optional agency compliance
  - OSHPD pre-approval

Construction

- Material: non-corroding aluminum enclosure
- Dimensions: see Diagrams and Dimensions section of this document
- Printed circuit card: Surface mount technology, conformal coated
- Cooling: natural convection
- Protection degree
  - Listed housing: NEMA-1 (IP20)
  - Optional IP21 drip shield
  - Optional NEMA 3R enclosure
- Damage prevention: fully recessed display and controls
- Electrical connections: compression terminal blocks

Warranty

Standard warranty: standard warranty terms apply

Optional Features

- Input: input frequency, 50/60 Hz
- Remote temp comp sensor: recommended where battery and charger are in different locations
- Drip shield meets s/b (IP21): protects from dripping water
- NEMA 3R housing: enables outdoor installation (remote temp sensor recommended)

DIAGRAMS AND DIMENSIONS

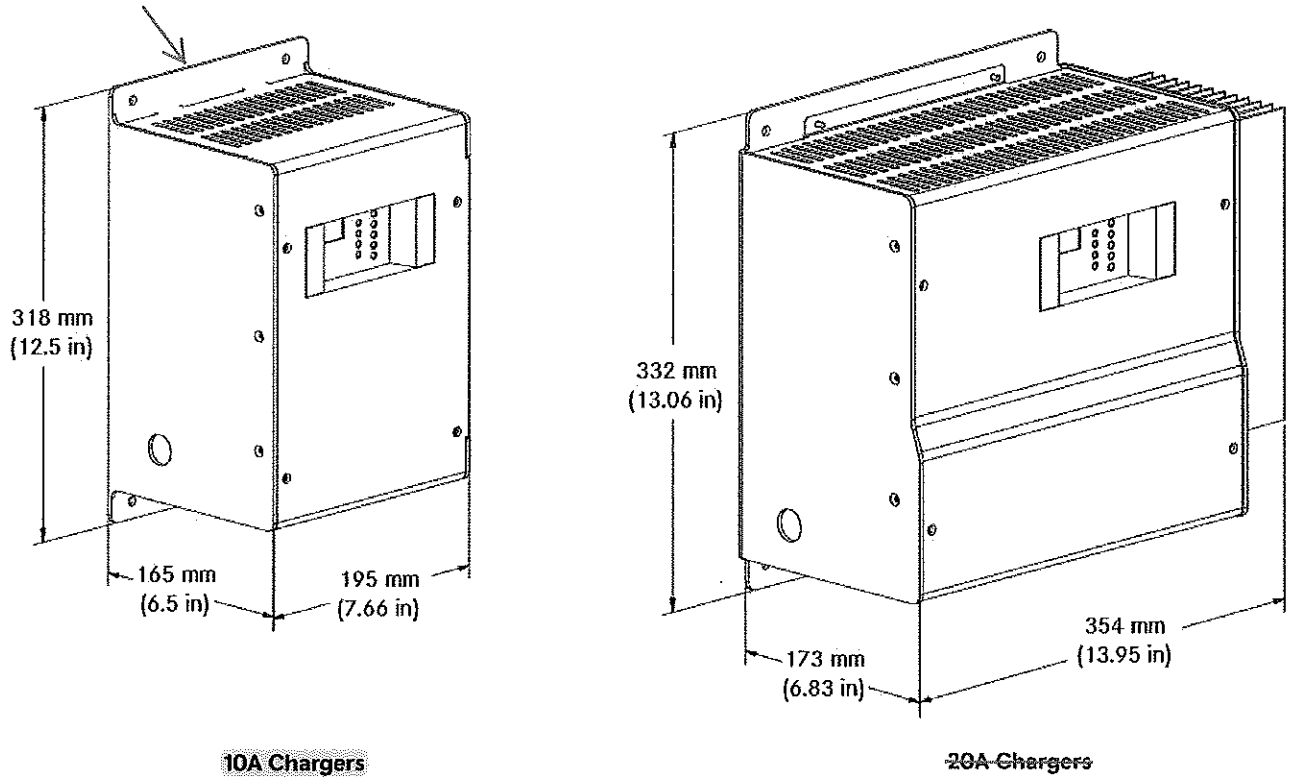


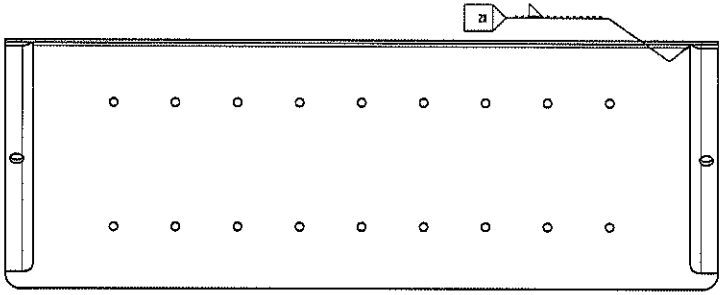
Figure 2: Charger Dimensions

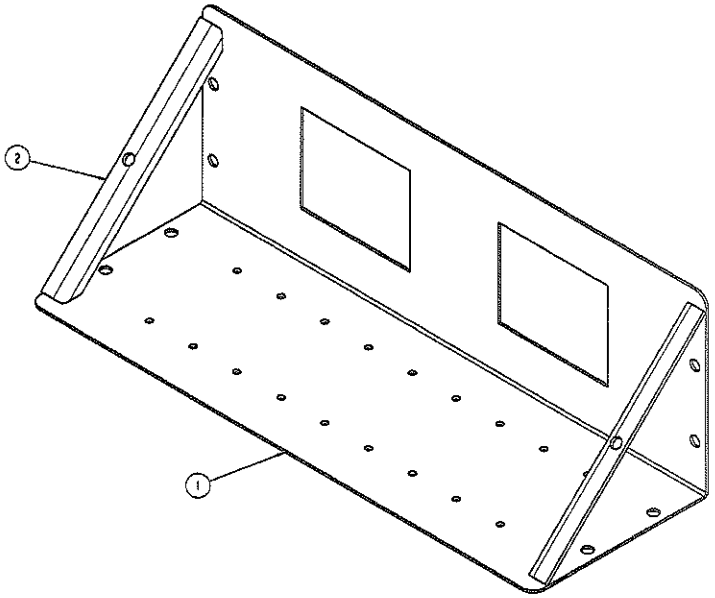
NRG Ordering Information						
Output Volts	Output Amps	Frequency	Model	Available Configurations	NFPA 110 Alarms	Weight kg (lbs)
12/24	10	60 Hz	SUA83187	Enclosed	Yes	10.4 (23)
12/24	20	60 Hz	SUA90170	Enclosed	Yes	19.1 (42)
12/24	10	50/60 Hz	SUA89983	Enclosed	Yes	10.4 (23)
12/24	20	50/60 Hz	SUA94705	Enclosed	Yes	19.1 (42)
24	20	60 Hz	SUA87576	Enclosed	Yes	19.1 (42)
24	20	50/60 Hz	SUA89971	Enclosed	Yes	19.1 (42)

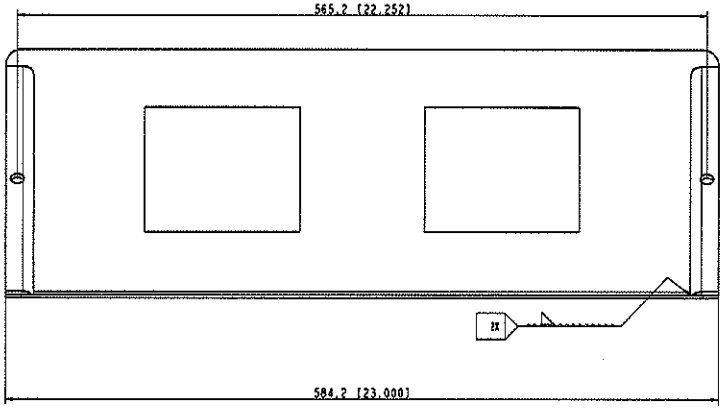
All models offer field-selectable input 120/208-240 volts.

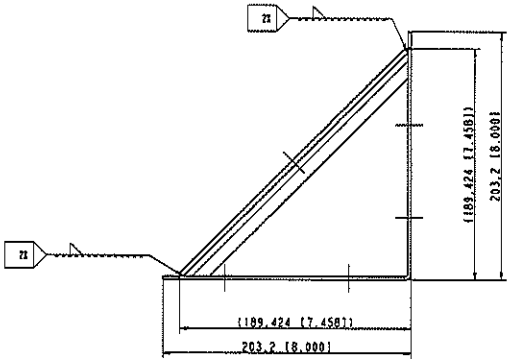
ISO 9000 · c UL US LISTED · CE · SEISMIC IBC 2006 CERTIFIED · EMC IEC 61000-6-2 IMMUNITY · oshpd PRE-APPROVED

Subject to change. 2021-03









Beschichtung nach MTV5011;Farbton RAL9005 tiefschwarz
Coating as per MTV5011;Colour RAL9005 deep black

Es gilt zusaetzlich die 3D-Geometrie
The 3D geometry is also applicable

MTN5168

Ra 100

NOTES:
1) ALTERNATE MATERIALS:
lfd.Nr./Ser.No.1: [.105; 12 GA.] STEEL
lfd.Nr./Ser.No.2: [.165; 8 GA.] STEEL
ASTM 1011 CS TYPE B OR 1008 CS TYPE B
2) FINISH: PRIMED WITH GLOSS BLACK TOPCOAT
3) DIMENSIONS: MM [IN]

Schweissverfahren Welding method	WIG/MAG
Bewertungsgruppe nach ISO 5817 Evaluation group as per ISO 5817	C
Zusatzwerkstoff nach MMN 402 Filler material as per MMN 402	W3Si1/G3Si1
Nahtdicke bei Kehlnachten Seam thickness for fillet welds	a = 2 mm

MMN402			19		ECN: 60033 REVISED TO MTAN'S STANDARDS		25.04.2018	rudolf	MMN
MTN5168			18		ECN 60285: PAINTED BLACK		08.02.2018	Stiassny	MTN
MTV5011			17	6	ECN 60018		24.08.2018	Seilbert	Seilbert
ISO5817			16		removed cutout from battery rack	61506	22.04.2018	Seilbert	Seilbert
Aufgeführte Normen Relevant Standards	Passwort [1]	Nummer der Revision	15		60233	60833	17.02.2018	Seilbert	MTN
			Datum, Name und Abt.Kz.	Aenderung	Aenderung/Revision	Aenderungs-Nr. Revision Refere No.	Datum Date	Name	Gepr. Check.

Page 46

2	ANGLE BRACE	SUA40511.02				S235JR	2 0.277
1	BRACKET MAIN	SUA40511.01				S235JR	1 4.098
Pos. Stück/Qty.	Benennung/Title	Material-Nr./Material No. Halbzeug, Modell usw. Semi-finished product, Pattern	Norm Standard	Abmessung/Dimension(en) Behandlungszustand Treatment condition	Werkstoff/Material Oberflächenschutz Surface protection	SICH. Sach.	Reiter Pos. Lo.

Oberflächenangaben nach MTN5033
Surface Specification per MTN5033
Allgemeine Toleranzen nach MMN 332
Tolerances nach MMN 332
Projektion: Projection per MMN 332

Bezeichnung / Benennung/Title: GESTELL BATT. MONT. 23"L F. 40+80 RACK BATTERY UNIT MT D 23" OAL HOLES 40 +

Maßstab / Scale: 1:2
Gewicht/Mass: 4.627 kg
Format/Size: A1

Prüf. / Date: 13.02.2018 Seilbert
Gepr. / Date: 13.02.2018 STEFAN
Gepr. / Date: 13.02.2018 POIT
Verf. / Drawn: CHA Walther

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onsite energy

Zeichnungs-Nr./Drawing No.: SUA40511
Blatt/Sheet: 1v.1

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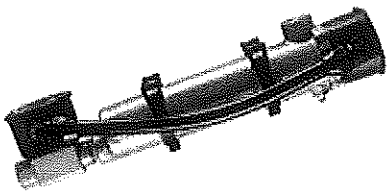
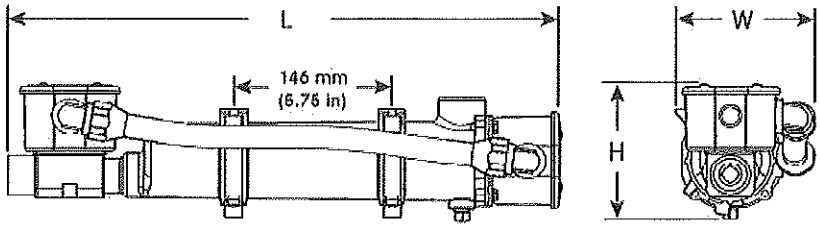
Water Heater Data Sheet

CB, CL, and WL Series

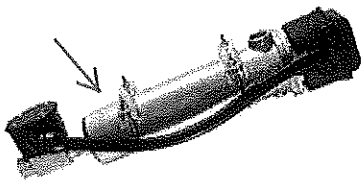
The CB, CL, and WL tank-style engine heaters are designed to preheat diesel and gas engines in generator set applications. With easy start-up regardless of ambient temperature, they feature a built-in thermostat and heat engines from 6L to 25L displacement. Thermosiphon circulation of the coolant delivers heat throughout the entire engine for optimum performance.



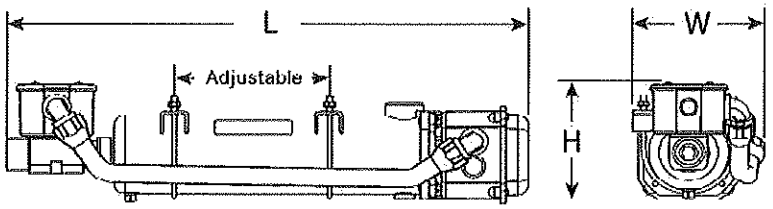
~~CB Model with Thermostat~~



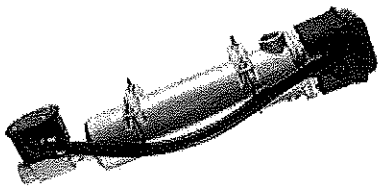
~~CB Model~~



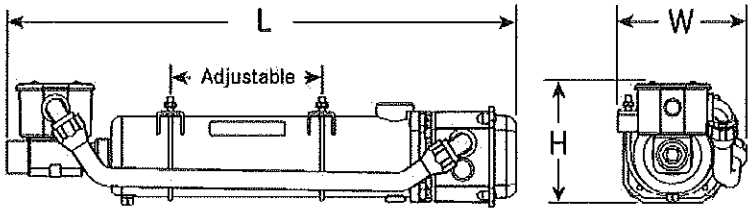
CL Model with Thermostat



CL Model



~~WL Model with Thermostat~~



~~WL Model~~

CERTIFICATIONS AND STANDARDS

— CB and CL Models: c-UL-us Listed, CSA Certified, and CE Compliant
— WL Model: CE Compliant

SPECIFICATIONS

	~~CB Model~~	CL Model	~~WL Model~~
Height:	132 mm (5.2 in)	147 mm (5.8 in)	147 mm (5.8 in)
Length:	510 mm (20.1 in)	597 mm (23.5 in)	597 mm (23.5 in)
Width:	129 mm (5.1 in)	158 mm (6.2 in)	158 mm (6.2 in)
Weight:	3 kg (6.9 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)

A Rolls-Royce solution

SPECIFICATIONS, continued

- Heating Fluid: Engine coolant (50% glycol/50% water)
- Power: 1.5, 2, 2.5, 3, 4, and 5 kW
- Rated Voltage: 120V - 575V
- Phase: 1 and 3
- Enclosure: IP44
- Fluid Capacity:
  - CL and WL Models: 2 L (0.5 gal)
  - CB Models: 1.2 L (0.3 gal)
- Max Pressure: 8.61 bar (125 psi)
- Inlet / Outlet: 1" NPT Male / 1" NPT Female
- Thermostat Range:
  - On: 38 °C (100 °F)
  - Off: 49 °C (120 °F)

Model Number	*mtu* Part Number	Watts	Volts	Phase	Hz	Amps
CB115410-200	SUA98952	1,500	480	1	60	3.1
CB120210-200	SUA98996	2,000	240	1	60	8.3
CB120410-200	SUA98953	2,000	480	1	60	4.2
CB120810-200	SUA98404	2,000	208	1	60	9.6
CB125210-200	SUA96723	2,500	240	1	60	10.4
CB125410-200	SUA90334	2,500	480	1	60	5.2
CB125810-200	SUA96727	2,500	208	1	60	12
CL130410-200	SUA97791	3,000	480	1	60	6.3
CL140210-200	SUA99109	4,000	240	1	60	16.7
CL140410-200	SUA52741	4,000	480	1	60	8.3
CL140810-200	SUA99110	4,000	208	1	60	19.2
CL150210-200	SUA98913	5,000	240	1	60	20.8
CL150212-200	SUA82416	5000	240	1	60	20.8
CL150412-200	SUA83334	5000	480	1	60	10.4
CL150810-200	SUA96725	5,000	208	1	60	24
WL325410-200	SUA96568	2,500	480	3	60	3
WL325810-200	SUA97254	2,500	208	3	60	6.9
WL340410-200	SUA96787	4,000	480	3	60	4.8
WL340810-200	SUA99286	4,000	208	3	60	11.1
WL350410-200	SUA98951	5,000	480	3	60	6
WL350810-200	SUA92800	5,000	208	3	60	13.9

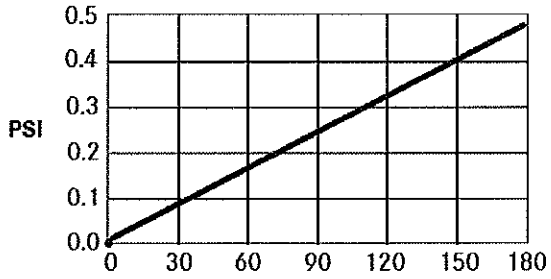
Subject to change. | WT000043030 | 2021-07

Diesel Fuel Water Separator Data Sheet
1000FH (Non-Switchable)

Filter assemblies are designed of heavy duty construction and three-stage filtration using 10 or 30 Micron filter element(s). High capacity water separation (99% water removal efficiency) and fuel filtration process protects engine components from dirt, rust, algae, asphaltines, varnishes, and especially water, which is prevalent in engine fuels. These filters are easy to service with clear collection bowl(s) and self-venting water drain(s).

SPECIFICATIONS

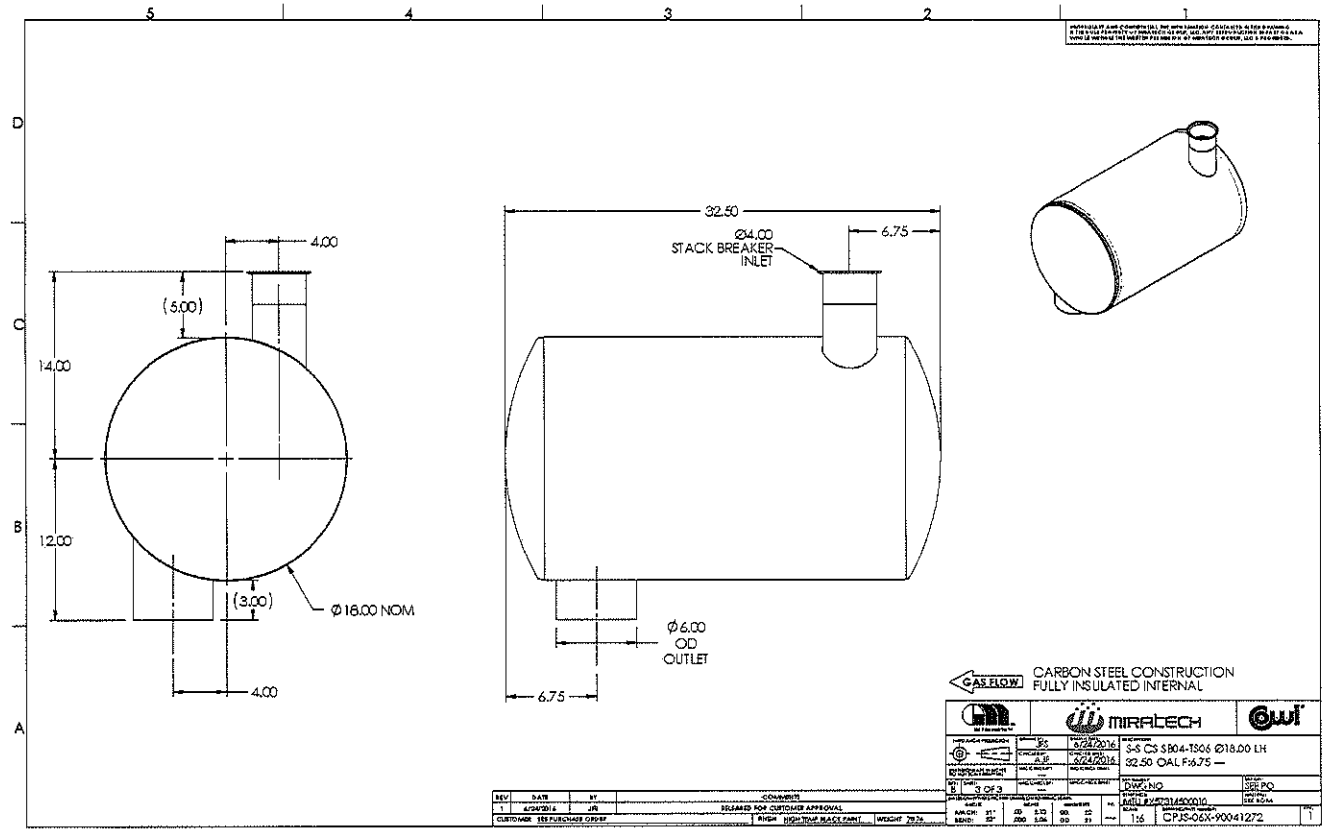
Racor Model Number:	1000FH
mtu Part Number (10 Micron filter element):	SUA100601
mtu Part Number (30 Micron filter element):	SUA95296
Generator Set Model Power Range (Standby):	350-650 kWe
Generator Set Model Power Range (Prime):	325-615 kWe
Height:	55.9 cm (22 in)
Depth:	17.8 cm (7 in)
Width:	15.2 cm (6 in)
Weight (dry):	4.5 kg (10 lb)
Maximum Flow Rate: (one unit online)	681 lph (180 gph)
Port Size:	7/8 in - 14 UNF (SAE J1926 female threads)
Minimum Service Clearance:	
(above assembly)	25.4 cm (10 in)
(below assembly)	5.1 cm (2 in)
Clean Pressure Drop:	3 kPa (0.43 psi)
Maximum Pressure:	1.03 bar (15 psi)
Water In Bowl Capacity (per bowl):	305 ml (10.3 oz)
Operating Temperature:	-40 °C to 124 °C / -40 °F to 255 °F



SAE J905 Fuel Flow Restriction
Flow in Gallons Per Hour
Note: Controlled lab tests. Field results may vary.

Subject to change. 2021-06

A Rolls-Royce solution



MIRATECH :
CPJS-06X-9004127

Tolerierung / Toleranceing ISO 8015	Masse / Size ISO 14405	Allgemeintoleranzen / General Tolerances ISO 2768-mK
Oberflächenangaben nach MTN5033 Surface Specification per MTN5033	Allgemeine Fertigungsvorschriften nach MMN 332 Production Specification per MMN 332	– –

Verwendbar für Typ Applicable to Model		WORD	Datum Date	Name
Projekt-/Auftrags-Nr. Project/Order No.		Bearb. Drawn	16-07-14	Anderson
Ref.-Nr./Ref. No.	Emissions_ID	Gepr. Checked	16-07-14	Kost
Bei Fremdteil/Kaufteil dürfen alle techn. Änderungen am Lieferumfang nur nach unserer vorherigen Genehmigung vorgenommen werden. Techn. modifications to third party or purchased parts require our prior permission.		Norm Stndr.	16-07-14	Carsten
		Abt. Dept.	EDMM	Halbert

Masse/Mass kg 29 | Format/Size A3

Benennung/Title

SCHALLDAEMPFER

VER LH -2" - 8-10V1600

SILENCER

SILENCER 30DB REDUCTION

MTU Friedrichshafen GmbH

Zeichnungs-Nr./Drawing No.

X57314500010

Blatt/Sheet 1 von/of 1

Buchst. Rev.Ltr.	Kommt vor Frequency	Änderung/Revision	Auftrags-Nr. Rev.Nr.Nr.	Datum Date	Name	Gepr. Check
—	—	—		–	Anderson	—

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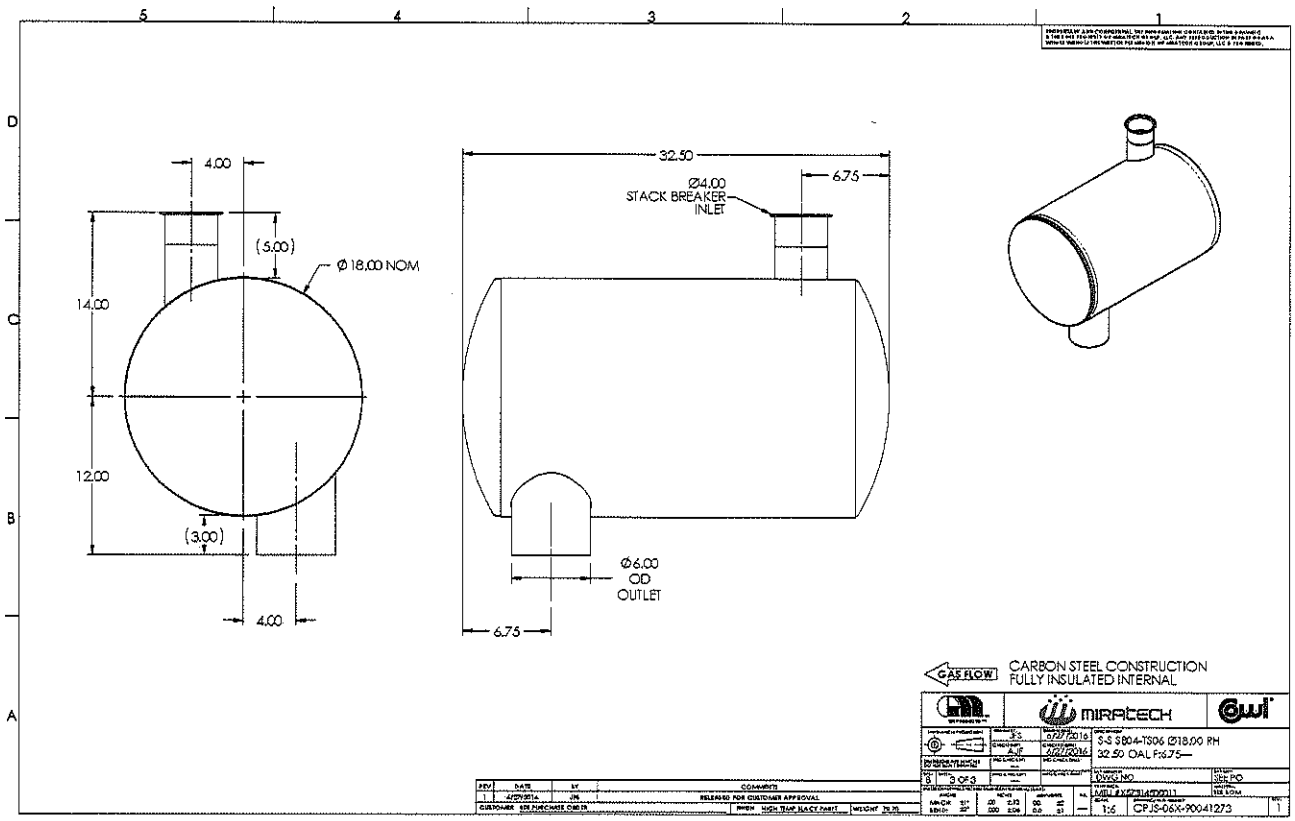

MIRATECH:
CPJS-06X-90041273

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Oberflächenangaben nach MTN5033 Surface Specification per MTN5033	Allgemeine Fertigungsvorschriften nach MMN 332 Production Specification per MMN 332			- -	Masse/Mass kg 29	Format/Size A3
Verwendbar für Typ Applicable to Model	WORD	Datum Date	Name	Benennung/Title SCHALLDAEMPFER		
Projekt-/Auftrags-Nr. Project/Order No.	Bearb. Drawn	16-07-14	Anderson			
Ref.-Nr./Ref. No. Emissions_ID	Gepr. Checked	16-07-14	Kost	VER RH -2" - 8-10V1600		
Bei Fremdteil/Kaufteil dürfen alle techn. Änderungen am Lieferumfang nur nach unserer vorherigen Genehmigung vorgenommen werden. Techn. modifications to third party or purchased parts require our prior permission.	Norm Stndr.	16-07-14	Carsten	SILENCER		
	Abt. Dept.	EDMM	Halbert	SILENCER 30DB REDUCTION		
MTU Friedrichshafen GmbH				Zeichnungs-Nr./Drawing No. X57314500011	Blatt/Sheet 1 von/of 1	

Buchst. Rev.Ltr.	Kommt vor Frequency	Änderung/Revision	Auftrags-Nr. Rev.Not.No.	Datum Date	Name	Gepr. Check
—	—	—		–	Anderson	—

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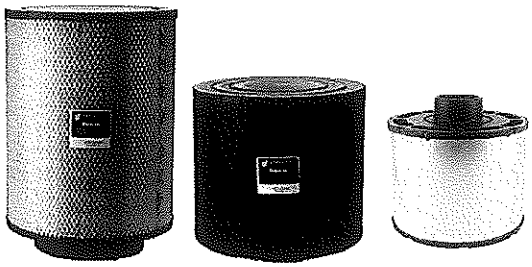
Air Filter Data Sheet

DESCRIPTION

Air filters offer engine protection and minimal downtime during normal maintenance. The air filters on ***mtu*** generator sets are easy to install, durable, and reliable.



FEATURES

- Designed to withstand severe intake pulsation and high humidity
- Sturdy, self-supporting, one-piece construction
- Lightweight and compact

SPECIFICATIONS

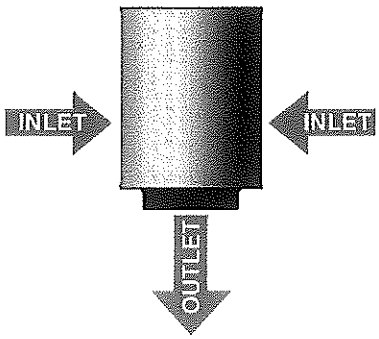
QTY: 2

mtu Part #	Airflow @ Inches of Water Restriction (refer to *Airflow Diagrams* below)			Weight	Maximum Temp	
	m^3/min (SCFM) @ 4 in. H_2O	m^3/min (SCFM) @ 6 in. H_2O	m^3/min (SCFM) @ 8 in. H_2O	kg (lb)	Continuous °C (°F)	Intermittent °C (°F)
SUA90069	43.9 (1,550)	52 (1,836)	60 (2,118)	3.6 (8)	83 (180)	105 (220)
SUA86885	13.7 (485)	17.6 (620)	21.5 (760)	2.6 (5.8)	83 (180)	105 (220)
SUA77166	3.8 (135)	4.6 (163)	5.3 (190)	1.3 (2.9)	N/A	N/A
SUA40198	3.1 (112)	4.1 (145)	4.8 (170)	0.64 (1.4)	83 (180)	105 (220)
XG3012100019	23.5 (830)	31.43 (1,110)	36.67 (1,295)	1.45 (3.2)	83 (180)	105 (220)
XG2112100001 XG2512100002	9.63 (340)	13.03 (460)	15.85 (560)	1.59 (3.5)	N/A	N/A

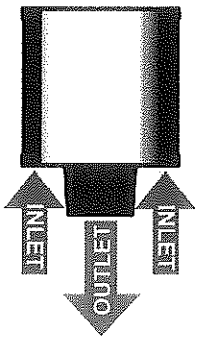
mtu Part #	Dimensions (refer to *Dimension Diagrams* on next page)				Minimum Removal Clearance
	Body Length (D) mm (in)	Body Diameter (A) mm (in)	Outlet Length (F) mm (in)	Outlet Diameter (C) mm (in)	mm (in)
SUA90069	400 (15.75)	318 (12.5)	48 (1.89)	198 (7.8)	38.1 (1.5)
SUA86885	279 (11)	318 (12.5)	35 (1.38)	127 (5)	38.1 (1.5)
SUA77166	172 (6.75)	216 (8.5)	27 (1.08)	75 (2.96)	38.1 (1.5)
SUA40198	102 (4.0)	216 (8.5)	35 (1.38)	64 (2.5)	38.1 (1.5)
XG3012100019	381 (15)	318 (12.5)	35 (1.38)	152 (6)	38.1 (1.5)
XG2112100001 XG2512100002	267 (10.5)	267 (10.5)	35 (1.38)	101.6 (4)	38.1 (1.5)

N/A = Not Available

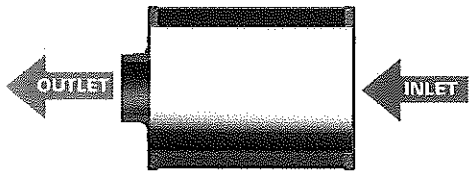
A Rolls-Royce solution



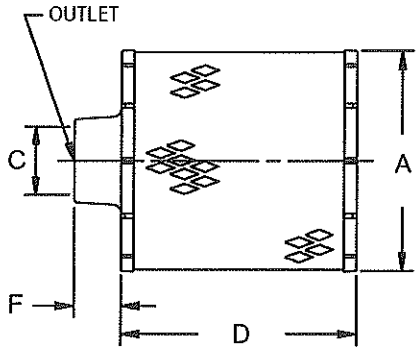
~~Airflow Diagram: SUA90069, XG3012100019~~



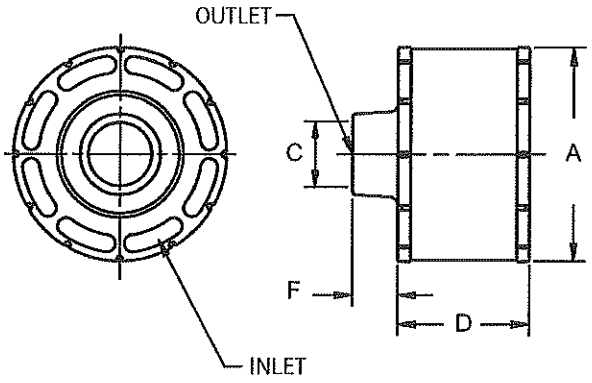
Airflow Diagram: SUA86885, ~~SUA77166, SUA40198~~



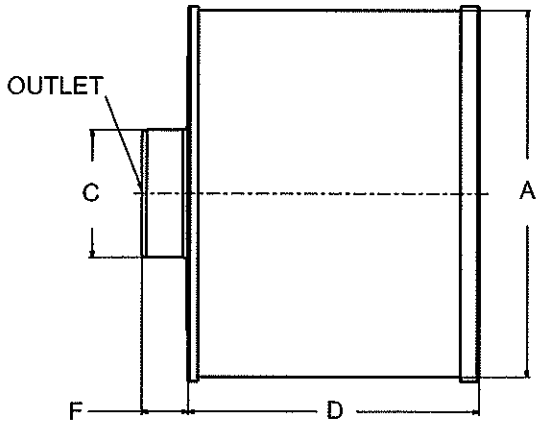
~~Airflow Diagram: XG2112100001, XG2512100002~~



~~Dimension Diagram: SUA90069, XG3012100019~~



Dimension Diagram: SUA86885, ~~SUA40198~~

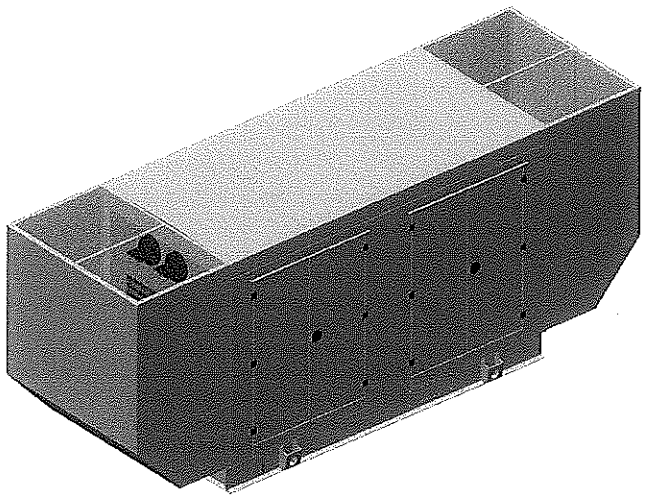


~~Dimension Diagram: SUA77166, XG2112100001, XG2512100002~~

Subject to change | WT00037879 | 2021-06

Enclosure and Sound Data Sheet - Diesel, Open Field

60 Hz: 450-600 kW Standby / 400-550 kW Prime



~~Level 3 Enclosure (pictured)*~~

Enclosure Level Identification	
Level 1	Weather-protective enclosure constructed of heavy gauge steel ~~or aluminum~~ with fixed stormproof panels designed for 130 mph wind load rating. Enclosure consists of a bolted and welded construction with unit-mounted internal silencer included. Hinged, lockable double-door access on both sides of the enclosure.
Level 2	Level 1 enclosure with exhaust scoop.
Level 3	Level 2 enclosure with air intake scoop with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed in scoops and inside enclosure walls, where applicable.

CERTIFICATIONS AND STANDARDS

- UL 2200
- IBC / OSHPD
- CSA C22.2 No. 100
- CSA C22.2 No. 14

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
  - Steel enclosure: 1.9 mm (0.075 in) - 14 gauge or greater thickness
  - ~~Aluminum enclosure: 2.3 mm (0.09 in) or greater thickness~~
- 130 mph wind rating
- Service access
  - Double door access gives ease of service to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels and drain
- Hardware
  - Powder coated hinges with stainless steel pins
  - Key-lockable and pad-lockable powder coated door handles
- Powder coat finish paint: RAL 7001 Silver Grey standard
  - Custom colors available upon request
- Internal silencer (Critical grade or better)
  - Insulated or wrapped mufflers and exhaust pipes
  - Stainless steel flexible exhaust connections (where applicable)

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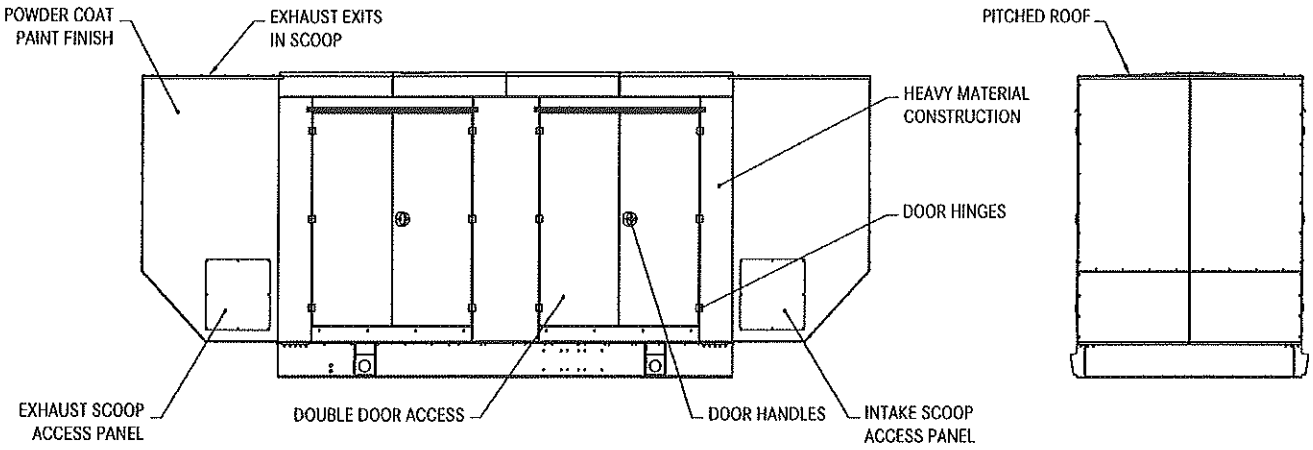


~~Level 3 Enclosure (pictured)*~~

~~OPTIONAL FEATURES~~

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- 190 mph wind rating
- For other custom options, please consult factory.

ENGINE EXHAUST SOUND RATINGS dB(A) AT 1 METER
OPU SOUND RATINGS dB(A) AT 1 METER
ENCLOSURE SOUND RATINGS dB(A) AT 7 METERS

			1 Meter		7 Meters		
Application	Model	Power Node	Engine Exhaust[1]	OPU[2]	Level 1	Level 2	Level 3
60 Hz Standby	*mtu* 10V1600 DS450	450 kW	104	102.8	91	86.5	74.5
	mtu 10V1600 DS500	500 kW	106	102.8	91	86.6	74.9
	mtu 12V1600 DS550	550 kW	108.9	100.5	92.9	88	81.2
	mtu 12V1600 DS600	600 kW	109.9	100.5	92.8	89	81.5
Application	Model	Power Node	Engine Exhaust[1]	OPU[2]	Level 1	Level 2	Level 3
60 Hz Prime	*mtu* 10V1600 DS450	400 kW	C/F	101.8	90.7	86	74
	mtu 10V1600 DS500	450 kW	104	102.8	91	86.5	74.5
	mtu 12V1600 DS550	500 kW	107.6	100.1	92.8	88	81
	mtu 12V1600 DS600	550 kW	108.8	100.3	92.9	88	81.2

[1] Undampened engine exhaust noise

[2] Measurement with infinite exhaust connection

NOTE:
- Measurements include exhaust noise.
- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures.
- For installations within 50 miles of the coast, aluminum enclosures are recommended to prevent accelerated corrosion.
- Sound pressure levels subject to environment, instrumentation, measurement, installation, and generator set variability.
- Generator set is tested on level ground without spring isolators installed.
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
  - Full-rated load
  - Standard radiator package

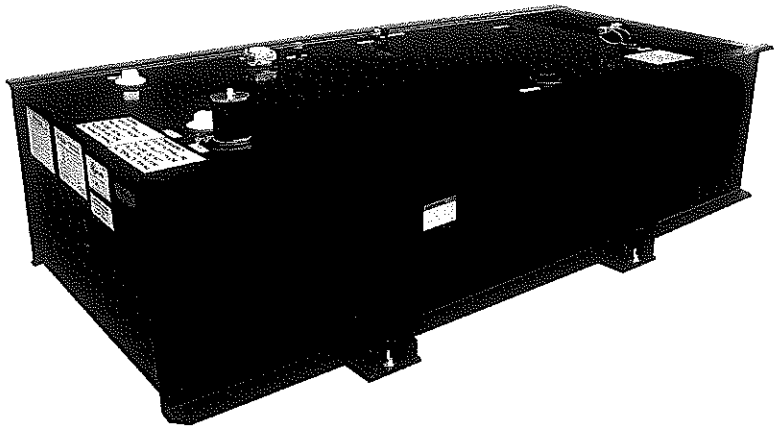
C/F = Consult Factory

* Note: Visual appearance may differ between power nodes.

Subject to change. 2021-04

Diesel Fuel System Data Sheet

Sub-Base Tank



DESCRIPTION

48 HOURS / 2,000 GALLONS EXTENDED TANK

The sub-base fuel tanks used with ***mtu*** generator sets are manufactured and listed per UL142 and ULC-S601 standards for steel above-ground tanks. These certifications ensure that our tanks meet the structural and mechanical integrity requirements for mounting generator sets directly on top, providing our customers with a safe and efficient fuel storage system. These tanks are suitable for above-ground storage of non-corrosive, stable, flammable, or combustible liquids that have a specific gravity not exceeding that of water. They are intended for installation and use in accordance with the codes referenced in the *Certifications and Standards* section. The secondary containment construction consists of a steel tank within a closed steel containment dike that is capable of being monitored for leakage.

STANDARD FEATURES

- Normal vent
- Emergency vent
- Manual fill
- Cam lockable fill cap
- Basin drain (plugged)
- Removable supply and return dip tubes
- Leak detection
- Black paint finish
- Secondary containment
- Electrical stub-up area: Provides space for generator set electrical connections and internal wiring capabilities
- Baffles: Separate cold engine supply fuel from hot returning fuel (additional baffling as required for structural integrity)
- Fuel level gauge: A direct-reading fuel level gauge with electric sender

~~OPTIONAL FEATURES~~

- Fuel fill drop tube
- Level alarm
- High fuel pre-alarm and low fuel level shutdown
- Five-gallon spill/fill containment box with lockable hatch
- Optional selectable accessories to meet regional codes/ jurisdictions
- IBC certification 2012, 2015, and 2018

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CERTIFICATIONS AND STANDARDS

United States	Canada
UL 142	ULC-S601

In addition, this equipment is compatible with the following certifications when properly installed in accordance with all applicable codes, standards, regulations, and laws pertaining to the installation and application of the product. Reference the prevailing codes for installation requirements.

United States	Canada
NFPA 30	Part 4: National Fire Code of Canada
NFPA 37	CSA B139
NFPA 110	CSA C282
International Fire Code	CCME PN 1326

Isolator Pad Data Sheet

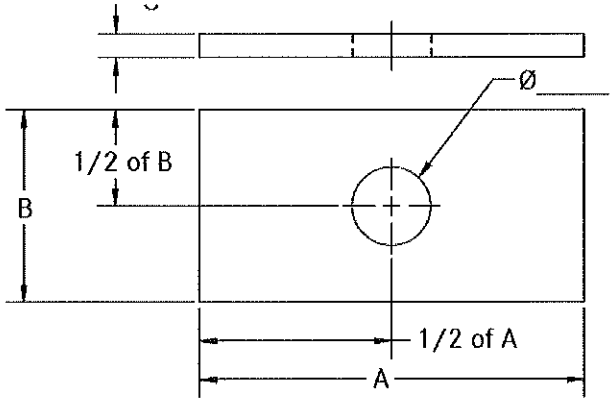
DESCRIPTION

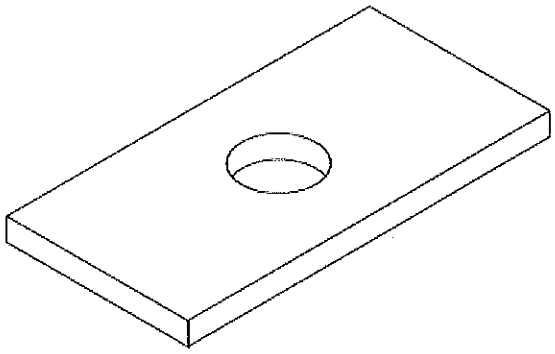
These square-molded, neoprene pads can be used to compensate for inconsistencies in the mounting surface between the generator set base frame and the installation surface, or between the sub-base fuel tank and the installation surface, if applicable. They can be easily cut to any desired shape and can be used in multiple layers to increase deflection.

NEOPRENE TYPICAL PHYSICAL PROPERTIES

Hardness:	40A-90A
Tensile Strength:	500
Elongation:	200
Tear Value:	50
Thermal Conductivity (K Factor):	0.30

Heat Resistance @ 100 °C (212 °F) after 70 Hours:	
Change in Hardness:	10
Change in Tensile:	-16%
Change in Elongation:	-60%
Compression Set:	50%
Lowest Working Temperature:	-40 °C (-40 °F)
Highest Working Temperature:	90.6 °C (195 °F)





mtu Part Number	Dim. A mm (in)	Dim. B mm (in)	Dim. C mm (in)	Hole Diameter mm (in)	Durometer
SUA46904	101.6 (4)	50.8 (2)	6.35 (0.25)	20.638 (0.813)	50
SUA46905	152.4 (6)	50.8 (2)	6.35 (0.25)	20.638 (0.813)	50
SUA46906	254 (10)	50.8 (2)	6.35 (0.25)	20.638 (0.813)	50
SUA46907	457.2 (18)	63.5 (2.5)	6.35 (0.25)	20.638 (0.813)	50
QTY: 16 SUA46908	457.2 (18)	76.2 (3)	6.35 (0.25)	20.638 (0.813)	50
SUA46909	457.2 (18)	457.2 (18)	6.35 (0.25)	Not Required	50
SUA63015	203.2 (8)	76.2 (3)	6.35 (0.25)	20.638 (0.813)	50
SUA77843	101.6 (4)	50.8 (2)	19.05 (0.75)	20.638 (0.813)	60
SUA86147	457.2 (18)	76.2 (3)	6.35 (0.25)	20.638 (0.813)	70
SUA95672	304.8 (12)	50.8 (2)	6.35 (0.25)	20.638 (0.813)	50
SUA102408	457.2 (18)	76.2 (3)	6.35 (0.25)	26 (1.024)	50
X54599100330	381 (15)	76.2 (3)	6.35 (0.25)	22.225 (0.875)	50

Subject to change. | WT00038043 | 2021-04

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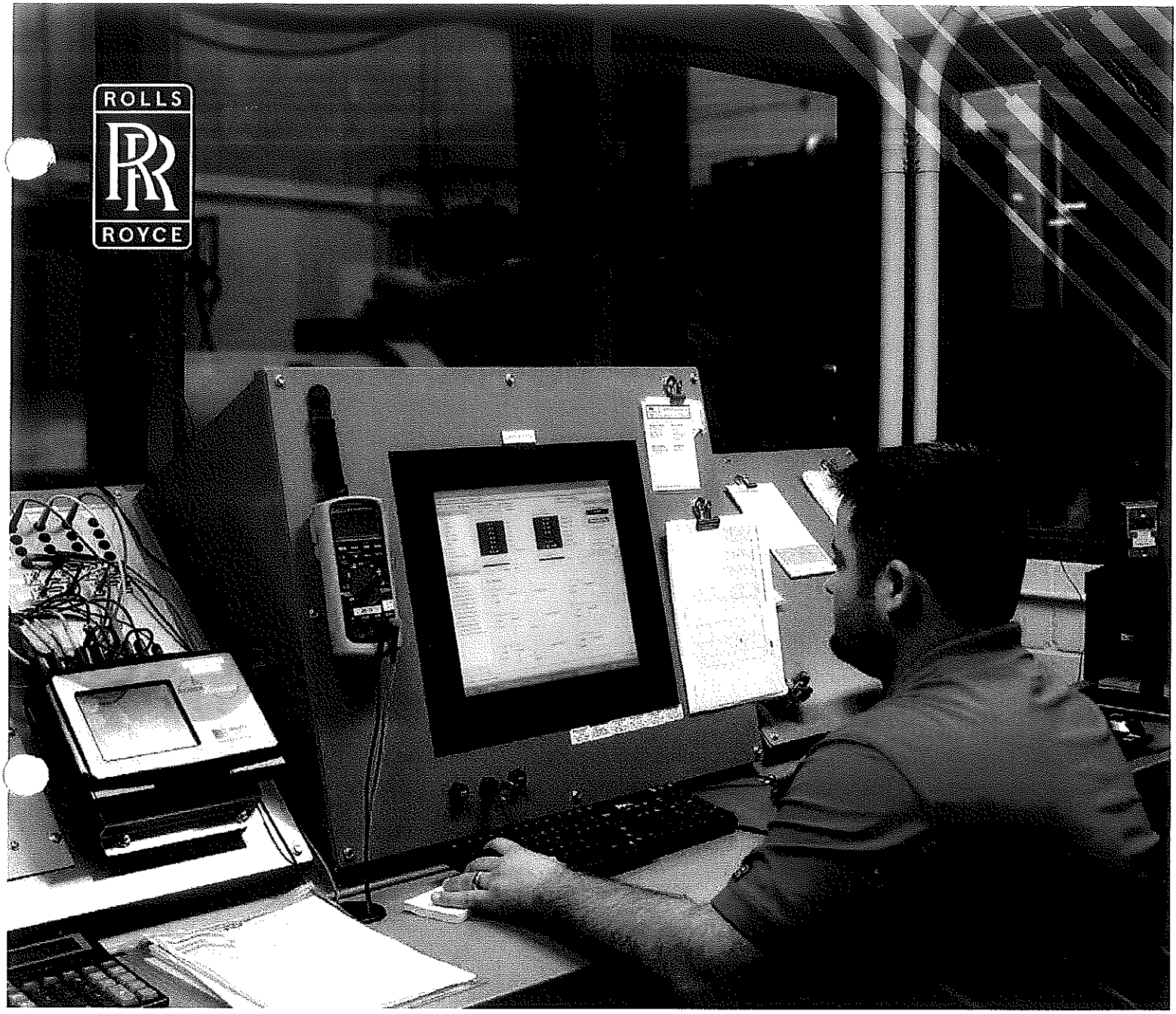

Power Generation

PERFORMANCE ASSURANCE CERTIFICATION

A Rolls-Royce solution

TESTING PROCEDURES

Prototype

We have been producing superior generator sets for more than six decades. Understanding the importance of reliable, cost-effective products, we have developed industry-leading test procedures to ensure we exceed this criteria. Our testing program confirms that our customers will receive products of the highest quality.

Our Performance Assurance Certification (PAC) certifies that every MTU generator set undergoes rigorous prototype testing including the following:

Prototype Test Procedures
- **Rated Load (NFPA 110)**
  All generator set models will produce the nameplate-rated load within the design tolerance of the generator set.
- **Extended-run Testing**
  All generator set prototypes have been subjected to extended run-time testing.
- **Transient Response Analysis (ISO 8528-5)**
  All new generator set models have undergone transient response analysis per ISO 8528-5.
- **Torsional Analysis**
  All generator set models have undergone torsional stress analysis.
- **Engine Cooling System**
  All generator set models will cool sufficiently within the ambient design conditions per each model.
- **Anticipatory Alarms and Shutdowns**
  The pre-alarms and alarms function appropriately to protect the generator set from any foreseen unnecessary failures.
- **Vibrational Analysis (ISO 8528-9)**
  All new generator set models have undergone vibration analysis to ensure that each engine-generator coupling is balanced and that there is no destructive resonant vibration.
- **Noise Analysis (ISO 8528-10)**
  All generator sets undergo airborne noise analysis using the enveloping surface method.

Prototype Test Standards
MTU generator sets are compliant with many different codes and standards. Our validation philosophy and performance are regularly reviewed to ensure continuity with these codes and standards: *UL2200, CSA, EPA, NFPA 99—Health Care Facilities, NFPA 70—National Electrical Code, NFPA 110—Standard for Emergency and Standby Power Systems, Department of Labor and Industry, NEMA MG 1—Motors and Generators, and MIL-STD-705-c.*

Factory Acceptance

Our factory testing is performed with the same extreme diligence and attention to detail that is given to the prototype testing process. Every MTU generator set receives a complete factory acceptance test that certifies and ensures the system will function in accordance to every specific application.

Test metering has an accuracy of 1.3% or better. This metering is calibrated a minimum of once per year and is directly traceable to the Bureau of Standards.

Factory acceptance testing procedures
- **Insulation Resistance Inspection** (301.1c)*
- **High Potential Test** (302.1b)*
- **Alternator Overspeed** (1 min.)*
- **Engine Inspection**
- **Generator Inspection**
- **Resistances Inspection** (401.1b)
  - Exciter Field Stator
  - Alternator Armatures
- **Mounting and Coupling Inspection**
- **Engine Fuel Oil System Inspection**
- **Engine Lube Oil System Inspection**
- **Engine Cooling System Inspection**
- **DC Charging System Inspection**
- **Circuit Breaker Inspection**
- **Anticipatory Alarms and Shutdowns Inspection** (505.2b, 515.1b, 515.2b)
- **Optional Equipment Inspection** (513.2a)
- **Load Test Inspection**
  - Full Nameplate-Rated Load
  - No-Load Inspection
  - MAX Load @ 1.0 P.F. (640.1d)
  - MAX Load @ 0.8 P.F.
  - Block Loads @ 0-25%, 0-50%, 0-75%, 0-100%
- **Phase Balance and Sequence Inspection** (507.1d, 508.1d, 516.1a)

** Performed by Alternator OEM*

Prototype Test Summary (PTS)

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Prototype testing is administered to validate the electrical and mechanical design integrity of the generator set. The results indicated below summarize testing performed on the prototype of the specified generator set model. This form of testing is only conducted on standard factory prototype generator sets. *Results may vary.*

GENERATOR SET MODEL(S):	MTU 10V1600 DS500 ~~MTU 10V1600 DS450~~

Rep. Prototype Model:	MTU 10V1600 DS500	**Test Date:**	05/16/2011
kW:	500	**kVA:**	625
Voltage:	480	**Hz:**	60

ENGINE/GENERATOR

Engine Manufacturer:	MTU	**Engine Model:**	10V1600G80S
Engine Fuel:	Diesel		
Generator Manufacturer:	Marathon	**Generator Model:**	572RSL4029
Voltage Regulator Model:	DVR2000E	**PMG Equipped:**	☒ Yes ☐ No

OPTIONS

Enclosure Level:	Level 3	**Silencer:**	Critical
Air Filtration:	Standard		

TEST SUMMARY

TEST	TEST RESULT
Transient Performance *Certifies that the engine generator-set model has undergone transient response analysis per ISO 8528-5*	**NFPA-110 One Step:** ☒ 100% ☐ Other. Specify: ____ % **Full Load Acceptance:** Voltage Dip: 29.2 % Recovery Time: 2 seconds Frequency Dip: 10.7 % Recovery Time: 7.2 seconds
Steady State Performance *Certifies that voltage deviation and harmonics are within acceptance tolerance range per ISO-8528-5 at full load*	**Frequency Regulation:** 0.13 +/- % Regulation Overall 60.185 Maximum Hz 60.025 Minimum Hz **Voltage Regulation:** 0.22 +/- % Regulation Overall 481.1 Maximum AC Volts 479 Minimum AC Volts
Torsional Analysis *Certifies that the generator set has undergone torsional stress analysis and is not subjected to torsional stresses that could be harmful to the unit*	☒ Complete
Cooling System *Certifies that all generator set models will cool sufficiently within the ambient design conditions per each model at referenced enclosure level*	50 °C (122 °F) Maximum Ambient Temperature 642 m^3/min (22,672 SCFM) Radiator Air Flow
Sound Data *Certifies that sound data is within the acceptable tolerance range per ISO 8528-10 at referenced enclosure level*	75.4 dBA @ 7 m (23 ft) at full rated load *The sound value is representative of the specified prototype at the time of testing and is subject to alteration due to technological advances. Please contact your MTU representative for the most recent enclosure and sound data.*
Vibrational Analysis *Certifies that new generator set models have undergone vibration analysis to ensure that each generator coupling is balanced and there is no destructive resonant vibration per ISO 8528-9*	☒ Complete

Subject to change. 2020-05

CERTIFICATE OF COMPLIANCE

Certificate Number	20140815-AU3559
Report Reference	AU3559-20100218
Issue Date	2014-AUGUST-15
Issued to:	MTU ONSITE ENERGY CORP 100 POWER DR MANKATO MN 56001
This is to certify that representative samples of	ENGINE GENERATORS See Addendum Page
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 2200, Stationary Engine Generator Assemblies
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle: (UL) with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number	20140815-AU3559
Report Reference	AU3559-20100218
Issue Date	2014-AUGUST-15

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Stationary engine generator assemblies (diesel fueled) for outdoor use and Indoor Use, models as follows:

Model Series D, followed by S or P, may be followed by two or three zeroes, followed by a number ranging from 230, 250, 275, 300, 325, 350, 365, 400, 450, 500, 550, or 600, followed by D, followed by 6, followed by C or S, followed by F, R, P, J, N, or G followed by A, followed by H, followed by 1, followed by 48 or 57, followed by 3 or 4. May have additional prefix or suffix letters or numbers

Models D, followed by G, followed by 06, 08, 10, or 12, followed by R or V, followed by 1600. May have additional prefix or suffix letters or numbers.

Models 6, 8, 10, or 12, followed by R or V, followed by 1600, followed by D, followed by S, followed by a number ranging from 230 to 600. May have additional prefix or suffix letters or numbers.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2021 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **MTU America, Inc.**
(U.S. Manufacturer or Importer)
Certificate Number: **MMDDL21.0ZWR-004**

Effective Date: 12/07/2020
Expiration Date: 12/31/2021

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 12/07/2020
Revision Date: N/A

Model Year: 2021
Manufacturer Type: Original Engine Manufacturer
Engine Family: MMDDL21.0ZWR

Mobile/Stationary Indicator: Stationary
Emissions Power Category: kW>560
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

ROLLS-ROYCE SOLUTIONS AMERICA INC.

Two (2) Year / 3,000 Hour Basic Limited Warranty
Standby (3D) / Prime (3B) / Data Center Continuous Power (3F)

Rolls-Royce Solutions America Inc. ("RRSA") issues the following express Limited Warranty subject to the following terms, conditions, and limitations:

An original consumer ("Owner") who purchases an RRSA engine generator set ("Product") is entitled to coverage under this Limited Warranty. RRSA warrants to the Owner that the Product is free of defects in material and workmanship and will perform under normal use and service from valid start-up performed by RRSA. Any nonconformity to the foregoing is defined as a Warrantable Defect. This Limited Warranty applies to Product shipped by RRSA after January 1, 2014.

1. Disclaimers

LIMITATION OF WARRANTIES: THIS LIMITED WARRANTY IS GIVEN EXPRESSLY AND IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, FREEDOM FROM INFRINGEMENT OR THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, OR ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE OR USAGE OF TRADE. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, REPRESENTATIONS, OR WARRANTIES NOT SPECIFIED HEREIN.

THIS LIMITED WARRANTY, THE OBLIGATIONS OF RRSA AND THE RIGHTS AND REMEDIES OF THE OWNER SET FORTH IN THIS LIMITED WARRANTY ARE EXCLUSIVE AND ARE EXPRESSLY IN LIEU OF, AND THE OWNER HEREBY WAIVES AND RELEASES ALL OTHER OBLIGATIONS, WARRANTIES (INCLUDING WARRANTY AGAINST REDHIBITORY DEFECTS), REPRESENTATIONS OR LIABILITIES, EXPRESS OR IMPLIED, ARISING BY LAW IN CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY CLAIMS ARISING OUT OF, CONNECTED WITH OR RESULTING FROM THE PERFORMANCE OF THIS LIMITED WARRANTY OR FROM THE DESIGN, MANUFACTURE, SALE, REPAIR, LEASE OR USE OF THE PRODUCT, ANY COMPONENT THEREOF AND SERVICES DELIVERED OR RENDERED HEREUNDER OR OTHERWISE.

IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT OR WARRANTY, ALLEGED NEGLIGENCE, OR OTHERWISE, SHALL RRSA BE SUBJECT TO LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES OF ANY KIND, INCLUDING WITHOUT LIMITATION, DAMAGE TO THE PRODUCT, OR OTHER PROPERTY, COMMERCIAL LOSSES, LOST PROFITS, LOSS OF USE, INCONVENIENCE, LOSS OF TIME, COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, DOWNTIME, OR CLAIMS OF CUSTOMERS.

RRSA'S AGGREGATE TOTAL LIABILITY RELATING TO THE SYSTEM AND/OR PRODUCT UNDER THIS LIMITED WARRANTY OR UNDER ANY OTHER CLAIM (IN CONTRACT, TORT, OR OTHERWISE) MADE IN CONNECTION WITH THE SALE OR USAGE OF THE SYSTEM AND/OR PRODUCT IS LIMITED TO THE DOLLAR AMOUNT OF THE OWNER'S ORIGINAL PAYMENT MADE FOR THE SYSTEM AND/OR PRODUCT.

2. Limited Warranty Periods

Limited Warranty Period. The Limited Warranty Period for a Warrantable Defect in the Product is twenty-four (24) months after the first commissioning of the Product. In all cases, the Limited Warranty period will expire not later than thirty-six (36) months from the date of shipment from the RRSA Mankato, MN facility or after 3,000 operation hours, whichever occurs first.

Accessories Coverage Period. The Accessories Coverage Period for a Warrantable Defect in cords, receptacles, cord reels, gas flex pipes, housing lights, space heaters, and associated equipment ("Accessories") is twelve (12) months from the date of shipment from RRSA Mankato, MN facility.

RRSA warranty obligations under this Limited Warranty are contingent upon distributor completing the following:

(a) The RRSA warranty and the *Start-Up Validation and Pre-Inspection Form.* Return both to RRSA within sixty (60) days of the start-up date; and
(b) The engine registration form (when applicable). Return to the manufacturer as stated in the engine registration form instructions.

3. RRSA Responsibilities

If a Warrantable Defect is found during the Limited Warranty Period and/or the Accessories Coverage Period, and provided the Owner has complied with its obligations under Section 4, RRSA will, during normal working hours, through an RRSA authorized distributor, dealer, or service outlet, perform some or all of the following:

(a) Repair or replace, at the sole election of RRSA, the defective part with a new or remanufactured replacement part;
(b) Provide reasonable or customary labor needed to correct the Warrantable Defect;
(c) Provide technician travel time of 400 miles to and from the closest RRSA authorized distributor, dealer, or service outlet to the Product location;
(d) Part removal and re-installation, if necessary and as solely determined by RRSA.

The obligation to repair or replace defective parts by RRSA does not include responsibility for reimbursement of incidental or consequential costs. If RRSA repairs or replaces an Accessory, part, or Product under this Limited Warranty, the repaired or replaced Accessory, part, or Product assumes the unexpired portion of the warranty period remaining from the original Accessory, part, or Product. Repair or replacement of an Accessory, part, or Product will not extend the term of the original Limited Warranty Period or Accessories Coverage Period. Parts or Product replaced shall become the property of RRSA.

Failure of RRSA to enforce any of the terms or conditions stated herein shall not be construed as a waiver of such provision or of any other terms and conditions of this Limited Warranty.

4. Owner Responsibilities

During the Limited Warranty Period and Accessories Coverage Period, the Owner is responsible for, and RRSA will not reimburse for the following:

(a) Battery;
(b) Premium or overtime labor costs;
(c) Labor and material costs for Product removal and reinstallation;
(d) Any special access fees required to gain access to RRSA equipment, without limitation, training or safety policy requirement to gain access;
(e) Transportation costs or travel expenses related to delivery of the Product to the designated distributor, dealer, or service outlet;
(f) Incidental and consequential costs, damages, or administrative expenses of whatever nature;
(g) Non-Product repairs, vehicle damage, "downtime" expenses, cargo damage, fines, lost income, any business costs of any kind, Owner's travel expenses, and other losses resulting from a Warrantable Defect;
(h) Shipping charges for replacement parts/Products in excess of those which are usual and customary; or
(i) Local taxes, if applicable.

In addition, Owner must:

(a) Operate, use, and maintain the Product in accordance with the applicable Owner's manual and/or any other manuals specified by RRSA, including without limitation handling, inspection, servicing, or operating instructions;

(b) Promptly notify RRSA or its authorized representative of a Warrantable Defect and make the Product available for repair;
(c) Comply with RRSA or its authorized representative's reasonable directions regarding the timing, sequence, and location of warranty repairs and make the Product available for inspection;
(d) Perform all required maintenance and maintain and provide proof that all required maintenance has been performed;
(e) Use RRSA specified parts, components, and consumables;
(f) Promptly return to RRSA all parts replaced under this Limited Warranty;
(g) Comply with RRSA long term storage guidelines, if applicable, and maintain and provide proof of compliance;
(h) Routinely exercise the Product in accordance with operating instructions;
(i) Install the Product in accordance with the installation guide provided; and
(j) Reimburse RRSA for all costs incurred in providing warranty service where, following examination, the request or claim for warranty coverage proves to be unfounded or excluded, as well as all incidental costs including those incurred investigating the claim.

5. Limitations

RRSA is not responsible, and this Limited Warranty is not available under any circumstances, for any of the following:

(a) Failure of Owner to fulfill its obligations under Section 4;
(b) Failure of Owner to follow RRSA instructions for Product stored by Owner longer than 180 days from date of shipment from the RRSA Mankato, MN facility;
(c) Defects caused by adjustments made by Owner to the fuel system or governor system;
(d) Defects which were obvious or capable of being identified by reasonable inspection and were not reported to RRSA within a reasonable time;
(e) Rental equipment used during warranty work;
(f) Defects caused or potentially caused by service work performed by non-RRSA authorized service providers and/or the use of non-genuine RRSA parts;
(g) Defects resulting from natural wear and tear, external action, negligence, natural disasters, accidents, incorrect use, improper handling or storage, inadequate corrosion-proofing, incorrect assembly or installation, or modification of the Product;
(h) Defects resulting from abuse or neglect, including unauthorized modifications to the Product;
(i) Repair or any use or installation which RRSA, in its sole discretion, determines to be improper;
(j) Defects caused by incorrect maintenance;
(k) Defects resulting from Owner's delay in making the Product available after being notified of a potential problem or Owner's failure to take immediate measures to avoid or mitigate damage;
(l) Damage caused by shipping;
(m) Repair of parts sold by RRSA that are warranted directly to the Owner by the respective part's manufacturer;
(n) Misapplication of the Product;
(o) Diesel engine "wet stacking" due to lightly loaded diesel engines;
(p) Acts of nature or acts of God;
(q) Any failure, other than those resulting from a defect in material or factory workmanship of the Product;
(r) Use of the Product for purposes other than those for which it was intended, including without limitation use of the Product under extraordinary operating conditions not made known to RRSA in writing at the time of the order; or
(s) Material provided by or a design specified by the Owner.

6. Software Warranty. Where software is included in the Product, RRSA warrants to the Owner that 1) the software will be substantially free from material program errors and material defects in material and workmanship, and that 2) it shall

function substantially in accordance with RRSA specification at the time of dispatch from the RRSA manufacturing facility. RRSA does not warrant that the software is error-free or free from "bugs" as commonly categorized by the computer industry. RRSA shall, during the Limited Warranty Period, endeavor to remedy at its cost, in its sole discretion, by repair or replacement of any material program errors or material defects of which Owner has promptly notified RRSA. RRSA, at its option, may elect to provide the most current software at no cost, and in such case RRSA will not cover the cost to install the applicable updated software. RRSA shall have no obligation with respect to any nonconformities resulting from unauthorized modifications to the software or any Owner interfacing.

7. **Emissions Warranty.** The Product may be covered under an emissions warranty specified by the U.S. Environmental Protection Agency and/or the California Air Resources Board. The terms of the warranty, if applicable, may be accessed by following the link: https://www.mtu-solutions.com/eu/en/technical-information/emissions-warranty.html. Any such Emissions Warranty is incorporated herein by reference in its entirety to the extent and with the same force as if fully set forth herein. The Product, if certified, may only be certified to comply with the required country or region-specific emission regulations. Where applicable, the Product is only certified to those specific emission regulations/standards which are clearly stated in the respective RRSA defined technical specifications. IT IS THE OWNER'S SOLE RESPONSIBILITY TO ENSURE THAT THE EXPORT/IMPORT, INSTALLATION, AND USE OF THE PRODUCT(S) COMPLIES WITH THE APPLICABLE EMISSION REGULATIONS IN THE COUNTRY OR REGION WHERE THE PRODUCT(S) WILL BE USED.

8. The Owner is entitled to rectify the defect or to have it rectified by third parties only in urgent cases where operational safety is at risk or in order to prevent disproportionately extensive damage; provided that Owner has informed RRSA and obtained prior written consent from RRSA. In such cases, RRSA shall, in its sole discretion, reimburse the costs incurred by the Owner up to an amount equivalent to the costs RRSA would have incurred had it remedied the defect itself.

9. This Limited Warranty gives the Owner specific legal rights, and the Owner may also have other rights, which vary from state to state. Some states do not allow warranty duration limitations and/or certain exclusions or limitation of incidental or consequential damages. Therefore, the previously expressed exclusion(s) may not apply to Owner. If any one or more of the provisions contained in this Limited Warranty shall be invalid, illegal, or unenforceable in any respect, the validity, legality, or enforceability of the remaining provisions contained therein shall not in any way be affected or impaired thereby.

10. This Limited Warranty is governed by the laws of the State of Michigan without regard to its conflicts of law principles and excluding the United Nations Convention for the International Sale of Goods. Any and all disputes between the parties that may arise pursuant to the sale or use of the Product shall be heard and determined before an appropriate state of federal court located in Oakland County, Michigan. The Owner acknowledges that such court has the jurisdiction to interpret and enforce the provisions herein, and Owner waives any and all objections that it may have as to personal jurisdiction or venue in any of the above courts.

11. In order to obtain performance of an RRSA warranty obligation, the Owner should contact the nearest RRSA authorized distributor, dealer, or service outlet for instructions. To find the location of the nearest RRSA authorized distributor, dealer, or service outlet call +1 248-560-8000 or write to: Rolls-Royce Solutions America Inc. Warranty Department, 39525 MacKenzie Drive, Novi, MI 48377.

MISCELLANEOUS

The following items are included as part of this submittal package.

This is a 500kW Diesel Generator-Set.

Curtis Power Solutions, LLC (CPS) warrants we are an authorized MTU repair facility and our technicians are trained and authorized to work on the equipment being supplied. CPS is the administrator of the equipment's warranty. The use of non MTU parts or maintenance by a non MTU authorized distributor or factory trained technician may void the warranty.

A standard factory run test will be completed as per our factory Performance Assurance Certification. If this test is to be witnessed, please advise us 30 days in advance of shipment. There are costs associated with a witness test.

Experience—CPS has been supplying generator sets in the mid-Atlantic region since 1944. MTU is a company with over 100 years of experience.

One (1) hard copy of the O&M Manual is being provided. There is a charge of $150.00 for each additional hard copy manual needed. There is no charge for CD copies of the O&M manual.

The generator-set will be shipped directly to the job site or your rigger.

CPS will provide expertise as required and verbally assist in the installation of the generator set. Installation procedures are included in the O&M manual.

CPS will complete a factory startup. Testing will be completed based on MTU Onsite Energy testing requirements. If applicable, NETA testing and infrared scanning is to be completed by others.

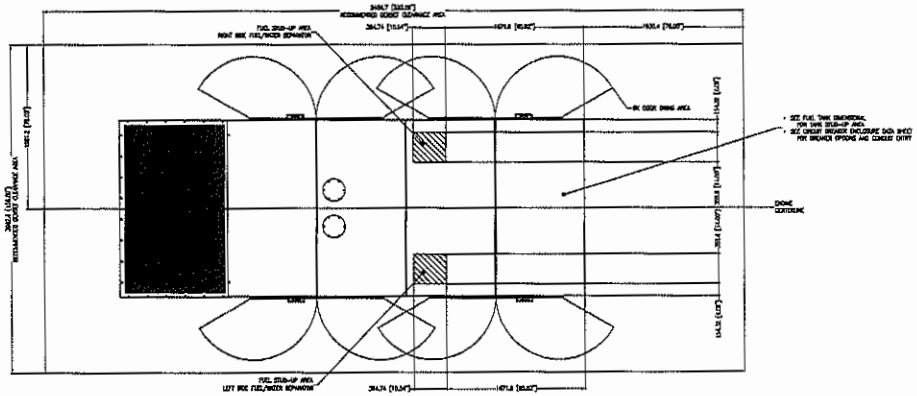
CPS will provide a demonstration and owner training as required.

Contact Melissa Tewey at 410-536-1203 ext. 3356 for additional parts requests.
Contact Keith Phillips at 609-781-5978 for any contract maintenance needs.

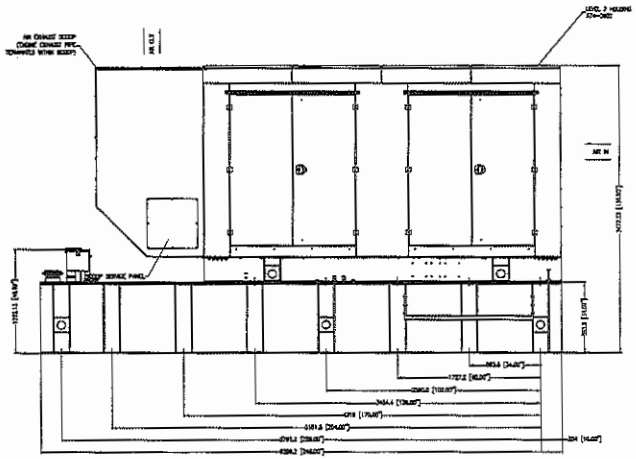
ESTIMATED DIMENSIONS & WEIGHT DATA

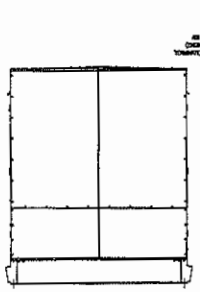
Generator	221"L, 84"W, 103"H
Tank	248"L, 84"W, 34"H
Total	248"L, 84"W, 137"H

Generator w/ Tank	19,170Lbs.
Fuel	14,215Lbs.
Total	33,385Lbs.

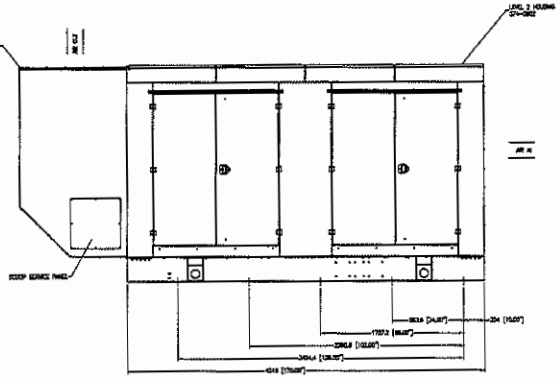


TOP VIEW

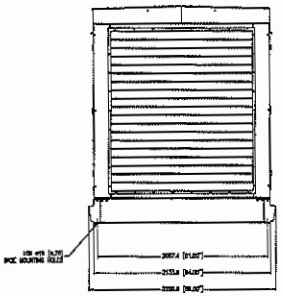




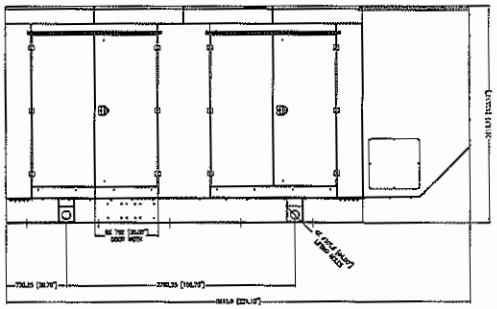
FRONT VIEW



LEFT VIEW



REAR VIEW



RIGHT VIEW

REVISION	DATE	DESCRIPTION
B	2020-04-13	UPDATED TITLE BLOCK
A	2017-10-30	CHANGED RADIATOR CORE PANEL DIMENSION (575-0801, 575-0804)

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APPLICABLE MODELS:
MTU 12V1600 DS550
MTU 12V1600 DS600

THIRD ANGLE PROJECTION

DRAWN TO SCALE
DIMENSIONS: MM [INCH]

DATE CREATED: 2016-06-10

DIMENSIONAL LAYOUT

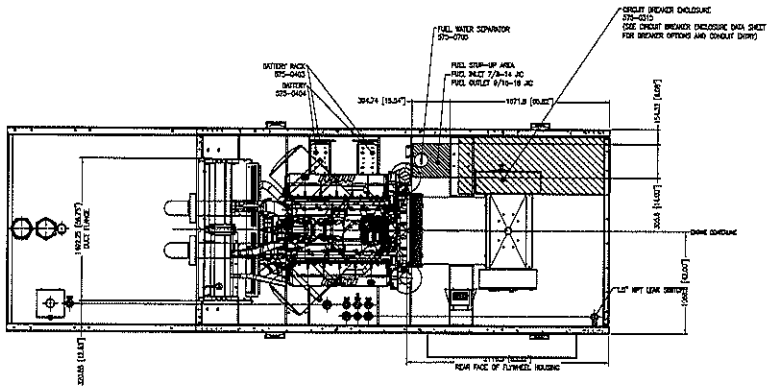
DESCRIPTION: 550-600 kW Genset Housing

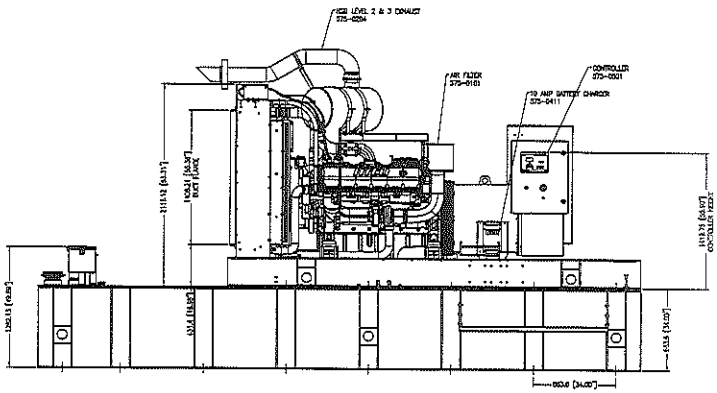
ENGINE: MTU, 12V1600

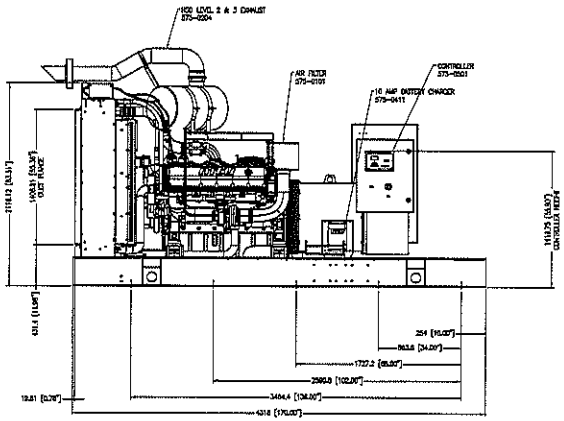
WEIGHT (MIN-MAX): 5,050-7,810 KG 13,340-17,220 LB

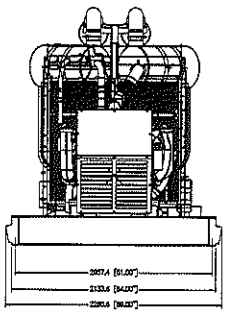
DRAWING NUMBER: XZ57500100041

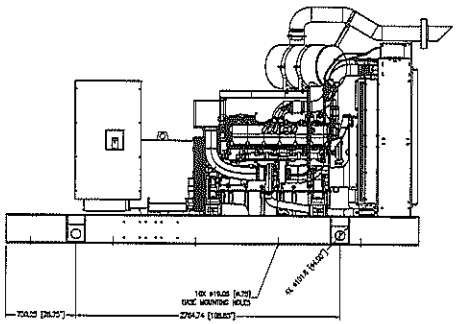
SHEET: 1 of 1











REVISION	DATE	DESCRIPTION
B	2020-04-13	UPDATED TITLE BLOCK
A	2019-01-14	UPDATED DRAWING OPTIONS 575-1002, 575-1003, 575-1004, 575-1005

A Rolls-Royce solution

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APPLICABLE MODELS:

MTU 12V1600 DS550
MTU 12V1600 DS600

THIRD ANGLE PROJECTION

DRAWN TO SCALE
DIMENSIONS: MM [INCH]

DATE CREATED: 2016-06-27

DIMENSIONAL LAYOUT

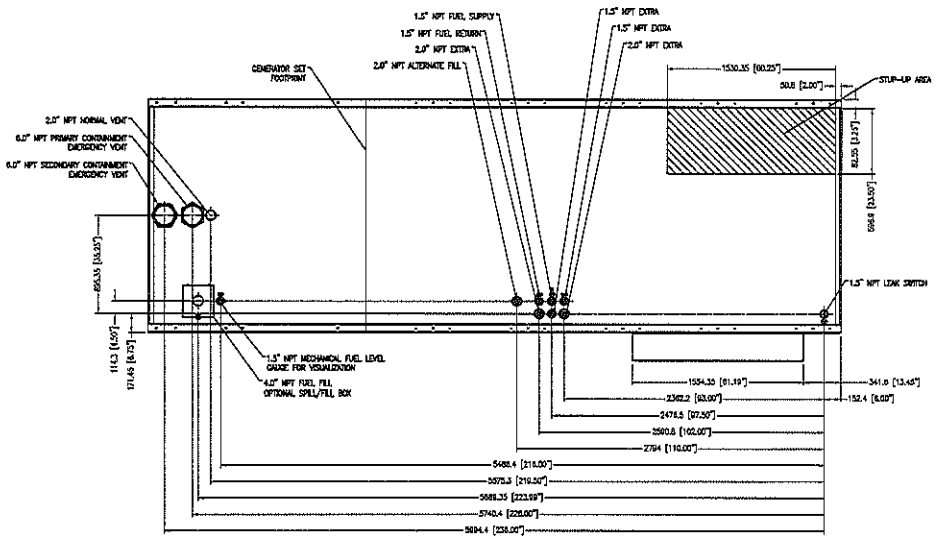
DESCRIPTION: 550-600 kW Genset, HSD Base

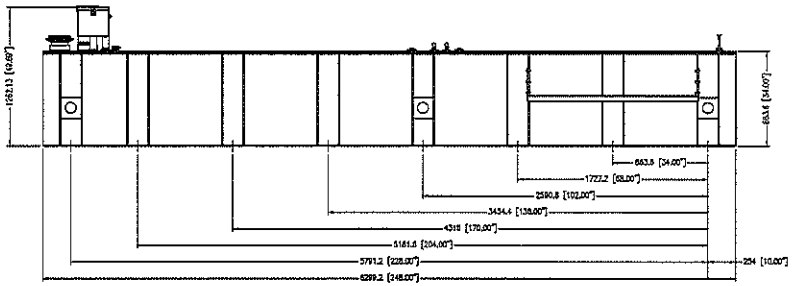
ENGINE: MTU, 12V1600

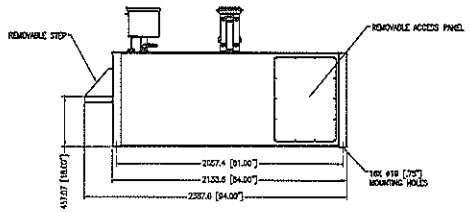
WEIGHT (MIN-MAX): 9,070-6,172 KG 11,177-13,606 LB

DRAWING NUMBER: XZ57500100040

SHEET: 1 of 2







REVISION	DATE	DESCRIPTION
A	2020-04-08	UPDATED TITLE BLOCK

ALL INDUSTRIAL PROPERTY RIGHTS RESERVED. REPRODUCTION OR USE FOR ANY OTHER PURPOSE IS PROHIBITED UNLESS OUR EXPRESS PERMISSION HAS BEEN GIVEN. ANY INFRINGEMENT RESULTS IN LIABILITY TO PAY DAMAGES.

A Rolls-Royce solution

APPLICABLE MODELS:
MTU 10V1600 450DS
MTU 10V1600 500DS
MTU 12V1600 550DS
MTU 12V1600 600DS

THIRD ANGLE PROJECTION

DRAWN TO SCALE
DIMENSIONS: MM [INCH]

DATE CREATED: 2018-02-07

DIMENSIONAL LAYOUT

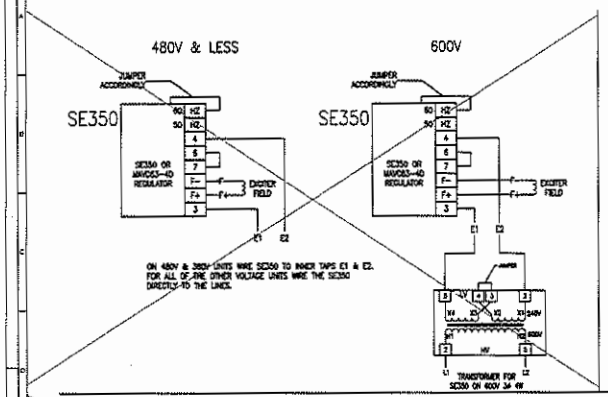
DESCRIPTION: 450-600 kW 48HR 2000 Gal RH Ext Tank

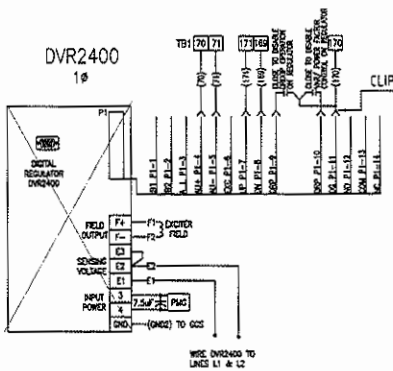
ENGINE: MTU, 10V1600/12V1600

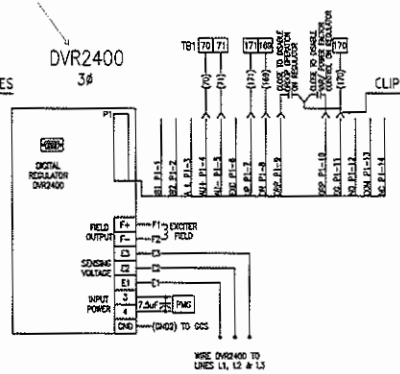
WEIGHT (MIN-MAX): 2,511 KG 5,535 LB

DRAWING NUMBER: XZ57500100052

SHEET: 11 of 23

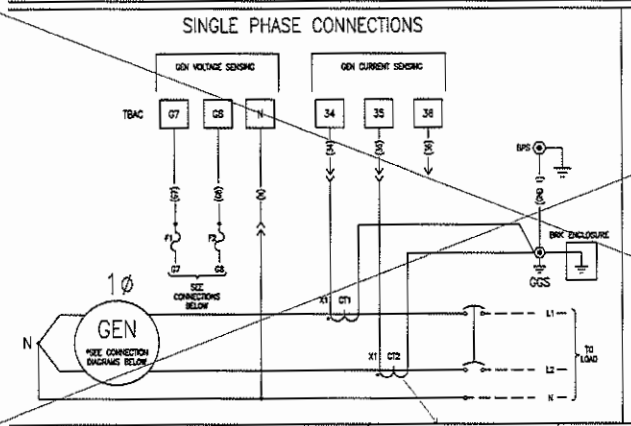


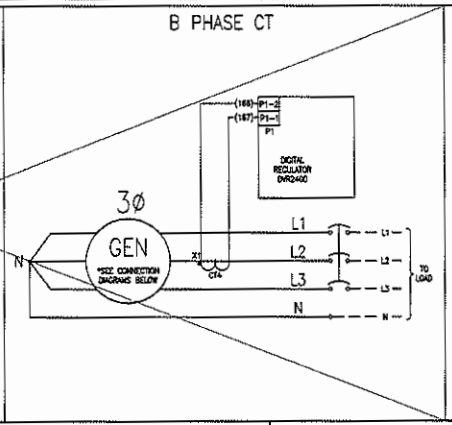


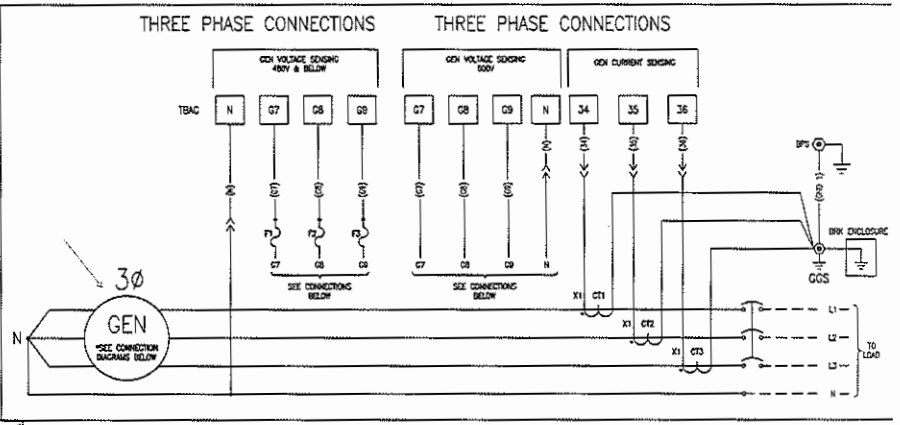


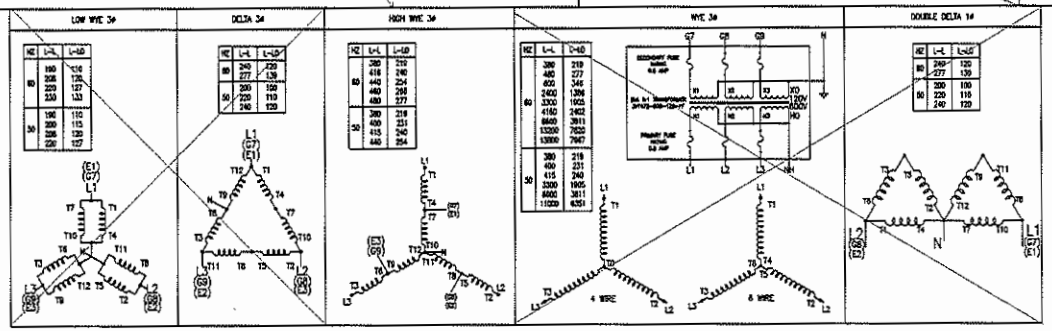
Connection List		
Wire Number	Terminal	Name
70	P1-4	AU+
71	P1-5	AU-
171	P1-7	UP
169	P1-8	DN
170	P1-11	DG

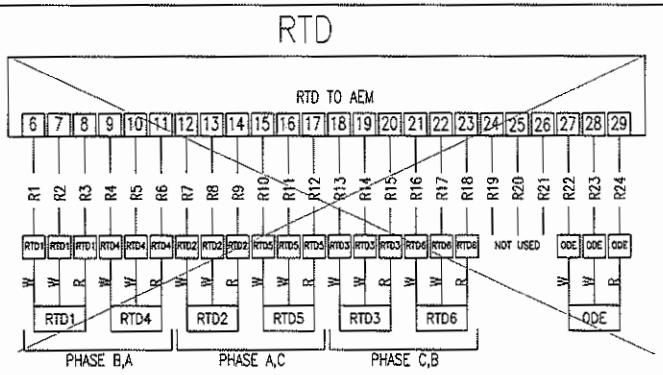
DVR2400 P1 CONNECTOR		
Terminal	Name	Description
P1-1	IB1	Generator Phase B CT - terminal 1
P1-2	IB2	Generator Phase B CT - terminal 2
P1-3	A_L	Auxiliary current loop (DVR2500 only)
P1-4	AU+	Auxiliary input positive
P1-5	AU-	Auxiliary input negative
P1-6	EXC	Excitation disable contact input (active closed)
P1-7	UP	UP contact input (active closed)
P1-8	DN	DOWN contact input (active closed)
P1-9	DRP	Droop disable contact input (active closed)
P1-10	ORP	VAR/PF mode disable (active closed)
P1-11	DG	Digital ground
P1-12	NO	Contact output normally open
P1-13	COM	Contact output common
P1-14	NC	Contact output normally closed











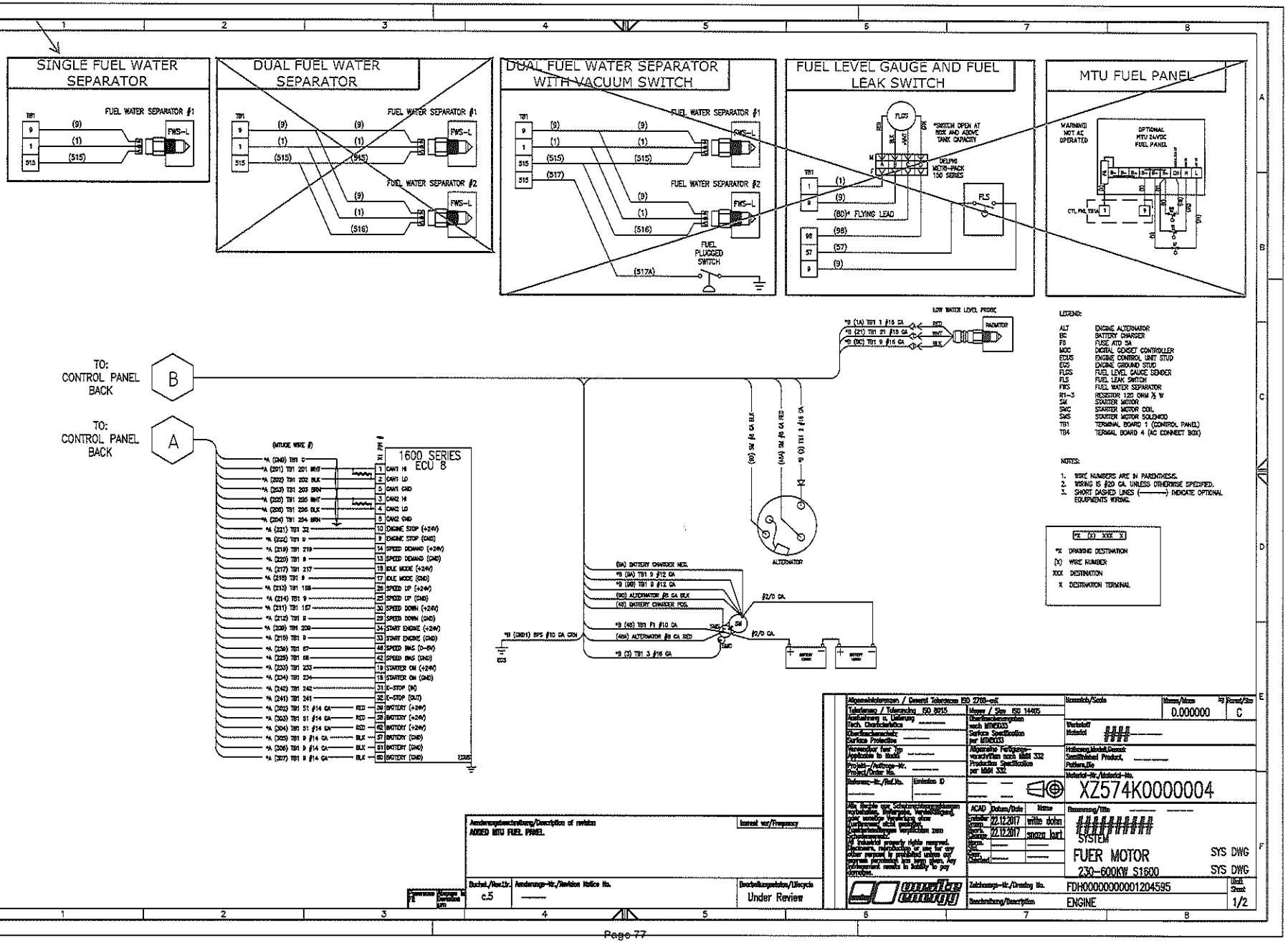
XZ574K00000011

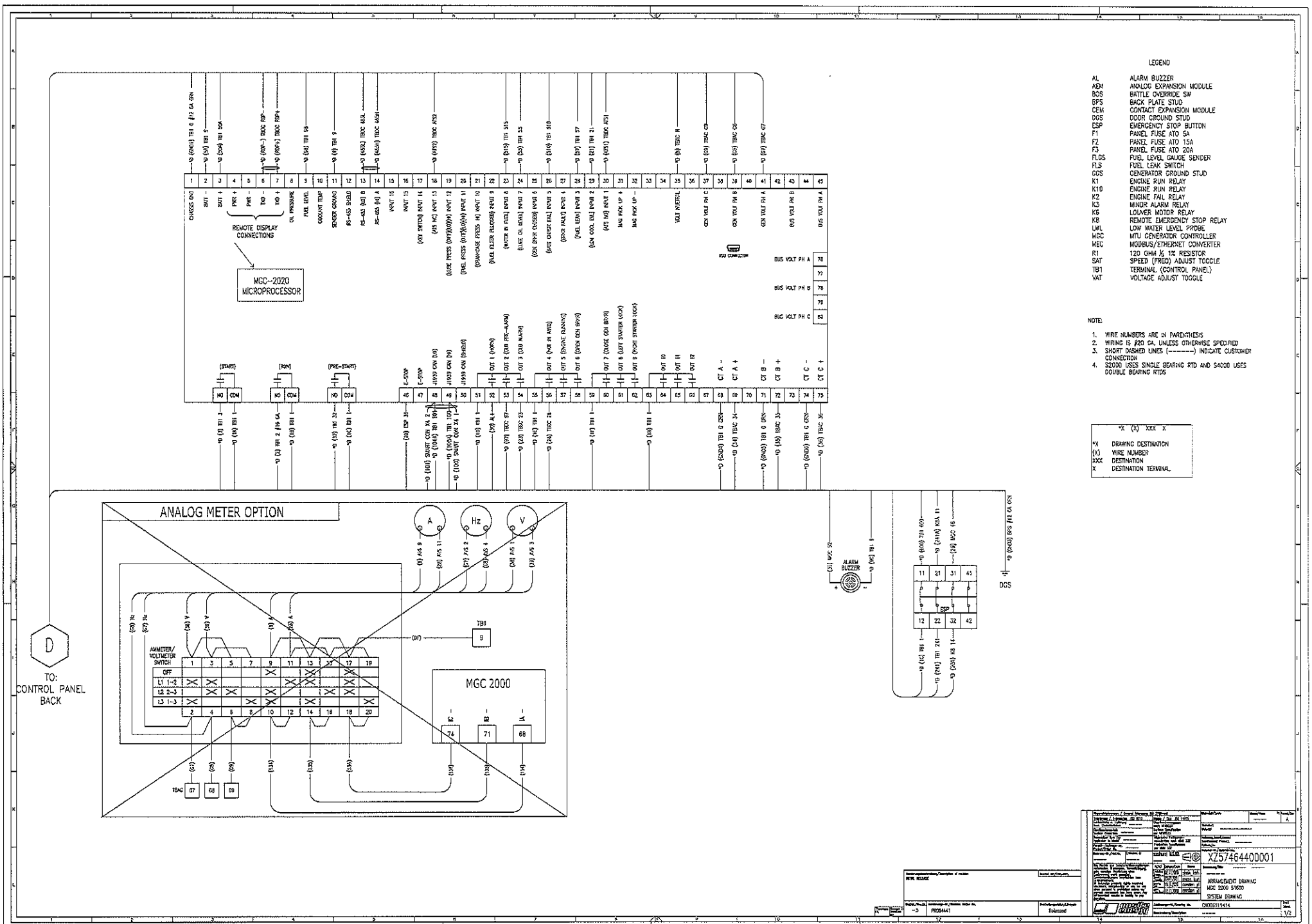
ARRANGEMENT DWG. GENERATOR S1600
FUER BAUREIHE 1600
FOR SERIES 1600

0402656329

GENERATOR ARRANGEMENT DRAWING

1/1


SINGLE FUEL WATER SEPARATOR
DUAL FUEL WATER SEPARATOR
DUAL FUEL WATER SEPARATOR WITH VACUUM SWITCH
FUEL LEVEL GAUGE AND FUEL LEAK SWITCH
MTU FUEL PANEL
FUEL WATER SEPARATOR #1
FUEL WATER SEPARATOR #2
FUEL PLUGGED SWITCH
*SWITCH OPEN AT 80% AND ABOVE TANK CAPACITY
(80)* FLYING LEAD
OPTIONAL MTU 24VDC FUEL PANEL
WARNING! NOT AC OPERATED
LOW WATER LEVEL PROBE
TO: CONTROL PANEL BACK
B
TO: CONTROL PANEL BACK
A
1600 SERIES ECU 8
ALTERNATOR
LEGEND:
ALT ENGINE ALTERNATOR
BC BATTERY CHARGER
FB FUSE ATO 5A
MDC DIGITAL SCANIA CONTROLLER
ECUS ENGINE CONTROL UNIT STUD
EGS ENGINE GROUND STUD
FLGS FUEL LEVEL GAUGE SENDER
FLS FUEL LEAK SWITCH
FWS FUEL WATER SEPARATOR
R1-3 RESISTOR 120 OHM ½ W
SM STARTER MOTOR
SMC STARTER MOTOR COIL
SMS STARTER MOTOR SOLENOID
TB1 TERMINAL BOARD 1 (CONTROL PANEL)
TB4 TERMAL BOARD 4 (AC CONNECT BOX)
NOTES:
1. WIRE NUMBERS ARE IN PARENTHESIS.
2. WIRING IS #20 GA. UNLESS OTHERWISE SPECIFIED.
3. SHORT DASHED LINES (——) INDICATE OPTIONAL EQUIPMENTS WIRING.
*X (X) XXX X
*X DRAWING DESTINATION
(X) WIRE NUMBER
XXX DESTINATION
X DESTINATION TERMINAL
ADDED MTU FUEL PANEL.
XZ574K0000004
SYSTEM
FUER MOTOR
230-600KW S1600
SYS DWG
SYS DWG
FDH00000000001204595
ENGINE
1/2
Under Review
0.000000
C



LEGEND

AL	ALARM BUZZER
AEM	ANALOG EXPANSION MODULE
BOS	BATTLE OVERRIDE SW
BPS	BACK PLATE STUD
CEM	CONTACT EXPANSION MODULE
DGS	DOOR GROUND STUD
ESP	EMERGENCY STOP BUTTON
F1	PANEL FUSE ATO 5A
F2	PANEL FUSE ATO 15A
F3	PANEL FUSE ATO 20A
FLGS	FUEL LEVEL GAUGE SENDER
FLS	FUEL LEAK SWITCH
GGS	GENERATOR GROUND STUD
K1	ENGINE RUN RELAY
K10	ENGINE RUN RELAY
K2	ENGINE FAIL RELAY
K3	MINOR ALARM RELAY
K6	LOUVER MOTOR RELAY
K8	REMOTE EMERGENCY STOP RELAY
LWL	LOW WATER LEVEL PROBE
MGC	MTU GENERATOR CONTROLLER
MEC	MODBUS/ETHERNET CONVERTER
R1	120 OHM ¼ 1% RESISTOR
SAT	SPEED (FREQ) ADJUST TOGGLE
TB1	TERMINAL (CONTROL PANEL)
VAT	VOLTAGE ADJUST TOGGLE

NOTE:

1. WIRE NUMBERS ARE IN PARENTHESIS
2. WIRING IS #20 GA, UNLESS OTHERWISE SPECIFIED
3. SHORT DASHED LINES (- - - - - - -) INDICATE CUSTOMER CONNECTION
4. S2000 USES SINGLE BEARING RTD AND S4000 USES DOUBLE BEARING RTDS

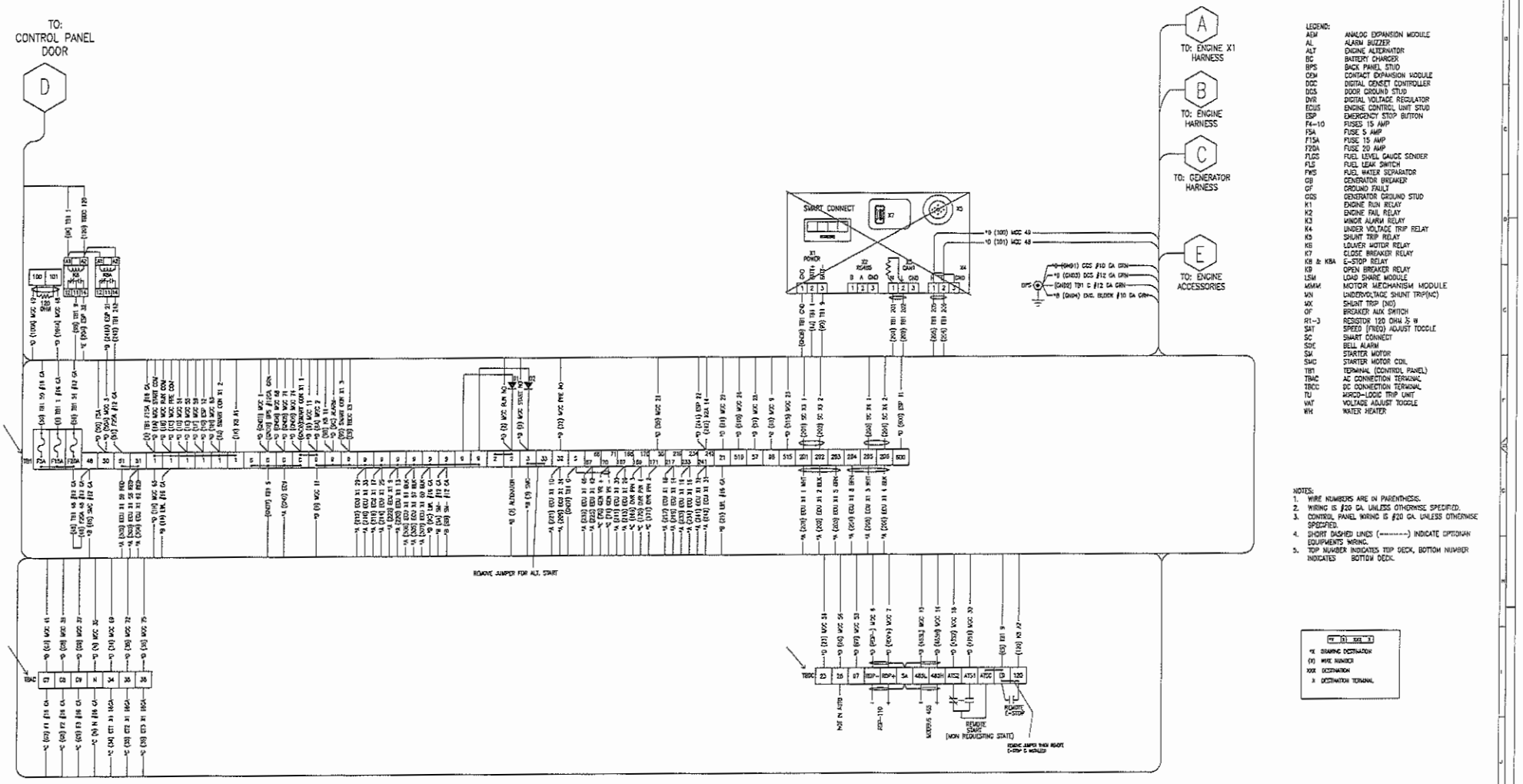
*X (X) XXX X	
*X	DRAWING DESTINATION
(X)	WIRE NUMBER
XXX	DESTINATION
X	DESTINATION TERMINAL

XZ57464400001

ARRANGEMENT DRAWING
MGC 2000 S1600
SYSTEM DRAWING

CAD0911414

1/2



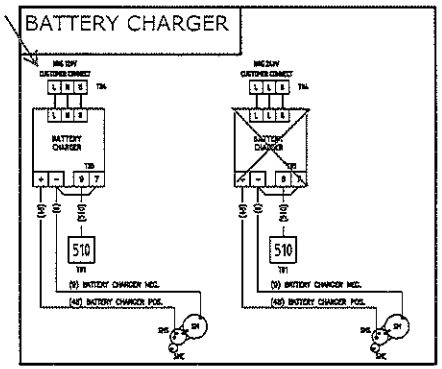
LEGEND:

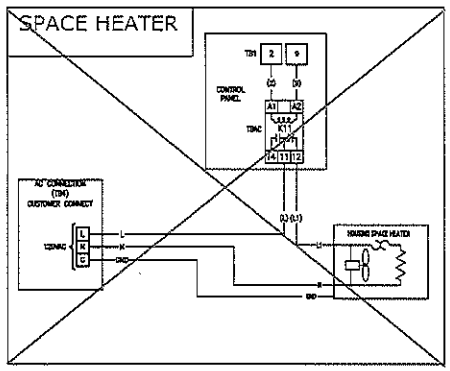
AEM	ANALOG EXPANSION MODULE
AL	ALARM BUZZER
ALT	ENGINE ALTERNATOR
BC	BATTERY CHARGER
BPS	BACK PANEL STUD
CEM	CONTACT EXPANSION MODULE
DCC	DIGITAL GENSET CONTROLLER
DGS	DOOR GROUND STUD
DVR	DIGITAL VOLTAGE REGULATOR
ECUS	ENGINE CONTROL UNIT STUD
ESP	EMERGENCY STOP BUTTON
F4-10	FUSES 15 AMP
F5A	FUSE 5 AMP
F15A	FUSE 15 AMP
F20A	FUSE 20 AMP
FLGS	FUEL LEVEL GAUGE SENDER
FLS	FUEL LEAK SWITCH
FWS	FUEL WATER SEPARATOR
GB	GENERATOR BREAKER
GF	GROUND FAULT
GGS	GENERATOR GROUND STUD
K1	ENGINE RUN RELAY
K2	ENGINE FAIL RELAY
K3	MINOR ALARM RELAY
K4	UNDER VOLTAGE TRIP RELAY
K5	SHUNT TRIP RELAY
K6	LOUVER MOTOR RELAY
K7	CLOSE BREAKER RELAY
K8 & K8A	E-STOP RELAY
K9	OPEN BREAKER RELAY
LSM	LOAD SHARE MODULE
MMM	MOTOR MECHANISM MODULE
MN	UNDERVOLTAGE SHUNT TRIP(MC)
MX	SHUNT TRIP (NO)
OF	BREAKER AUX SWITCH
R1-3	RESISTOR 120 OHM ½ W
SAT	SPEED (FREQ) ADJUST TOGGLE
SC	SMART CONNECT
SDC	BELL ALARM
SM	STARTER MOTOR
SMC	STARTER MOTOR COIL
TB1	TERMINAL (CONTROL PANEL)
TBAC	AC CONNECTION TERMINAL
TBDC	DC CONNECTION TERMINAL
TU	MICRO-LOGIC TRIP UNIT
VAT	VOLTAGE ADJUST TOGGLE
WH	WATER HEATER

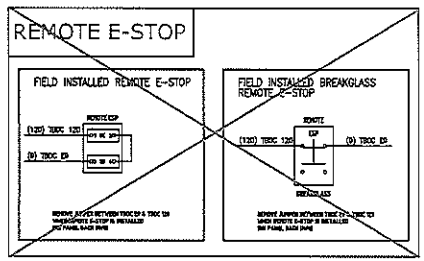
NOTES:
1. WIRE NUMBERS ARE IN PARENTHESIS.
2. WIRING IS #20 GA. UNLESS OTHERWISE SPECIFIED.
3. CONTROL PANEL WIRING IS #20 GA. UNLESS OTHERWISE SPECIFIED.
4. SHORT DASHED LINES (- - - - - -) INDICATE OPTIONAL EQUIPMENTS WIRING.
5. TOP NUMBER INDICATES TOP DECK, BOTTOM NUMBER INDICATES BOTTOM DECK.

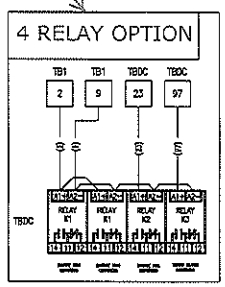
XX	DRAWING DESTINATION
(X)	WIRE NUMBER
XXX	DESTINATION
X	DESTINATION TERMINAL

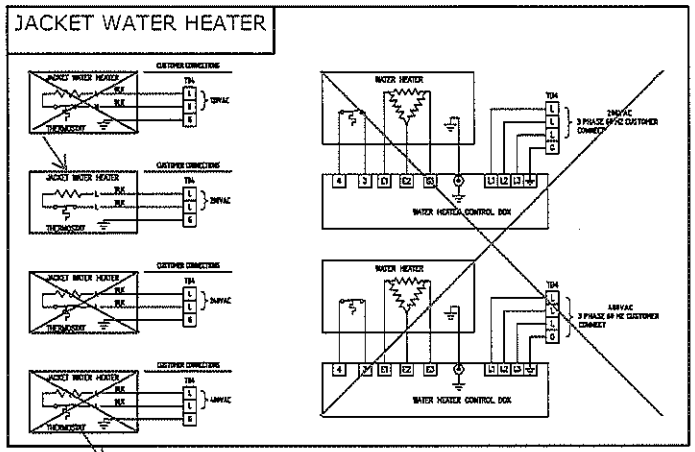
Material:	
Weight:	
Scale:	
Drawing No.:	X257464400001
Title:	ARRANGEMENT DRAWING MDG 2000 S1600
	SYSTEM DRAWING
Drawing No.:	CAD00191477
Sheet:	2/2

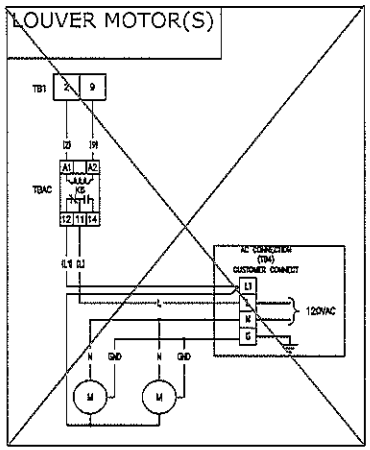


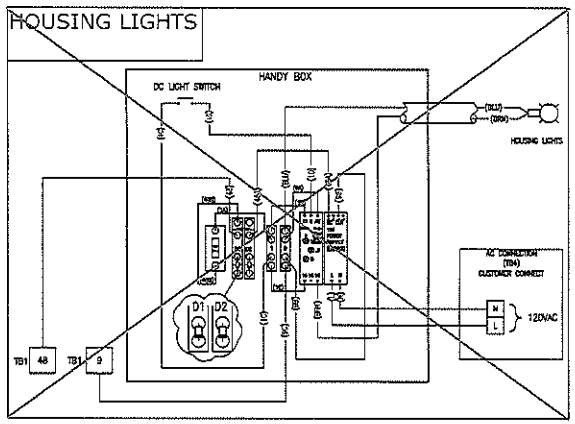


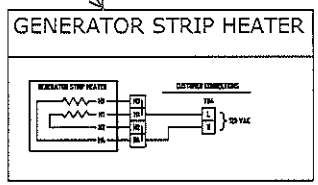


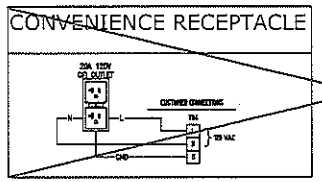


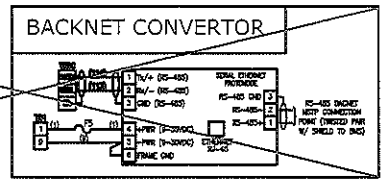












LEGEND:

D1	DIODE 1
D2	DIODE 2
ESP	EMERGENCY STOP PUSHBUTTON
F4	FUSE ATO 3A
F5	FUSE ATO 3A
SM	STARTER MOTOR
SMC	STARTER MOTOR COIL
SMS	STARTER MOTOR SOLENOID
TBAC	TERMINAL BLOCK AC
TBDC	TERMINAL BLOCK DC
TB1	TERMINAL BLOCK 1
TB4	TERMINAL BLOCK 4

Revisions			
Rev.	Description	Date	Name
A	ADDED WIRE NUMBERS FOR 100'S AT NEW TERMINALS	31.07.2019	willie dohn

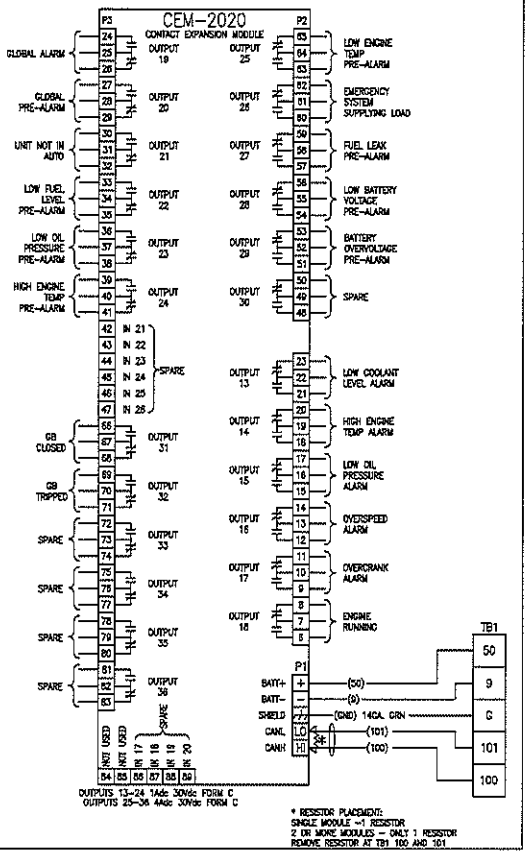
Bauteil./Rev.Ltr.	Änderungs-Nr./Revision Notice No.	Bearbeitungsstation/Lifecycle	
d.3	———	In Work	

Allgemeintoleranzen / General Tolerances ISO 2768-mK		Maßstab/Scale	Masse/Mass kg 0.000000
Toleranzen / Tolerancing ISO 8015	Maße / Size ISO 14405		Format/Size C
Ausführung u. Lieferung / Tech. Characteristics	Oberflächenangaben nach MTM0033	Werkstoff / Material	———
Oberflächenschutz / Surface Protection	Surface Specification per MTM0033		
Verwendbar für/ typ / Applicable to Model	Allgemeine Fertigungsvorschriften nach MBN 332 / Production Specification per MBN 332	Halbzeug,Modell,Gesamt / Semifinished Product, Problem,Bin	———
Projekt-/Auftrags-Nr. / Project/Order No.		Material-Nr./Material-No.	XZ574K0000009
Referenz-Nr./Ref.No.	Emission ID		

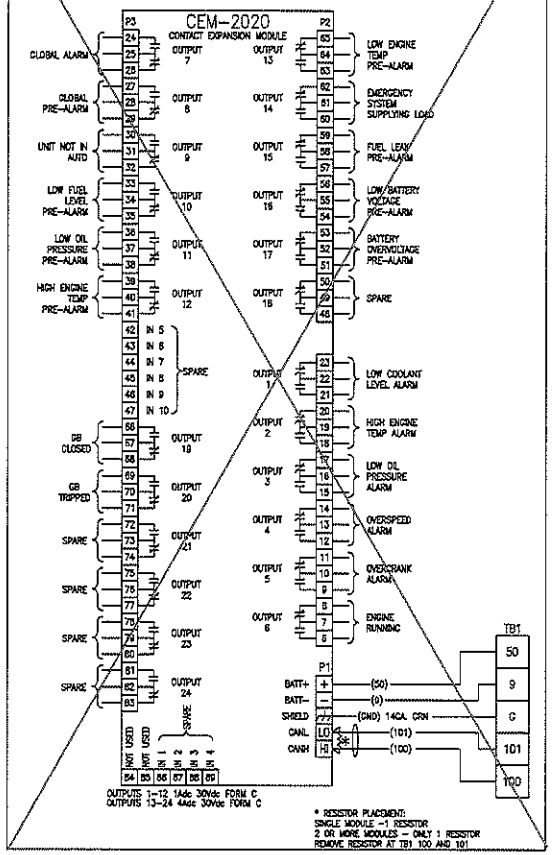
ACAD	Datum/Date	Name	Benennung/Title
Erstellt / Created	31.07.2019	willie dohn	SYSTEM
Geprüft / Checked	31.07.2019	willie dohn	WAHLW.AUSFUEHRUNGEN SYSTEM DRAWING
Norm / Standard	———	———	230-600KW S1600 SYSTEM DRAWING
Freigabe / Released	———	———	

Zeichnungs-Nr./Drawing No.	FDH000000000001204622	Blatt / Sheet	
Beschreibung/Description	OPTIONS SHEET		1/2

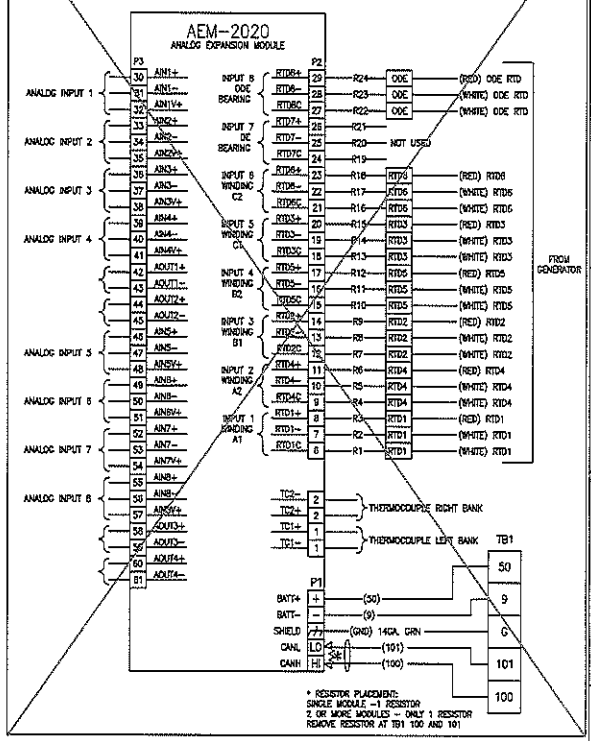
CEM OPTION 2000



CEM OPTION 3000



AEM OPTION



Änderungsbeschreibung/Description of revision

ADDED WIRE NUMBERS FOR RTD'S AT AEM TERMINALS

kommt vor/Frequency

Bucket./Rev.Ltr.: d.3

Änderungs-Nr./Revision Notice No.: ------

Bearbeitungsstation/Lifecycle: In Work

Maßstab/Scale: 0.000000

Masse/Mass: 0.000000

Rg: C

Format/Size: C

Werkstoff/Material: ------

Norm/Standard: Semifinished Product, ------, Pattern_Ute

Material-Nr./Material-No.: XZ574K0000009

ACAD: Datum/Date: Name

Gezeichnet/Drawn: 31.07.2019 witte dohn

Geprüft/Checked: 31.07.2019 witte dohn

Norm: ------

Gen. Checked: ------

Benennung/Title: SYSTEM WAHLW.AUSFUEHRUNGEN 230-600KW S1600

SYSTEM DRAWING

SYSTEM DRAWING

Zeichnungs-Nr./Drawing No.: FDH000000000001204627

Blatt/Sheet: 2/2

Benennung/Description: OPTIONS SHEET

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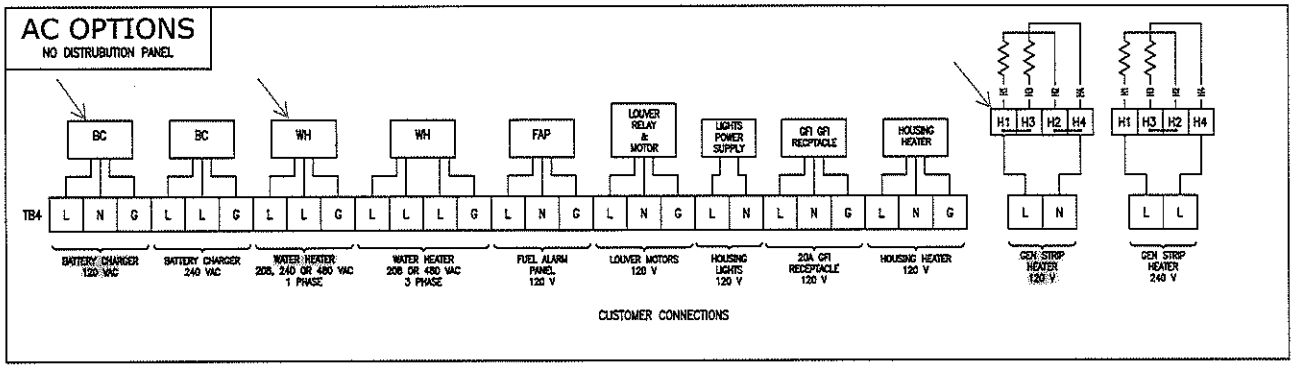
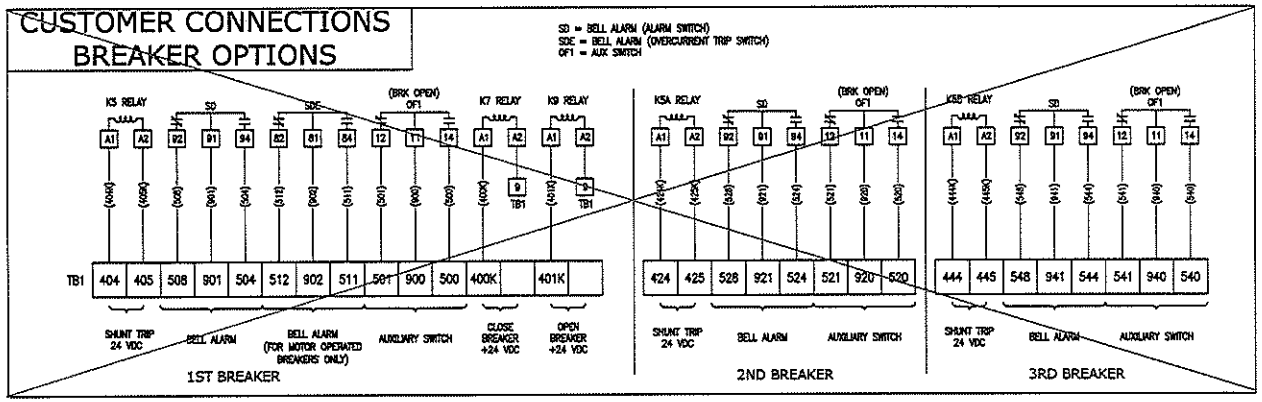


NOTES:

1. WIRE NUMBERS ARE IN PARENTHESIS.
2. SHORT DASHED LINES (-------) INDICATE CUSTOMER CONNECTION OR OPTIONAL EQUIPMENT.



Änderungsbeschreibung/Description of revision		Ersetzt vor/Replaces	
RESTORE LAYERS			
Bearbeitungsstatus/Lifecycle	Änderungs-Nr./Revision Notice No.	Bearbeitungsstand/Lifecycle	
b.2	———	Under Review	

Maßstab/Scale	Masse/Mass	kg	Format/Size
	0.000000		C
Werkstoff/Material	———		
Material-Nr./Material-No.	XZ574K0000002		
ACAD	Datum/Date	Name	
Ersteller	26.09.2017	witte dohn	
Geprüft	26.09.2017	witte dohn	
Norm	———	———	
Qual.	———	———	
Appr.	———	———	
Freigabe	———	———	
Bezeichnung/Title	SYSTEM F.KUNDENANSCHLUSS 230-600KW S1600		SYSTEM DRAWING
Zeichnungs-Nr./Drawing No.	FDH000000000001204593		Blatt/Sheet 1/1
Benennung/Description	CUSTOMER CONNECTIONS		

Allgemeintoleranzen / General Tolerances ISO 2768-mK
Toleranzen / Tolerancing ISO 8015
Kantenbruch u. Entgratung
Tech. Charakteristika
Oberflächenschutz
Surface Protection
Normteile nach DIN
Applicable to Model
Projekt-/Auftrags-Nr.
Project/Order No.
Referenz-Nr./Ref.No.
Ersetzen ID
Gewinde / Size ISO 14405
Oberflächenspezifikation nach MDM333
Surface Specification per MDM333
Allgemeine Verfügungsvorschriften nach MAN 332
Production Specification per MAN 332
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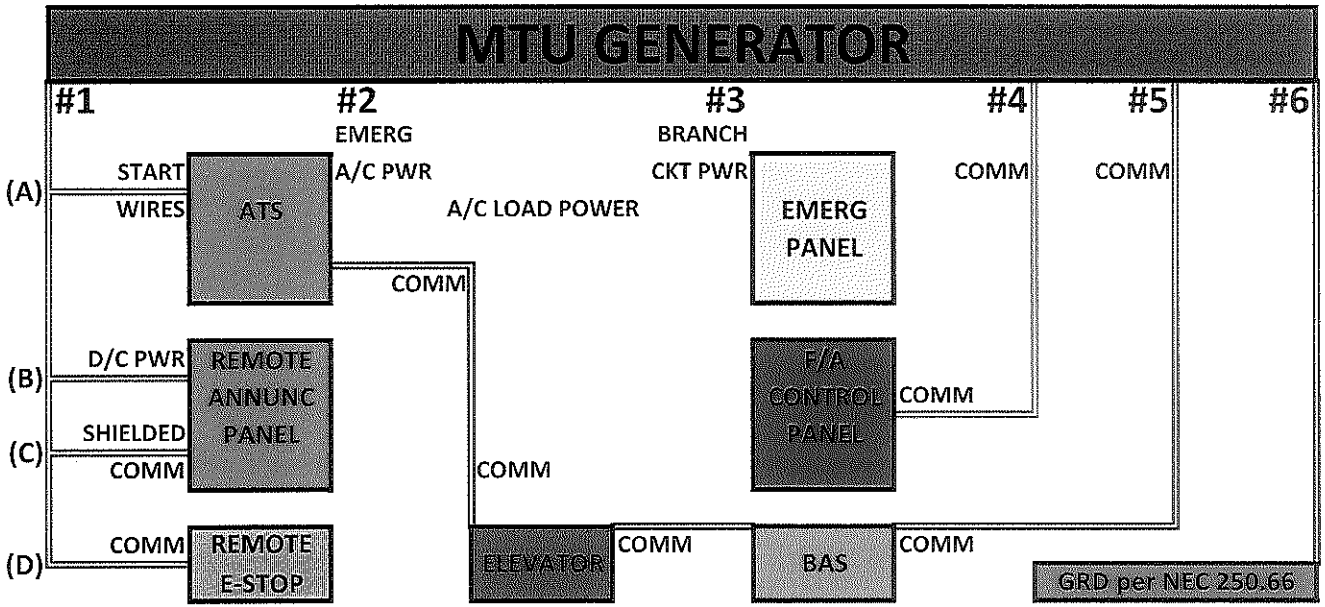
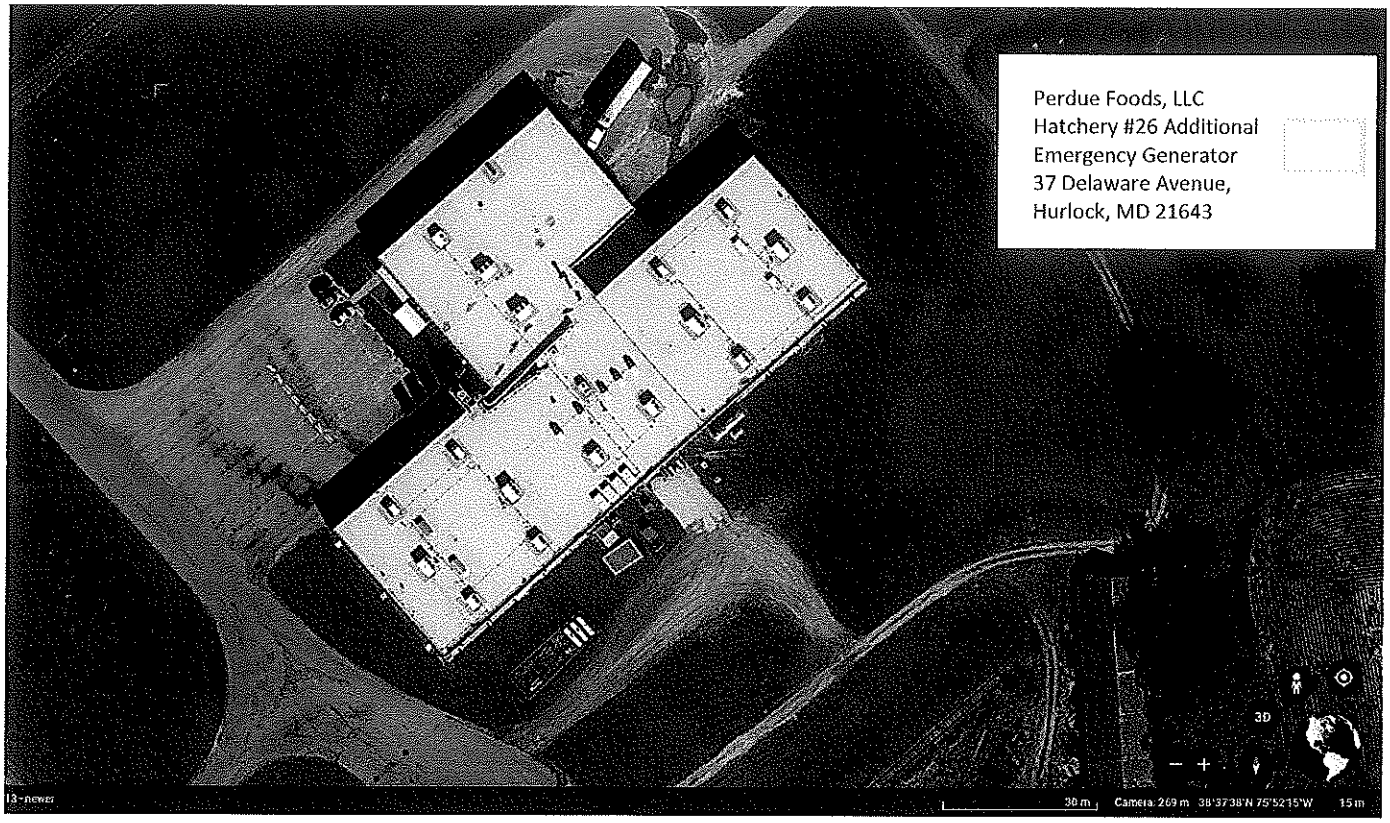
CONDUIT: **#1** - **(A)** Controller to ATS Start Wires: (2) - #14 THHN Stranded
(B) Controller to Remote Annunciator Power: D/C - (2) - #14 THHN Stranded
(C) Controller to Remote Annunciator Communication: (2 Cond) #16 Stranded Twisted Shielded Pair
(D) Controller to Remote E-Stop: (2) - #14 THHN Stranded
#2 - Emergency A/C Primary Power
#3 - Emergency A/C Branch Power for: Battery Charger, Block Heater, etc.
#4 - Generator Controller to Fire Alarm Control Panel
#5 - Generator Controller to Building Automation System, Elevator
#6 - Generator Grounding per NEC 250.66

WIRE / CABLE MUST BE STRANDED & 1 PHASE 120 VOLT BRANCH CIRCUITS MUST HAVE SEPARATE NEUTRALS



THIS BASIC LINE DIAGRAM IS FOR FOR REFERENCE ONLY
CONTACT YOUR CURTIS REPRESENTATIVE FOR ADDITIONAL INFORMATION


Perdue Foods, LLC
Hatchery #26 Additional
Emergency Generator
37 Delaware Avenue,
Hurlock, MD 21643
3D
30 m
Camera: 269 m 38°37'38"N 75°52'15"W
15 m

SUBJECT PTE Calculations - Air Toxics Summary
PROJECT Perdue Foods, LLC. - Hurlock Complex
Hurlock, MD

Uncontrolled Facility Emissions

Source Location	Source Description	Chromium		Copper		Iodine		Iron		Manganese		Selenium		Zinc	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Feedmill	NG Cleaver Brooks Boiler	1.95E-05	0.17	1.19E-05	0.10	--	--	--	--	5.30E-06	0.05	3.35E-07	2.93E-03	4.04E-04	3.54
Hatchery	NG Lochinvar Boiler[1]	8.60E-07	0.01	5.22E-07	4.57E-03	--	--	--	--	2.33E-07	0.00	1.47E-08	1.29E-04	1.78E-05	1.56E-01
Hatchery	NG Raypack Boiler	2.80E-06	0.02	1.70E-06	0.01	--	--	--	--	7.60E-07	0.01	4.80E-08	4.20E-04	5.80E-05	0.51
Hatchery	NG Laars Boiler	1.60E-06	0.01	9.71E-07	0.01	--	--	--	--	4.34E-07	3.80E-03	2.74E-08	2.40E-04	3.31E-05	0.29
Hatchery	Diesel Engine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator (Inside)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator (Outside)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Pile Emergency Generator[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Berico NG Burner	5.07E-05	0.44	3.08E-05	0.27	--	--	--	--	1.38E-05	0.12	8.69E-07	0.01	1.05E-03	9.19
Grain	Brock NG Burner	8.13E-05	0.71	4.94E-05	0.43	--	--	--	--	2.21E-05	0.19	1.39E-06	0.01	1.68E-03	14.76
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	8.10E-07	0.01	2.02E-05	0.18	9.10E-06	0.08	1.62E-04	1.42	4.06E-04	3.56	1.21E-06	0.01	2.43E-04	2.12
Feedmill	Mixer	8.09E-07	0.01	2.02E-05	0.18	9.09E-06	0.08	1.61E-04	1.41	4.06E-04	3.56	1.21E-06	0.01	2.42E-04	2.12
Feedmill	Hammermills (1-3)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	4.77E-05	0.42	1.19E-03	10.45	5.36E-04	4.70	9.53E-03	83.47	2.40E-02	209.84	7.15E-05	0.63	1.43E-02	125.28
Feedmill	Storage (bin vents)	6.63E-07	0.01	1.66E-05	0.15	7.45E-06	0.07	1.32E-04	1.16	3.33E-04	2.91	9.93E-07	0.01	1.99E-04	1.74
Feedmill	Mechanical Finished Feed Loadout [1]	4.38E-08	3.83E-04	1.09E-06	9.57E-03	4.92E-07	4.31E-03	8.73E-06	7.65E-02	2.20E-05	1.92E-01	6.55E-08	5.74E-04	1.31E-05	0.11
Feedmill	Headhouse & Handling (Feedmill)	2.70E-07	2.36E-03	6.73E-06	5.90E-02	3.03E-06	2.65E-02	5.38E-05	4.71E-01	1.35E-04	1.19E+00	4.04E-07	3.54E-03	8.08E-05	0.71
Grain	Receiving Operations (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Storage	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Facility Uncontrolled Emissions		**2.07E-04**	**1.81**	**1.35E-03**	**11.85**	**5.65E-04**	**4.95**	**0.01**	**88.00**	**0.03**	**221.62**	**7.81E-05**	**0.68**	**0.02**	**160.54**

Controlled Facility Emissions

Source Location	Source Description	Chromium		Copper		Iodine		Iron		Manganese		Selenium		Zinc	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Feedmill	NG Cleaver Brooks Boiler	1.95E-05	0.17	1.19E-05	0.10	--	--	--	--	5.30E-06	0.05	3.35E-07	2.93E-03	4.04E-04	3.54
Hatchery	NG Lochinvar Boiler[1]	8.60E-07	0.01	5.22E-07	4.57E-03	--	--	--	--	2.33E-07	2.04E-03	1.47E-08	1.29E-04	1.78E-05	1.56E-01
Hatchery	NG Raypack Boiler	2.80E-06	0.02	1.70E-06	0.01	--	--	--	--	7.60E-07	0.01	4.80E-08	4.20E-04	5.80E-05	0.51
Hatchery	NG Laars Boiler	1.60E-06	0.01	9.71E-07	0.01	--	--	--	--	4.34E-07	3.80E-03	2.74E-08	2.40E-04	3.31E-05	0.29
Hatchery	Diesel Engine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator (Inside)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hatchery	Diesel Emergency Generator (Outside)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Pile Emergency Generator[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Berico NG Burner	5.07E-05	0.44	3.08E-05	0.27	--	--	--	--	1.38E-05	0.12	8.69E-07	0.01	1.05E-03	9.19
Grain	Brock NG Burner	8.13E-05	0.71	4.94E-05	0.43	--	--	--	--	2.21E-05	0.19	1.39E-06	0.01	1.68E-03	14.76
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	8.10E-07	0.01	2.02E-05	0.18	9.10E-06	0.08	1.62E-04	1.42	4.06E-04	3.56	1.21E-06	0.01	2.43E-04	2.12
Feedmill	Mixer	1.62E-07	1.42E-03	4.04E-06	3.54E-02	1.82E-06	1.59E-02	3.23E-05	2.83E-01	8.12E-05	7.11E-01	2.42E-07	2.12E-03	4.85E-05	0.42
Feedmill	Hammermills (1-3)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	4.77E-06	0.04	1.19E-04	1.04	5.36E-05	0.47	9.53E-04	8.35	2.40E-03	20.98	7.15E-06	0.06	1.43E-03	12.53
Feedmill	Storage (bin vents)	6.63E-07	0.01	1.66E-05	0.15	7.45E-06	0.07	1.32E-04	1.16	3.33E-04	2.91	9.93E-07	0.01	1.99E-04	1.74
Feedmill	Mechanical Finished Feed Loadout [1]	2.19E-08	1.92E-04	5.47E-07	4.79E-03	2.46E-07	2.15E-03	4.37E-06	3.83E-02	1.10E-05	9.62E-02	3.28E-08	2.87E-04	6.55E-06	0.06
Feedmill	Headhouse & Handling (Feedmill)	5.39E-08	4.72E-04	1.35E-06	1.18E-02	6.06E-07	5.31E-03	1.08E-05	9.43E-02	2.71E-05	2.37E-01	8.08E-08	7.08E-04	1.62E-05	0.14
Grain	Receiving Operations (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Grain Stroage	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Facility Controlled Emissions		**1.63E-04**	**1.43**	**2.57E-04**	**2.25**	**7.28E-05**	**0.64**	**1.29E-03**	**11.34**	**3.30E-03**	**28.88**	**1.24E-05**	**0.11**	**5.19E-03**	**45.47**

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Site Information — PROJECT NO. 343-365

PROJECT Perdue Foods, LLC. - Hurlock Complex — SHEET 1

Hurlock, MD

Emission Unit Description		Unit Design Capacity		Max Annual Throughput (tons/yr)	Control Device	Installation Year
Facility Roadways		-		-	-	-
Hatchery						
Lochnivar Boiler[1]		0.65	MMBtu/hr	-	-	2007
Raypack Boiler		2.10	MMBtu/hr	-	-	2006
Laars Boiler		1.20	MMBtu/hr	-	-	2007
Diesel Engine		787	hp	-	-	Temporary (Not on Site)
Diesel Emergency Generator (Inside)		500	kW	-	-	1979
Diesel Emergency Generator (Outside)		500	kW	-	-	2022
Diesel Emergency Generator - 2 (Inside)[2]		260	kW	-	-	1979
Feedmill						
Cleaver Brooks Boiler		14.65	MMBtu/hr	-	-	1979
Receiving	Truck Receiving Pit #2 - Feed Ingredients	58	tons/hr	505,665	BH-2	1979
	Rail Receiving Pit	2	tons/hr	18,000	Proposed Vortex Spout	-
	Salt Pneumatic Line	0.2	tons/hr	1,500	BH-5	1987
	Methionine Pneumatic Line				BH-6	1997
Hammermills	Hammermill 1	60	tons/hr	525,165	BH-4	1979
	Hammermill 2				BH-4	1979
	Hammermill 3				BH-4	1994
Storage (bin vents)	Bulk Bins (23 bins)	60	tons/hr	525,165	-	1979
	Micro Bins (16 bins)	0.05	tons/hr	435	-	-
	Storage Tank G2	60	tons/hr	525,165	-	1979
	Storage Tank G3				-	1979
	Storage Tank G4				-	1979
	Finished Feed Bins (10 bins)	60	tons/hr	525,600	-	-
Feed Additives (stored in bags)		0.05	tons/hr	435	-	-
Mixer		60	tons/hr	525,600	Enclosed	-
Pellet Mill - Pellet Cooling (2 units)		30	tons/hr/unit	525,600	Cyclones 1,2,3,4	1979
Headhouse & Handling (Feedmill)		180	tons/hr	1,576,800	Enclosed	1979
Mechanical Finished Feed Loadout 1		60	tons/hr	525,600	Dust Sock	1979
Grain						
Grain Pile Emergency Generator[2]		110	kW	-	-	-
Receiving	Truck Receiving Pit #1 - Grain	12	tons/hr	105,000	BH-1	1979
	Truck Receiving Pit #3 - Grain				BH-3	1979
Grain Drying	Berico Grain Dryer	12	tons/hr	105,000	Walls/Mesh Screen	1993
	Brock Grain Dryer					2014
Berico Burner		38.00	MMBtu/hr	-	-	1993
Brock Burner		61.00	MMBtu/hr	-	-	2014
Storage	Temporary Outdoor Grain Storage #1	6	tons/hr	52,500	-	2005
	Temporary Outdoor Grain Storage #2				-	2010
	Wet Grain Storage Bins #1	12	tons/hr	105,000	-	2014
	Wet Grain Storage Bins #2				-	2014
	Wet Grain Storage Bins #3				-	2014
	Wet Grain Storage Bins #4				-	1979
	Grain Storage Tank (G1)				-	1979
	Grain Storage Tank 6				-	1979
	Grain Storage Tank 7				-	1979
	Grain Storage Tank 8				-	1979
	Grain Storage Tank 9				-	1979
	Grain Storage Tank 10				-	1979
Headhouse & Handling (Grain)		36	tons/hr	315,000	Enclosed	1979
Loadout	Mechanical Grain Loadout 3 (Rail)	12	tons/hr	105,000	Proposed Vortex Spout	-
	Mechanical Grain Loadout 2 (Tank 10)	12	tons/hr		Dust Sock	1979
	Tank 7 Loadout				Dust Sock	1979

[1] Exempt per The Code of Maryland Regulations (COMAR) 26.11.02.10.C.

[2] Exempt per The Code of Maryland Regulations (COMAR) 26.11.02.10.E.

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Summary
PROJECT Perdue Foods, LLC. - Hurlock Complex
Hurlock, MD

PROJECT NO. 343-365
SHEET 2

Uncontrolled Facility Emissions

Source Location	Source Description	Nitrogen Oxides	Carbon Monoxide	Sulfur Dioxide	VOC	PM	PM_{10}	$PM_{2.5}$	n-Hexane	Chromium	Manganese	Total HAPs	Methane	Nitrous Oxide	Carbon Dioxide	CO_2e
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Feedmill	NG Cleaver Brooks Boiler	6.11	5.13	0.04	0.34	0.46	0.46	0.46	0.11	0.00	0.00	0.12	0.14	0.13	7,330.87	7,374.43
Hatchery	NG Lochinvar Boiler[1]	0.27	0.23	0.00	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.01	322.87	324.79
Hatchery	NG Raypack Boiler	0.88	0.74	0.01	0.05	0.07	0.07	0.07	0.02	0.00	0.00	0.02	0.02	0.02	1,051.20	1,057.45
Hatchery	NG Laars Boiler	0.50	0.42	0.00	0.03	0.04	0.04	0.04	0.01	0.00	0.00	0.01	0.01	0.01	600.69	604.26
Hatchery	Diesel Engine	4.72	1.08	0.00	0.13	0.10	0.08	0.08	--	--	--	0.00	0.01	0.00	227.25	228.08
Hatchery	Diesel Emergency Generator (Inside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	2.70	0.59	0.18	0.26	0.19	0.19	0.19	--	--	--	0.00	0.00	0.00	100.07	100.39
Hatchery	Diesel Emergency Generator (Outside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Grain	Grain Pile Emergency Generator[1]	1.14	0.25	0.07	0.11	0.08	0.08	0.08	--	--	--	0.00	0.00	0.00	42.34	42.47
Grain	Berico NG Burner	15.85	13.32	0.10	0.87	1.20	1.20	1.20	0.29	0.00	0.00	0.30	0.36	0.35	19,021.71	19,134.75
Grain	Brock NG Burner	25.45	21.37	0.15	1.40	1.93	1.93	1.93	0.46	0.00	0.00	0.48	0.59	0.56	30,534.86	30,716.31
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	4.46	0.66	0.11	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	--	--	--	--	0.01	0.01	0.00	--	3.55E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Mixer	--	--	--	--	16.03	8.94	1.52	--	3.54E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Hammermills (1-3)	--	--	--	--	315.10	78.77	13.39	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	--	--	--	--	946.08	236.52	40.21	--	2.09E-04	1.05E-01	1.05E-01	--	--	--	--
Feedmill	Storage (bin vents)	--	--	--	--	19.70	4.97	0.87	--	2.90E-06	1.46E-03	1.46E-03	--	--	--	--
Feedmill	Mechanical Finished Feed Loadout [1]	--	--	--	--	0.87	0.21	0.04	--	1.92E-07	9.62E-05	9.64E-05	--	--	--	--
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	48.09	26.81	4.57	--	1.18E-06	5.93E-04	5.94E-04	--	--	--	--
Grain	Receiving Operations (Grain)	--	--	--	--	9.45	3.10	0.53	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	11.55	2.89	0.49	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	9.13	2.28	0.39	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	4.52	1.52	0.26	--	--	--	--	--	--	--	--
Grain	Grain Storage	--	--	--	--	10.44	2.61	0.45	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	12.81	7.14	1.22	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	0.82	2.28	0.25	--	--	--	--	--	--	--	--
Total Facility Uncontrolled Emissions		**65.67**	**44.97**	**0.55**	**3.40**	**1,413.32**	**382.91**	**68.50**	**0.88**	**0.001**	**0.11**	**1.05**	**1.17**	**1.09**	**59,619.06**	**59,971.57**

Controlled Facility Emissions

Source Location	Source Description	Nitrogen Oxides	Carbon Monoxide	Sulfur Dioxide	VOC	PM	PM_{10}	$PM_{2.5}$	n-Hexane	Chromium	Manganese	Total HAPs	Methane	Nitrous Oxide	Carbon Dioxide	CO_2e
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Feedmill	NG Cleaver Brooks Boiler	6.11	5.13	0.04	0.34	0.46	0.46	0.46	0.11	0.00	0.00	0.12	0.14	0.13	7,330.87	7,374.43
Hatchery	NG Lochinvar Boiler[1]	0.27	0.23	0.00	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.01	322.87	324.79
Hatchery	NG Raypack Boiler	0.88	0.74	0.01	0.05	0.07	0.07	0.07	0.02	0.00	0.00	0.02	0.02	0.02	1,051.20	1,057.45
Hatchery	NG Laars Boiler	0.50	0.42	0.00	0.03	0.04	0.04	0.04	0.01	0.00	0.00	0.01	0.01	0.01	600.69	604.26
Hatchery	Diesel Engine	4.72	1.08	0.00	0.13	0.10	0.08	0.08	--	--	--	0.00	0.01	0.00	227.25	228.08
Hatchery	Diesel Emergency Generator (Inside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	2.70	0.59	0.18	0.26	0.19	0.19	0.19	--	--	--	0.00	0.00	0.00	100.07	100.39
Hatchery	Diesel Emergency Generator (Outside)	4.02	0.92	0.00	0.11	0.08	0.07	0.07	--	--	--	0.00	0.01	0.00	193.61	194.32
Grain	Grain Pile Emergency Generator[1]	1.14	0.25	0.07	0.11	0.08	0.08	0.08	--	--	--	0.00	0.00	0.00	42.34	42.47
Grain	Berico NG Burner	15.85	13.32	0.10	0.87	1.20	1.20	1.20	0.29	0.00	0.00	0.30	0.36	0.35	19,021.71	19,134.75
Grain	Brock NG Burner	25.45	21.37	0.15	1.40	1.93	1.93	1.93	0.46	0.00	0.00	0.48	0.59	0.56	30,534.86	30,716.31
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	0.04	0.01	0.00	--	--	--	--	--	--	--	--
Feedmill	Trace Additives	--	--	--	--	0.01	0.01	0.00	--	3.55E-06	1.78E-03	1.78E-03	--	--	--	--
Feedmill	Mixer	--	--	--	--	3.21	1.79	0.30	--	7.08E-07	3.56E-04	3.56E-04	--	--	--	--
Feedmill	Hammermills (1-3)	--	--	--	--	3.15	0.79	0.13	--	--	--	--	--	--	--	--
Feedmill	Pellet Mill (2 units)	--	--	--	--	94.61	23.65	4.02	--	2.09E-05	1.05E-02	1.05E-02	--	--	--	--
Feedmill	Storage (bin vents)	--	--	--	--	19.70	4.97	0.87	--	2.90E-06	1.46E-03	1.46E-03	--	--	--	--
Feedmill	Mechanical Finished Feed Loadout [1]	--	--	--	--	0.43	0.11	0.02	--	9.58E-08	4.81E-05	4.82E-05	--	--	--	--
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	9.62	5.36	0.91	--	2.36E-07	1.19E-04	1.19E-04	--	--	--	--
Grain	Receiving Operations (Grain)	--	--	--	--	0.09	0.03	0.01	--	--	--	--	--	--	--	--
Grain	Grain Drying	--	--	--	--	5.78	1.44	0.25	--	--	--	--	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--	2.28	0.57	0.10	--	--	--	--	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--	2.26	0.76	0.13	--	--	--	--	--	--	--	--
Grain	Grain Stroage	--	--	--	--	3.60	0.90	0.15	--	--	--	--	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--	5.12	2.86	0.49	--	--	--	--	--	--	--	--
Facility	Facility Roadways	--	--	--	--	0.82	2.28	0.25	--	--	--	--	--	--	--	--
Total Facility Controlled Emissions		**65.67**	**44.97**	**0.55**	**3.40**	**154.98**	**49.73**	**11.84**	**0.88**	**0.001**	**0.01**	**0.95**	**1.17**	**1.09**	**59,619.06**	**59,971.57**
Emissions Applicable to Title V Limits[1]		**61.55**	**43.90**	**0.30**	**3.02**	**110.33**	**30.71**	**8.47**	**0.88**	**0.001**	**0.011**	**0.94**	**1.16**	**1.08**	**59,153.79**	**59,503.91**
Emissions Applicable to PSD/NNSR Limits[2]		**65.67**	**44.97**	**0.55**	**3.40**	**110.62**	**31.00**	**8.76**	**0.88**	**0.001**	**0.011**	**0.95**	**1.17**	**1.09**	**59,619.06**	**59,971.57**

[1] Title V emissions do not include emissions from sources exempt per COMAR 26.11.02.10 and fugitive sources. Exempted sources are denoted using this footnote.

[2] For PSD/NNSR consideration, emissions do not include fugitive sources.

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Summary (lb/day) PROJECT NO. 343-365

PROJECT Perdue Foods, LLC. - Hurlock Complex SHEET 3

Hurlock, MD

Uncontrolled Facility Emissions

Source Location	Source Description	Nitrogen Oxides		Carbon Monoxide		Sulfur Dioxide		VOC		PM		PM_{10}		$PM_{2.5}$	
		lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day
Feedmill	NG Cleaver Brooks Boiler	1.39	33.47	1.17	28.12	0.01	0.20	0.08	1.84	0.11	2.54	0.11	2.54	0.11	2.54
Hatchery	NG Lochinvar Boiler[1]	0.06	1.47	0.05	1.24	0.00	0.01	0.00	0.08	0.00	0.11	0.00	0.11	0.00	0.11
Hatchery	NG Raypack Boiler	0.20	4.80	0.17	4.03	0.00	0.03	0.01	0.26	0.02	0.36	0.02	0.36	0.02	0.36
Hatchery	NG Laars Boiler	0.11	2.74	0.10	2.30	0.00	0.02	0.01	0.15	0.01	0.21	0.01	0.21	0.01	0.21
Hatchery	Diesel Engine	18.89	453.31	4.33	103.88	0.01	0.20	0.51	12.13	0.38	9.22	0.32	7.58	0.31	7.35
Hatchery	Diesel Emergency Generator (Inside)	16.09	386.21	3.69	88.51	0.01	0.17	0.43	10.34	0.33	7.85	0.27	6.45	0.26	6.26
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	10.81	259.41	2.37	56.90	0.71	16.99	1.02	24.52	0.77	18.41	0.77	18.41	0.77	18.41
Hatchery	Diesel Emergency Generator (Outside)	16.09	386.21	3.69	88.51	0.01	0.17	0.43	10.34	0.33	7.85	0.27	6.45	0.26	6.26
Grain	Grain Pile Emergency Generator[1]	4.57	109.75	1.00	24.07	0.30	7.19	0.43	10.38	0.32	7.79	0.32	7.79	0.32	7.79
Grain	Berico NG Burner	3.62	86.86	3.04	72.96	0.02	0.52	0.20	4.78	0.28	6.60	0.28	6.60	0.28	6.60
Grain	Brock NG Burner	5.81	139.43	4.88	117.12	0.03	0.84	0.32	7.67	0.44	10.60	0.44	10.60	0.44	10.60
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	--	--	--	--	1.02	24.43	0.15	3.59	0.03	0.61
Feedmill	Trace Additives	--	--	--	--	--	--	--	--	0.00	0.07	0.00	0.04	0.00	0.01
Feedmill	Mixer	--	--	--	--	--	--	--	--	3.66	87.84	2.04	48.96	0.35	8.35
Feedmill	Hammermills (1-3)	--	--	--	--	--	--	--	--	72.00	1,728.00	18.00	432.00	3.06	73.44
Feedmill	Pellet Mill (2 units)	--	--	--	--	--	--	--	--	216.00	5,184.00	54.00	1,296.00	9.18	220.32
Feedmill	Storage (bin vents)	--	--	--	--	--	--	--	--	4.50	108.00	1.13	27.22	0.20	4.75
Feedmill	Mechanical Finished Feed Loadout 1	--	--	--	--	--	--	--	--	0.20	4.75	0.05	1.15	0.01	0.20
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	--	--	--	--	10.98	263.52	6.12	146.88	1.04	25.06
Grain	Receiving Operations (Grain)	--	--	--	--	--	--	--	--	2.16	51.78	0.71	16.97	0.12	2.88
Grain	Grain Drying	--	--	--	--	--	--	--	--	2.64	63.29	0.66	15.82	0.11	2.70
Grain	Temporary Outdoor Grain Storage	--	--	--	--	--	--	--	--	2.08	50.04	0.52	12.51	0.09	2.13
Grain	Loadout Operations (Grain)	--	--	--	--	--	--	--	--	1.35	32.51	0.37	8.98	0.06	1.52
Grain	Grain Storage	--	--	--	--	--	--	--	--	2.38	57.23	0.60	14.32	0.10	2.44
Grain	Headhouse & Handling (Grain)	--	--	--	--	--	--	--	--	2.92	70.19	1.63	39.12	0.28	6.67
Facility	Facility Roadways	--	--	--	--	--	--	--	--	0.19	4.47	0.52	12.48	0.06	1.38
Total Facility Uncontrolled Emissions		**77.65**	**1,863.67**	**24.49**	**587.65**	**1.10**	**26.33**	**3.44**	**82.49**	**325.07**	**7,801.66**	**89.30**	**2,143.16**	**17.46**	**418.96**

Controlled Facility Emissions

Source Location	Source Description	Nitrogen Oxides		Carbon Monoxide		Sulfur Dioxide		VOC		PM		PM_{10}		$PM_{2.5}$	
		lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day
Feedmill	NG Cleaver Brooks Boiler	1.39	33.47	1.17	28.12	0.01	0.20	0.08	1.84	0.11	2.54	0.11	2.54	0.11	2.54
Hatchery	NG Lochinvar Boiler	0.06	1.47	0.05	1.24	0.00	0.01	0.00	0.08	0.00	0.11	0.00	0.11	0.00	0.11
Hatchery	NG Raypack Boiler	0.20	4.80	0.17	4.03	0.00	0.03	0.01	0.26	0.02	0.36	0.02	0.36	0.02	0.36
Hatchery	NG Laars Boiler	0.11	2.74	0.10	2.30	0.00	0.02	0.01	0.15	0.01	0.21	0.01	0.21	0.01	0.21
Hatchery	Diesel Engine	18.89	453.31	4.33	103.88	0.01	0.20	0.51	12.13	0.38	9.22	0.32	7.58	0.31	7.35
Hatchery	Diesel Emergency Generator (Inside)	16.09	386.21	3.69	88.51	0.01	0.17	0.43	10.34	0.33	7.85	0.27	6.45	0.26	6.26
Hatchery	Diesel Emergency Generator 2 (Inside)	10.81	259.41	2.37	56.90	0.71	16.99	1.02	24.52	0.77	18.41	0.77	18.41	0.77	18.41
Hatchery	Diesel Emergency Generator (Outside)	16.09	386.21	3.69	88.51	0.01	0.17	0.43	10.34	0.33	7.85	0.27	6.45	0.26	6.26
Grain	Grain Pile Emergency Generator	4.57	109.75	1.00	24.07	0.30	7.19	0.43	10.38	0.32	7.79	0.32	7.79	0.32	7.79
Grain	Berico NG Burner	3.62	86.86	3.04	72.96	0.02	0.52	0.20	4.78	0.28	6.60	0.28	6.60	0.28	6.60
Grain	Brock NG Burner	5.81	139.43	4.88	117.12	0.03	0.84	0.32	7.67	0.44	10.60	0.44	10.60	0.44	10.60
Feedmill	Receiving Operations (Feedmill)	--	--	--	--	--	--	--	--	0.01	0.24	0.00	0.03	0.00	0.01
Feedmill	Trace Additives	--	--	--	--	--	--	--	--	0.00	0.07	0.00	0.04	0.00	0.01
Feedmill	Mixer	--	--	--	--	--	--	--	--	0.73	17.57	0.41	9.79	0.07	1.67
Feedmill	Hammermills (1-3)	--	--	--	--	--	--	--	--	0.72	17.28	0.18	4.32	0.03	0.73
Feedmill	Pellet Mill (2 units)	--	--	--	--	--	--	--	--	21.60	518.40	5.40	129.60	0.92	22.03
Feedmill	Storage (bin vents)	--	--	--	--	--	--	--	--	4.50	108.00	1.13	27.22	0.20	4.75
Feedmill	Mechanical Finished Feed Loadout	--	--	--	--	--	--	--	--	0.10	2.38	0.02	0.58	0.00	0.10
Feedmill	Headhouse & Handling (Feedmill)	--	--	--	--	--	--	--	--	2.20	52.70	1.22	29.38	0.21	5.01
Grain	Receiving Operations (Grain)	--	--	--	--	--	--	--	--	0.02	0.52	0.01	0.17	0.00	0.03
Grain	Grain Drying	--	--	--	--	--	--	--	--	1.32	31.64	0.33	7.91	0.06	1.35
Grain	Temporary Outdoor Grain Storage	--	--	--	--	--	--	--	--	0.52	12.51	0.13	3.13	0.02	0.53
Grain	Loadout Operations (Grain)	--	--	--	--	--	--	--	--	0.52	12.37	0.17	4.17	0.03	0.70
Grain	Grain Stroage	--	--	--	--	--	--	--	--	0.82	19.70	0.21	4.94	0.04	0.85
Grain	Headhouse & Handling (Grain)	--	--	--	--	--	--	--	--	1.17	28.08	0.65	15.65	0.11	2.67
Facility	Facility Roadways	--	--	--	--	--	--	--	--	0.19	4.47	0.52	12.48	0.06	1.38
Total Facility Controlled Emissions		**77.65**	**1,863.67**	**24.49**	**587.65**	**1.10**	**26.33**	**3.44**	**82.49**	**37.39**	**897.47**	**13.19**	**316.52**	**4.51**	**108.33**

Uncontrolled Facility Emissions

Source Location	Source Description	Chromium		Manganese	
		lb/hr	lb/yr	lb/hr	lb/yr
Feedmill	NG Cleaver Brooks Boiler	1.95E-05	0.17	5.30E-06	0.05
Hatchery	NG Lochinvar Boiler[1]	8.60E-07	0.01	2.33E-07	2.04E-03
Hatchery	NG Raypack Boiler	2.80E-06	0.02	7.60E-07	0.01
Hatchery	NG Laars Boiler	1.60E-06	0.01	4.34E-07	0.00
Hatchery	Diesel Engine	--	--	--	--
Hatchery	Diesel Emergency Generator (Inside)	--	--	--	--
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	--	--	--	--
Hatchery	Diesel Emergency Generator (Outside)	--	--	--	--
Grain	Grain Pile Emergency Generator[1]	--	--	--	--
Grain	Berico NG Burner	5.07E-05	0.44	1.38E-05	0.12
Grain	Brock NG Burner	8.13E-05	0.71	2.21E-05	0.19
Feedmill	Receiving Operations (Feedmill)	--	--	--	--
Feedmill	Trace Additives	8.10E-07	0.01	4.06E-04	3.56
Feedmill	Mixer	8.09E-07	0.01	4.06E-04	3.56
Feedmill	Hammermills (1-3)	--	--	--	--
Feedmill	Pellet Mill (2 units)	4.77E-05	0.42	2.40E-02	209.84
Feedmill	Storage (bin vents)	6.63E-07	0.01	3.33E-04	2.91
Feedmill	Mechanical Finished Feed Loadout [1]	4.38E-08	3.83E-04	2.20E-05	0.19
Feedmill	Headhouse & Handling (Feedmill)	2.70E-07	2.36E-03	1.35E-04	1.19
Grain	Receiving Operations (Grain)	--	--	--	--
Grain	Grain Drying	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--
Grain	Grain Storage	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--
Facility	Facility Roadways	--	--	--	--
Total Facility Uncontrolled Emissions		**2.07E-04**	**1.81**	**0.03**	**221.62**

Controlled Facility Emissions

Source Location	Source Description	Chromium		Manganese	
		lb/hr	lb/yr	lb/hr	lb/yr
Feedmill	NG Cleaver Brooks Boiler	1.95E-05	0.17	5.30E-06	0.05
Hatchery	NG Lochinvar Boiler[1]	8.60E-07	0.01	2.33E-07	2.04E-03
Hatchery	NG Raypack Boiler	2.80E-06	0.02	7.60E-07	0.01
Hatchery	NG Laars Boiler	1.60E-06	0.01	4.34E-07	0.00
Hatchery	Diesel Engine	--	--	--	--
Hatchery	Diesel Emergency Generator (Inside)	--	--	--	--
Hatchery	Diesel Emergency Generator 2 (Inside)[1]	--	--	--	--
Hatchery	Diesel Emergency Generator (Outside)	--	--	--	--
Grain	Grain Pile Emergency Generator[1]	--	--	--	--
Grain	Berico NG Burner	5.07E-05	0.44	1.38E-05	0.12
Grain	Brock NG Burner	8.13E-05	0.71	2.21E-05	0.19
Feedmill	Receiving Operations (Feedmill)	--	--	--	--
Feedmill	Trace Additives	8.10E-07	0.01	4.06E-04	3.56
Feedmill	Mixer	1.62E-07	1.42E-03	8.12E-05	0.71
Feedmill	Hammermills (1-3)	--	--	--	--
Feedmill	Pellet Mill (2 units)	4.77E-06	0.04	2.40E-03	20.98
Feedmill	Storage (bin vents)	6.63E-07	0.01	3.33E-04	2.91
Feedmill	Mechanical Finished Feed Loadout [1]	2.19E-08	1.92E-04	1.10E-05	0.10
Feedmill	Headhouse & Handling (Feedmill)	5.39E-08	4.72E-04	2.71E-05	0.24
Grain	Receiving Operations (Grain)	--	--	--	--
Grain	Grain Drying	--	--	--	--
Grain	Temporary Outdoor Grain Storage	--	--	--	--
Grain	Loadout Operations (Grain)	--	--	--	--
Grain	Grain Stroage	--	--	--	--
Grain	Headhouse & Handling (Grain)	--	--	--	--
Facility	Facility Roadways	--	--	--	--
Total Facility Controlled Emissions		**1.63E-04**	**1.43**	**3.30E-03**	**28.88**

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Cleaver Brooks Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	5
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760 hr/yr
Design Capacity	14.65 MMBtu/hr/unit
Number of Boilers	1 Boiler(s)
Gas HHV	1050 BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	1.39	6.11
Carbon Monoxide	84	0.08	1.17	5.13
VOC	5.5	0.01	0.08	0.34
Sulfur Dioxide	0.6	0.00	0.01	0.04
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.11	0.46
PM_{10}	7.6	0.01	0.11	0.46
$PM_{2.5}$	7.6	0.01	0.11	0.46
Carbon Dioxide	120000	114.29	1,673.71	7,330.87
Methane	2.3	0.00	0.03	0.14
Nitrous Oxide	2.2	0.00	0.03	0.13
CO_2e[3]	--	--	1,683.66	7,370.42
2-Methylnaphthalene	2.40E-05	2.29E-08	3.35E-07	1.47E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	2.23E-07	9.77E-07
Acenaphthene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Acenaphthylene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Anthracene	2.40E-06	2.29E-09	3.35E-08	1.47E-07
Benz(a)anthracene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Benzene	2.10E-03	2.00E-06	2.93E-05	1.28E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	1.67E-08	7.33E-08
Benzo(b)fluoranthene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	1.67E-08	7.33E-08
Benzo(k)fluoranthene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Butane	2.10E+00	2.00E-03	2.93E-02	1.28E-01
Chrysene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	1.67E-08	7.33E-08
Dichlorobenzene	1.20E-03	1.14E-06	1.67E-05	7.33E-05
Ethane	3.10E+00	2.95E-03	4.32E-02	1.89E-01
Fluoranthene	3.00E-06	2.86E-09	4.18E-08	1.83E-07
Fluorene	2.80E-06	2.67E-09	3.91E-08	1.71E-07
Formaldehyde	7.50E-02	7.14E-05	1.05E-03	4.58E-03
n-Hexane	1.80E+00	1.71E-03	2.51E-02	1.10E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	2.51E-08	1.10E-07
Naphthalene	6.10E-04	5.81E-07	8.51E-06	3.73E-05
Pentane	2.60E+00	2.48E-03	3.63E-02	1.59E-01
Phenanthrene	1.70E-05	1.62E-08	2.37E-07	1.04E-06
Propane	1.60E+00	1.52E-03	2.23E-02	9.77E-02
Pyrene	5.00E-06	4.76E-09	6.97E-08	3.05E-07
Toluene	3.40E-03	3.24E-06	4.74E-05	2.08E-04
Arsenic	2.00E-04	1.90E-07	2.79E-06	1.22E-05
Barium	4.40E-03	4.19E-06	6.14E-05	2.69E-04
Beryllium	1.20E-05	1.14E-08	1.67E-07	7.33E-07
Cadmium	1.10E-03	1.05E-06	1.53E-05	6.72E-05
Chromium	1.40E-03	1.33E-06	1.95E-05	8.55E-05
Cobalt	8.40E-05	8.00E-08	1.17E-06	5.13E-06
Copper	8.50E-04	8.10E-07	1.19E-05	5.19E-05
Manganese	3.80E-04	3.62E-07	5.30E-06	2.32E-05
Mercury	2.60E-04	2.48E-07	3.63E-06	1.59E-05
Molybdenum	1.10E-03	1.05E-06	1.53E-05	6.72E-05
Nickel	2.10E-03	2.00E-06	2.93E-05	1.28E-04
Selenium	2.40E-05	2.29E-08	3.35E-07	1.47E-06
Vanadium	2.30E-03	2.19E-06	3.21E-05	1.41E-04
Zinc	2.90E-02	2.76E-05	4.04E-04	1.77E-03
Total POM[4]	--	--	1.23E-06	5.39E-06
Total HAPs	--	--	2.63E-02	1.15E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Lochinvar Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	6
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760 hr/yr
Design Capacity	0.65 MMBtu/hr/unit
Number of Boilers	1 Boiler(s)
Gas HHV	1050 BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.06	0.27
Carbon Monoxide	84	0.08	0.05	0.23
VOC	5.5	0.01	0.00	0.01
Sulfur Dioxide	0.6	0.00	0.00	0.00
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.00	0.02
PM_{10}	7.6	0.01	0.00	0.02
$PM_{2.5}$	7.6	0.01	0.00	0.02
Carbon Dioxide	120000	114.29	73.71	322.87
Methane	2.3	0.00	0.00	0.01
Nitrous Oxide	2.2	0.00	0.00	0.01
CO_2e[3]	--	--	74.15	324.61
2-Methylnaphthalene	2.40E-05	2.29E-08	1.47E-08	6.46E-08
3-Methylcholanthrene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	9.83E-09	4.30E-08
Acenaphthene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Acenaphthylene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Anthracene	2.40E-06	2.29E-09	1.47E-09	6.46E-09
Benz(a)anthracene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Benzene	2.10E-03	2.00E-06	1.29E-06	5.65E-06
Benzo(a)pyrene	1.20E-06	1.14E-09	7.37E-10	3.23E-09
Benzo(b)fluoranthene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	7.37E-10	3.23E-09
Benzo(k)fluoranthene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Butane	2.10E+00	2.00E-03	1.29E-03	5.65E-03
Chrysene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	7.37E-10	3.23E-09
Dichlorobenzene	1.20E-03	1.14E-06	7.37E-07	3.23E-06
Ethane	3.10E+00	2.95E-03	1.90E-03	8.34E-03
Fluoranthene	3.00E-06	2.86E-09	1.84E-09	8.07E-09
Fluorene	2.80E-06	2.67E-09	1.72E-09	7.53E-09
Formaldehyde	7.50E-02	7.14E-05	4.61E-05	2.02E-04
n-Hexane	1.80E+00	1.71E-03	1.11E-03	4.84E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	1.11E-09	4.84E-09
Naphthalene	6.10E-04	5.81E-07	3.75E-07	1.64E-06
Pentane	2.60E+00	2.48E-03	1.60E-03	7.00E-03
Phenanthrene	1.70E-05	1.62E-08	1.04E-08	4.57E-08
Propane	1.60E+00	1.52E-03	9.83E-04	4.30E-03
Pyrene	5.00E-06	4.76E-09	3.07E-09	1.35E-08
Toluene	3.40E-03	3.24E-06	2.09E-06	9.15E-06
Arsenic	2.00E-04	1.90E-07	1.23E-07	5.38E-07
Barium	4.40E-03	4.19E-06	2.70E-06	1.18E-05
Beryllium	1.20E-05	1.14E-08	7.37E-09	3.23E-08
Cadmium	1.10E-03	1.05E-06	6.76E-07	2.96E-06
Chromium	1.40E-03	1.33E-06	8.60E-07	3.77E-06
Cobalt	8.40E-05	8.00E-08	5.16E-08	2.26E-07
Copper	8.50E-04	8.10E-07	5.22E-07	2.29E-06
Manganese	3.80E-04	3.62E-07	2.33E-07	1.02E-06
Mercury	2.60E-04	2.48E-07	1.60E-07	7.00E-07
Molybdenum	1.10E-03	1.05E-06	6.76E-07	2.96E-06
Nickel	2.10E-03	2.00E-06	1.29E-06	5.65E-06
Selenium	2.40E-05	2.29E-08	1.47E-08	6.46E-08
Vanadium	2.30E-03	2.19E-06	1.41E-06	6.19E-06
Zinc	2.90E-02	2.76E-05	1.78E-05	7.80E-05
Total POM[4]	--	--	5.42E-08	2.37E-07
Total HAPs	--	--	1.16E-03	5.08E-03

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Raypack Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	7
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	2.10	MMBtu/hr/unit
Number of Boilers	1	Boiler(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.20	0.88
Carbon Monoxide	84	0.08	0.17	0.74
VOC	5.5	0.01	0.01	0.05
Sulfur Dioxide	0.6	0.00	0.00	0.01
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.02	0.07
PM_{10}	7.6	0.01	0.02	0.07
$PM_{2.5}$	7.6	0.01	0.02	0.07
Carbon Dioxide	120000	114.29	240.00	1,051.20
Methane	2.3	0.00	0.00	0.02
Nitrous Oxide	2.2	0.00	0.00	0.02
CO_2e[3]	--	--	241.43	1,056.87
2-Methylnaphthalene	2.40E-05	2.29E-08	4.80E-08	2.10E-07
3-Methylcholanthrene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	3.20E-08	1.40E-07
Acenaphthene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Acenaphthylene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Anthracene	2.40E-06	2.29E-09	4.80E-09	2.10E-08
Benz(a)anthracene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Benzene	2.10E-03	2.00E-06	4.20E-06	1.84E-05
Benzo(a)pyrene	1.20E-06	1.14E-09	2.40E-09	1.05E-08
Benzo(b)fluoranthene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	2.40E-09	1.05E-08
Benzo(k)fluoranthene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Butane	2.10E+00	2.00E-03	4.20E-03	1.84E-02
Chrysene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	2.40E-09	1.05E-08
Dichlorobenzene	1.20E-03	1.14E-06	2.40E-06	1.05E-05
Ethane	3.10E+00	2.95E-03	6.20E-03	2.72E-02
Fluoranthene	3.00E-06	2.86E-09	6.00E-09	2.63E-08
Fluorene	2.80E-06	2.67E-09	5.60E-09	2.45E-08
Formaldehyde	7.50E-02	7.14E-05	1.50E-04	6.57E-04
n-Hexane	1.80E+00	1.71E-03	3.60E-03	1.58E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	3.60E-09	1.58E-08
Naphthalene	6.10E-04	5.81E-07	1.22E-06	5.34E-06
Pentane	2.60E+00	2.48E-03	5.20E-03	2.28E-02
Phenanthrene	1.70E-05	1.62E-08	3.40E-08	1.49E-07
Propane	1.60E+00	1.52E-03	3.20E-03	1.40E-02
Pyrene	5.00E-06	4.76E-09	1.00E-08	4.38E-08
Toluene	3.40E-03	3.24E-06	6.80E-06	2.98E-05
Arsenic	2.00E-04	1.90E-07	4.00E-07	1.75E-06
Barium	4.40E-03	4.19E-06	8.80E-06	3.85E-05
Beryllium	1.20E-05	1.14E-08	2.40E-08	1.05E-07
Cadmium	1.10E-03	1.05E-06	2.20E-06	9.64E-06
Chromium	1.40E-03	1.33E-06	2.80E-06	1.23E-05
Cobalt	8.40E-05	8.00E-08	1.68E-07	7.36E-07
Copper	8.50E-04	8.10E-07	1.70E-06	7.45E-06
Manganese	3.80E-04	3.62E-07	7.60E-07	3.33E-06
Mercury	2.60E-04	2.48E-07	5.20E-07	2.28E-06
Molybdenum	1.10E-03	1.05E-06	2.20E-06	9.64E-06
Nickel	2.10E-03	2.00E-06	4.20E-06	1.84E-05
Selenium	2.40E-05	2.29E-08	4.80E-08	2.10E-07
Vanadium	2.30E-03	2.19E-06	4.60E-06	2.01E-05
Zinc	2.90E-02	2.76E-05	5.80E-05	2.54E-04
Total POM[4]	--	--	1.76E-07	7.73E-07
Total HAPs	--	--	3.78E-03	1.65E-02

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Laars Boiler	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	8
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	1.20	MMBtu/hr/unit
Number of Boilers	1	Boiler(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	0.11	0.50
Carbon Monoxide	84	0.08	0.10	0.42
VOC	5.5	0.01	0.01	0.03
Sulfur Dioxide	0.6	0.00	0.00	0.00
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.01	0.04
PM_{10}	7.6	0.01	0.01	0.04
$PM_{2.5}$	7.6	0.01	0.01	0.04
Carbon Dioxide	120000	114.29	137.14	600.69
Methane	2.3	0.00	0.00	0.01
Nitrous Oxide	2.2	0.00	0.00	0.01
CO_2e[3]	--	--	137.96	603.93
2-Methylnaphthalene	2.40E-05	2.29E-08	2.74E-08	1.20E-07
3-Methylcholanthrene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	1.83E-08	8.01E-08
Acenaphthene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Acenaphthylene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Anthracene	2.40E-06	2.29E-09	2.74E-09	1.20E-08
Benz(a)anthracene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Benzene	2.10E-03	2.00E-06	2.40E-06	1.05E-05
Benzo(a)pyrene	1.20E-06	1.14E-09	1.37E-09	6.01E-09
Benzo(b)fluoranthene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	1.37E-09	6.01E-09
Benzo(k)fluoranthene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Butane	2.10E+00	2.00E-03	2.40E-03	1.05E-02
Chrysene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	1.37E-09	6.01E-09
Dichlorobenzene	1.20E-03	1.14E-06	1.37E-06	6.01E-06
Ethane	3.10E+00	2.95E-03	3.54E-03	1.55E-02
Fluoranthene	3.00E-06	2.86E-09	3.43E-09	1.50E-08
Fluorene	2.80E-06	2.67E-09	3.20E-09	1.40E-08
Formaldehyde	7.50E-02	7.14E-05	8.57E-05	3.75E-04
n-Hexane	1.80E+00	1.71E-03	2.06E-03	9.01E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	2.06E-09	9.01E-09
Naphthalene	6.10E-04	5.81E-07	6.97E-07	3.05E-06
Pentane	2.60E+00	2.48E-03	2.97E-03	1.30E-02
Phenanthrene	1.70E-05	1.62E-08	1.94E-08	8.51E-08
Propane	1.60E+00	1.52E-03	1.83E-03	8.01E-03
Pyrene	5.00E-06	4.76E-09	5.71E-09	2.50E-08
Toluene	3.40E-03	3.24E-06	3.89E-06	1.70E-05
Arsenic	2.00E-04	1.90E-07	2.29E-07	1.00E-06
Barium	4.40E-03	4.19E-06	5.03E-06	2.20E-05
Beryllium	1.20E-05	1.14E-08	1.37E-08	6.01E-08
Cadmium	1.10E-03	1.05E-06	1.26E-06	5.51E-06
Chromium	1.40E-03	1.33E-06	1.60E-06	7.01E-06
Cobalt	8.40E-05	8.00E-08	9.60E-08	4.20E-07
Copper	8.50E-04	8.10E-07	9.71E-07	4.25E-06
Manganese	3.80E-04	3.62E-07	4.34E-07	1.90E-06
Mercury	2.60E-04	2.48E-07	2.97E-07	1.30E-06
Molybdenum	1.10E-03	1.05E-06	1.26E-06	5.51E-06
Nickel	2.10E-03	2.00E-06	2.40E-06	1.05E-05
Selenium	2.40E-05	2.29E-08	2.74E-08	1.20E-07
Vanadium	2.30E-03	2.19E-06	2.63E-06	1.15E-05
Zinc	2.90E-02	2.76E-05	3.31E-05	1.45E-04
Total POM[4]	--	--	1.01E-07	4.42E-07
Total HAPs	--	--	2.16E-03	9.45E-03

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Diesel Engine (Temporary - not on site)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	9
	Hurlock, MD		

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	787	hp
Engine Capacity	587	kW
Fuel Usage[8]	40.2	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	18.89	4.72
Carbon Monoxide	0.0055	lb/hp-hr	4.33	1.08
VOC[7]	--	--	0.51	0.13
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.01	0.00
PM	0.0697	lb/MMBtu	0.38	0.10
PM_{10}	0.0573	lb/MMBtu	0.32	0.08
$PM_{2.5}$	0.0556	lb/MMBtu	0.31	0.08
Total Organic Carbon	0.0007	lb/hp-hr	0.55	0.14
Non-Methane Hydrocarbons	--	--	0.50	0.13
Carbon Dioxide	165	lb/MMBtu	908.99	227.25
Methane[9]	6.3E-05	lb/hp-hr	4.99E-02	1.25E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	7.29E-03	1.82E-03
CO_2e[6]		--	912.40	228.08
Benzene	7.76E-04	lb/MMBtu	4.27E-03	1.07E-03
Toluene	2.81E-04	lb/MMBtu	1.55E-03	3.87E-04
Xylenes	1.93E-04	lb/MMBtu	1.06E-03	2.66E-04
Propylene	2.79E-03	lb/MMBtu	1.54E-02	3.84E-03
Formaldehyde	7.89E-05	lb/MMBtu	4.35E-04	1.09E-04
Acetaldehyde	2.52E-05	lb/MMBtu	1.39E-04	3.47E-05
Acrolein	7.88E-06	lb/MMBtu	4.34E-05	1.09E-05
Naphthalene	1.30E-04	lb/MMBtu	7.16E-04	1.79E-04
Acenaphthylene	9.23E-06	lb/MMBtu	5.08E-05	1.27E-05
Acenaphthene	4.68E-06	lb/MMBtu	2.58E-05	6.45E-06
Fluorene	1.28E-05	lb/MMBtu	7.05E-05	1.76E-05
Phenanthrene	4.08E-05	lb/MMBtu	2.25E-04	5.62E-05
Anthracene	1.23E-06	lb/MMBtu	6.78E-06	1.69E-06
Fluoranthene	4.03E-06	lb/MMBtu	2.22E-05	5.55E-06
Pyrene	3.71E-06	lb/MMBtu	2.04E-05	5.11E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	3.43E-06	8.57E-07
Chrysene	1.53E-06	lb/MMBtu	8.43E-06	2.11E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	6.11E-06	1.53E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	1.20E-06	3.00E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	1.42E-06	3.54E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	2.28E-06	5.70E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.91E-06	4.77E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	3.06E-06	7.66E-07
Total PAHs		--	1.17E-03	2.91E-04
Total HAPs		--	8.67E-03	2.17E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Diesel Emergency Generator - Inside	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	10
	Hurlock, MD		

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	671	hp
Engine Capacity	500	kW
Fuel Usage[8]	34.3	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	16.09	4.02
Carbon Monoxide	0.0055	lb/hp-hr	3.69	0.92
VOC[7]	--	--	0.43	0.11
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.01	0.00
PM	0.0697	lb/MMBtu	0.33	0.08
PM_{10}	0.0573	lb/MMBtu	0.27	0.07
$PM_{2.5}$	0.0556	lb/MMBtu	0.26	0.07
Total Organic Carbon	0.0007	lb/hp-hr	0.47	0.12
Non-Methane Hydrocarbons	--	--	0.43	0.11
Carbon Dioxide	165	lb/MMBtu	774.44	193.61
Methane[9]	6.3E-05	lb/hp-hr	4.25E-02	1.06E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	6.21E-03	1.55E-03
CO_2e[6]		--	777.35	194.32
Benzene	7.76E-04	lb/MMBtu	3.64E-03	9.11E-04
Toluene	2.81E-04	lb/MMBtu	1.32E-03	3.30E-04
Xylenes	1.93E-04	lb/MMBtu	9.06E-04	2.26E-04
Propylene	2.79E-03	lb/MMBtu	1.31E-02	3.27E-03
Formaldehyde	7.89E-05	lb/MMBtu	3.70E-04	9.26E-05
Acetaldehyde	2.52E-05	lb/MMBtu	1.18E-04	2.96E-05
Acrolein	7.88E-06	lb/MMBtu	3.70E-05	9.25E-06
Naphthalene	1.30E-04	lb/MMBtu	6.10E-04	1.53E-04
Acenaphthylene	9.23E-06	lb/MMBtu	4.33E-05	1.08E-05
Acenaphthene	4.68E-06	lb/MMBtu	2.20E-05	5.49E-06
Fluorene	1.28E-05	lb/MMBtu	6.01E-05	1.50E-05
Phenanthrene	4.08E-05	lb/MMBtu	1.91E-04	4.79E-05
Anthracene	1.23E-06	lb/MMBtu	5.77E-06	1.44E-06
Fluoranthene	4.03E-06	lb/MMBtu	1.89E-05	4.73E-06
Pyrene	3.71E-06	lb/MMBtu	1.74E-05	4.35E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	2.92E-06	7.30E-07
Chrysene	1.53E-06	lb/MMBtu	7.18E-06	1.80E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	5.21E-06	1.30E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	1.02E-06	2.56E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	1.21E-06	3.02E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	1.94E-06	4.86E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.62E-06	4.06E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	2.61E-06	6.52E-07
Total PAHs		--	9.93E-04	2.48E-04
Total HAPs		--	7.39E-03	1.85E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Diesel Emergency Generator 2 (Inside)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	11
	Hurlock, MD		

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	349	hp
Engine Capacity	260	kW
Fuel Usage[8]	17.8	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.031	lb/hp-hr	10.81	2.70
Carbon Monoxide	0.0068	lb/hp-hr	2.37	0.59
VOC[7]	--	--	1.02	0.26
Sulfur Dioxide	2.90E-01	lb/MMBtu	0.71	0.18
PM[4]	0.0022	lb/hp-hr	0.77	0.19
PM_{10}[4]	0.0022	lb/hp-hr	0.77	0.19
$PM_{2.5}$[4]	0.0022	lb/hp-hr	0.77	0.19
Total Organic Carbon[9]	0.0025	lb/hp-hr	0.88	0.22
Non-Methane Hydrocarbons	--	--	0.86	0.22
Carbon Dioxide	164	lb/MMBtu	400.27	100.07
Methane[5]	3.0E-03	kg/MMBtu	0.02	0.00
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	0.00	0.00
CO_2e[6]		--	401.63	100.39
Aldehydes	4.63E-04	lb/hp-hr	0.16	4.04E-02
1,3-Butadiene	3.91E-05	lb/MMBtu	9.54E-05	2.39E-05
Benzene	9.33E-04	lb/MMBtu	2.28E-03	5.69E-04
Toluene	4.09E-04	lb/MMBtu	9.98E-04	2.50E-04
Xylenes	2.85E-04	lb/MMBtu	6.96E-04	1.74E-04
Propylene	2.58E-03	lb/MMBtu	6.30E-03	1.57E-03
Formaldehyde	1.18E-03	lb/MMBtu	2.88E-03	7.20E-04
Acetaldehyde	7.67E-04	lb/MMBtu	1.87E-03	4.68E-04
Acrolein	9.25E-05	lb/MMBtu	2.26E-04	5.64E-05
Naphthalene	8.48E-05	lb/MMBtu	2.07E-04	5.17E-05
Acenaphthylene	5.06E-06	lb/MMBtu	1.23E-05	3.09E-06
Acenaphthene	1.42E-06	lb/MMBtu	3.47E-06	8.66E-07
Fluorene	2.92E-05	lb/MMBtu	7.13E-05	1.78E-05
Phenanthrene	2.94E-05	lb/MMBtu	7.18E-05	1.79E-05
Anthracene	1.87E-06	lb/MMBtu	4.56E-06	1.14E-06
Fluoranthene	7.61E-06	lb/MMBtu	1.86E-05	4.64E-06
Pyrene	4.78E-06	lb/MMBtu	1.17E-05	2.92E-06
Benzo(a)anthracene	1.68E-06	lb/MMBtu	4.10E-06	1.03E-06
Chrysene	3.53E-07	lb/MMBtu	8.62E-07	2.15E-07
Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	2.42E-07	6.05E-08
Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	3.78E-07	9.46E-08
Benzo(a)pyrene	1.88E-07	lb/MMBtu	4.59E-07	1.15E-07
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	9.15E-07	2.29E-07
Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	1.42E-06	3.56E-07
Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	1.19E-06	2.98E-07
Total PAHs		--	4.10E-04	1.03E-04
Total HAPs		--	9.45E-03	2.36E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.3. Tables 3.3-1 and 3.3-2. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] PM Emission factors only available for PM_{10}. Assume $PM=PM_{10}=PM_{2.5}$.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is equal to NMHC + Aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.3.

[9] U.S. EPA AP-42 Ch. 3.3. Table 3.3-1, Exhaust + Crankcase

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Diesel Emergency Generator (Outside)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	12
	Hurlock, MD		

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	671	hp
Engine Capacity	500	kW
Fuel Usage[8]	34.3	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.024	lb/hp-hr	16.09	4.02
Carbon Monoxide	0.0055	lb/hp-hr	3.69	0.92
VOC[7]	--	--	0.43	0.11
Sulfur Dioxide[4]	1.52E-03	lb/MMBtu	0.01	0.00
PM	0.0697	lb/MMBtu	0.33	0.08
PM_{10}	0.0573	lb/MMBtu	0.27	0.07
$PM_{2.5}$	0.0556	lb/MMBtu	0.26	0.07
Total Organic Carbon	0.0007	lb/hp-hr	0.47	0.12
Non-Methane Hydrocarbons	--	--	0.43	0.11
Carbon Dioxide	165	lb/MMBtu	774.44	193.61
Methane[9]	6.3E-05	lb/hp-hr	4.25E-02	1.06E-02
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	6.21E-03	1.55E-03
CO_2e[6]		--	777.35	194.32
Benzene	7.76E-04	lb/MMBtu	3.64E-03	9.11E-04
Toluene	2.81E-04	lb/MMBtu	1.32E-03	3.30E-04
Xylenes	1.93E-04	lb/MMBtu	9.06E-04	2.26E-04
Propylene	2.79E-03	lb/MMBtu	1.31E-02	3.27E-03
Formaldehyde	7.89E-05	lb/MMBtu	3.70E-04	9.26E-05
Acetaldehyde	2.52E-05	lb/MMBtu	1.18E-04	2.96E-05
Acrolein	7.88E-06	lb/MMBtu	3.70E-05	9.25E-06
Naphthalene	1.30E-04	lb/MMBtu	6.10E-04	1.53E-04
Acenaphthylene	9.23E-06	lb/MMBtu	4.33E-05	1.08E-05
Acenaphthene	4.68E-06	lb/MMBtu	2.20E-05	5.49E-06
Fluorene	1.28E-05	lb/MMBtu	6.01E-05	1.50E-05
Phenanthrene	4.08E-05	lb/MMBtu	1.91E-04	4.79E-05
Anthracene	1.23E-06	lb/MMBtu	5.77E-06	1.44E-06
Fluoranthene	4.03E-06	lb/MMBtu	1.89E-05	4.73E-06
Pyrene	3.71E-06	lb/MMBtu	1.74E-05	4.35E-06
Benz(a)anthracene	6.22E-07	lb/MMBtu	2.92E-06	7.30E-07
Chrysene	1.53E-06	lb/MMBtu	7.18E-06	1.80E-06
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	5.21E-06	1.30E-06
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	1.02E-06	2.56E-07
Benzo(a)pyrene	2.57E-07	lb/MMBtu	1.21E-06	3.02E-07
Indeno(1,2,3-cd)pyrene	4.14E-07	lb/MMBtu	1.94E-06	4.86E-07
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.62E-06	4.06E-07
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	2.61E-06	6.52E-07
Total PAHs		--	9.93E-04	2.48E-04
Total HAPs		--	7.39E-03	1.85E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.4. Tables 3.4-1, 3.4-2, 3.4-3 and 3.4-4. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] Assuming diesel is ultra low sulfur diesel with a sufur content of 0.0015%.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is the sum of NMHC and aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.4.

[9] Per AP-42 3.4-1 Methane accounts for 9% of the TOC emission factor.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Diesel Emergency Generator Grain Pile	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	13
	Hurlock, MD		

Assumptions:

Operating Hours	500	hr/yr
Engine Capacity	148	hp
Engine Capacity	110	kW
Fuel Usage[8]	7.5	gal/hr
Number of Generators	1	Generator(s)
Fuel HHV[1]	137,000	Btu/gal

Pollutant	Emission Factor[2]		Hourly Emission Rate[3] (lb/hr)	Annual Emission Rate[3] (ton/yr)
Nitrogen Oxides	0.031	lb/hp-hr	4.57	1.14
Carbon Monoxide	0.0068	lb/hp-hr	1.00	0.25
VOC[7]	--	--	0.43	0.11
Sulfur Dioxide	2.90E-01	lb/MMBtu	0.30	0.07
PM[4]	0.0022	lb/hp-hr	0.32	0.08
PM_{10}[4]	0.0022	lb/hp-hr	0.32	0.08
$PM_{2.5}$[4]	0.0022	lb/hp-hr	0.32	0.08
Total Organic Carbon[9]	0.0025	lb/hp-hr	0.37	0.09
Non-Methane Hydrocarbons	--	--	0.36	0.09
Carbon Dioxide	164	lb/MMBtu	169.34	42.34
Methane[5]	3.0E-03	kg/MMBtu	0.01	0.00
Nitrous Oxide[5]	6.0E-04	kg/MMBtu	0.00	0.00
CO_2e[6]		--	169.92	42.47
Aldehydes	4.63E-04	lb/hp-hr	0.07	1.71E-02
1,3-Butadiene	3.91E-05	lb/MMBtu	4.04E-05	1.01E-05
Benzene	9.33E-04	lb/MMBtu	9.63E-04	2.41E-04
Toluene	4.09E-04	lb/MMBtu	4.22E-04	1.06E-04
Xylenes	2.85E-04	lb/MMBtu	2.94E-04	7.36E-05
Propylene	2.58E-03	lb/MMBtu	2.66E-03	6.66E-04
Formaldehyde	1.18E-03	lb/MMBtu	1.22E-03	3.05E-04
Acetaldehyde	7.67E-04	lb/MMBtu	7.92E-04	1.98E-04
Acrolein	9.25E-05	lb/MMBtu	9.55E-05	2.39E-05
Naphthalene	8.48E-05	lb/MMBtu	8.76E-05	2.19E-05
Acenaphthylene	5.06E-06	lb/MMBtu	5.22E-06	1.31E-06
Acenaphthene	1.42E-06	lb/MMBtu	1.47E-06	3.67E-07
Fluorene	2.92E-05	lb/MMBtu	3.02E-05	7.54E-06
Phenanthrene	2.94E-05	lb/MMBtu	3.04E-05	7.59E-06
Anthracene	1.87E-06	lb/MMBtu	1.93E-06	4.83E-07
Fluoranthene	7.61E-06	lb/MMBtu	7.86E-06	1.96E-06
Pyrene	4.78E-06	lb/MMBtu	4.94E-06	1.23E-06
Benzo(a)anthracene	1.68E-06	lb/MMBtu	1.73E-06	4.34E-07
Chrysene	3.53E-07	lb/MMBtu	3.65E-07	9.11E-08
Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	1.02E-07	2.56E-08
Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	1.60E-07	4.00E-08
Benzo(a)pyrene	1.88E-07	lb/MMBtu	1.94E-07	4.85E-08
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	3.87E-07	9.68E-08
Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	6.02E-07	1.50E-07
Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	5.05E-07	1.26E-07
Total PAHs		--	1.74E-04	4.34E-05
Total HAPs		--	4.00E-03	1.00E-03

Notes

[1] U.S. EPA AP-42 Appendix A, Miscellaneous Data and Conversion Factors.

[2] U.S. EPA AP-42 Ch. 3.3. Tables 3.3-1 and 3.3-2. Emission Factors for diesel engines. Unless otherwise noted.

[3] Emissions are total of all generators.

[4] PM Emission factors only available for PM_{10}. Assume $PM=PM_{10}=PM_{2.5}$.

[5] U.S. EPA 40 CFR 98 Subpart C, Table C-2.

[6] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[7] VOC is equal to NMHC + Aldehydes for engines.

[8] Fuel Usage calculated per U.S. EPA AP-42 Ch. 3.3.

[9] U.S. EPA AP-42 Ch. 3.3. Table 3.3-1, Exhaust + Crankcase

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Berico Dryer Burner	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	14
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	38.00	MMBtu/hr/unit
Number of Boilers	1	Burner(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	3.62	15.85
Carbon Monoxide	84	0.08	3.04	13.32
VOC	5.5	0.01	0.20	0.87
Sulfur Dioxide	0.6	0.00	0.02	0.10
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.28	1.20
PM_{10}	7.6	0.01	0.28	1.20
$PM_{2.5}$	7.6	0.01	0.28	1.20
Carbon Dioxide	120000	114.29	4,342.86	19,021.71
Methane	2.3	0.00	0.08	0.36
Nitrous Oxide	2.2	0.00	0.08	0.35
CO_2e[3]	--	--	4,368.66	19,124.34
2-Methylnaphthalene	2.40E-05	2.29E-08	8.69E-07	3.80E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	5.79E-07	2.54E-06
Acenaphthene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Acenaphthylene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Anthracene	2.40E-06	2.29E-09	8.69E-08	3.80E-07
Benz(a)anthracene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Benzene	2.10E-03	2.00E-06	7.60E-05	3.33E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	4.34E-08	1.90E-07
Benzo(b)fluoranthene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	4.34E-08	1.90E-07
Benzo(k)fluoranthene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Butane	2.10E+00	2.00E-03	7.60E-02	3.33E-01
Chrysene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	4.34E-08	1.90E-07
Dichlorobenzene	1.20E-03	1.14E-06	4.34E-05	1.90E-04
Ethane	3.10E+00	2.95E-03	1.12E-01	4.91E-01
Fluoranthene	3.00E-06	2.86E-09	1.09E-07	4.76E-07
Fluorene	2.80E-06	2.67E-09	1.01E-07	4.44E-07
Formaldehyde	7.50E-02	7.14E-05	2.71E-03	1.19E-02
n-Hexane	1.80E+00	1.71E-03	6.51E-02	2.85E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	6.51E-08	2.85E-07
Naphthalene	6.10E-04	5.81E-07	2.21E-05	9.67E-05
Pentane	2.60E+00	2.48E-03	9.41E-02	4.12E-01
Phenanthrene	1.70E-05	1.62E-08	6.15E-07	2.69E-06
Propane	1.60E+00	1.52E-03	5.79E-02	2.54E-01
Pyrene	5.00E-06	4.76E-09	1.81E-07	7.93E-07
Toluene	3.40E-03	3.24E-06	1.23E-04	5.39E-04
Arsenic	2.00E-04	1.90E-07	7.24E-06	3.17E-05
Barium	4.40E-03	4.19E-06	1.59E-04	6.97E-04
Beryllium	1.20E-05	1.14E-08	4.34E-07	1.90E-06
Cadmium	1.10E-03	1.05E-06	3.98E-05	1.74E-04
Chromium	1.40E-03	1.33E-06	5.07E-05	2.22E-04
Cobalt	8.40E-05	8.00E-08	3.04E-06	1.33E-05
Copper	8.50E-04	8.10E-07	3.08E-05	1.35E-04
Manganese	3.80E-04	3.62E-07	1.38E-05	6.02E-05
Mercury	2.60E-04	2.48E-07	9.41E-06	4.12E-05
Molybdenum	1.10E-03	1.05E-06	3.98E-05	1.74E-04
Nickel	2.10E-03	2.00E-06	7.60E-05	3.33E-04
Selenium	2.40E-05	2.29E-08	8.69E-07	3.80E-06
Vanadium	2.30E-03	2.19E-06	8.32E-05	3.65E-04
Zinc	2.90E-02	2.76E-05	1.05E-03	4.60E-03
Total POM[4]	--	--	3.19E-06	1.40E-05
Total HAPs	--	--	6.83E-02	2.99E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Brock Dryer Burner	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	15
	Hurlock, MD		

Assumptions:

Operating Schedule	8,760	hr/yr
Design Capacity	61.00	MMBtu/hr/unit
Number of Boilers	1	Burner(s)
Gas HHV	1050	BTU/scf

Pollutant	Emission Factor[1] (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly Emission Rate[2] (lb/hr)	Annual Emission Rate[2] (ton/yr)
Nitrogen Oxides	100	0.10	5.81	25.45
Carbon Monoxide	84	0.08	4.88	21.37
VOC	5.5	0.01	0.32	1.40
Sulfur Dioxide	0.6	0.00	0.03	0.15
Lead	0.0005	0.00	0.00	0.00
PM	7.6	0.01	0.44	1.93
PM_{10}	7.6	0.01	0.44	1.93
$PM_{2.5}$	7.6	0.01	0.44	1.93
Carbon Dioxide	120000	114.29	6,971.43	30,534.86
Methane	2.3	0.00	0.13	0.59
Nitrous Oxide	2.2	0.00	0.13	0.56
CO_2e[3]	--	--	7,012.86	30,699.59
2-Methylnaphthalene	2.40E-05	2.29E-08	1.39E-06	6.11E-06
3-Methylcholanthrene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.52E-08	9.30E-07	4.07E-06
Acenaphthene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Acenaphthylene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Anthracene	2.40E-06	2.29E-09	1.39E-07	6.11E-07
Benz(a)anthracene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Benzene	2.10E-03	2.00E-06	1.22E-04	5.34E-04
Benzo(a)pyrene	1.20E-06	1.14E-09	6.97E-08	3.05E-07
Benzo(b)fluoranthene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Benzo(g,h,i)perylene	1.20E-06	1.14E-09	6.97E-08	3.05E-07
Benzo(k)fluoranthene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Butane	2.10E+00	2.00E-03	1.22E-01	5.34E-01
Chrysene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Dibenzo(a,h)anthracene	1.20E-06	1.14E-09	6.97E-08	3.05E-07
Dichlorobenzene	1.20E-03	1.14E-06	6.97E-05	3.05E-04
Ethane	3.10E+00	2.95E-03	1.80E-01	7.89E-01
Fluoranthene	3.00E-06	2.86E-09	1.74E-07	7.63E-07
Fluorene	2.80E-06	2.67E-09	1.63E-07	7.12E-07
Formaldehyde	7.50E-02	7.14E-05	4.36E-03	1.91E-02
n-Hexane	1.80E+00	1.71E-03	1.05E-01	4.58E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	1.71E-09	1.05E-07	4.58E-07
Naphthalene	6.10E-04	5.81E-07	3.54E-05	1.55E-04
Pentane	2.60E+00	2.48E-03	1.51E-01	6.62E-01
Phenanthrene	1.70E-05	1.62E-08	9.88E-07	4.33E-06
Propane	1.60E+00	1.52E-03	9.30E-02	4.07E-01
Pyrene	5.00E-06	4.76E-09	2.90E-07	1.27E-06
Toluene	3.40E-03	3.24E-06	1.98E-04	8.65E-04
Arsenic	2.00E-04	1.90E-07	1.16E-05	5.09E-05
Barium	4.40E-03	4.19E-06	2.56E-04	1.12E-03
Beryllium	1.20E-05	1.14E-08	6.97E-07	3.05E-06
Cadmium	1.10E-03	1.05E-06	6.39E-05	2.80E-04
Chromium	1.40E-03	1.33E-06	8.13E-05	3.56E-04
Cobalt	8.40E-05	8.00E-08	4.88E-06	2.14E-05
Copper	8.50E-04	8.10E-07	4.94E-05	2.16E-04
Manganese	3.80E-04	3.62E-07	2.21E-05	9.67E-05
Mercury	2.60E-04	2.48E-07	1.51E-05	6.62E-05
Molybdenum	1.10E-03	1.05E-06	6.39E-05	2.80E-04
Nickel	2.10E-03	2.00E-06	1.22E-04	5.34E-04
Selenium	2.40E-05	2.29E-08	1.39E-06	6.11E-06
Vanadium	2.30E-03	2.19E-06	1.34E-04	5.85E-04
Zinc	2.90E-02	2.76E-05	1.68E-03	7.38E-03
Total POM[4]	--	--	5.12E-06	2.24E-05
Total HAPs	--	--	1.10E-01	4.81E-01

Notes

[1] U.S. EPA AP-42 Ch. 1.4. Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 Emission Factors for Nitrogen Oxides, Carbon Monoxide, Criteria Pollutants and Speciated Organic Compounds from Natural Gas Combustion; uncontrolled, small boilers (<100 MMBtu/hr).

[2] Emissions are total of all boilers.

[3] CO_2e emissions are comprised of Carbon Dioxide (GWP of 1), Methane (GWP of 28), and Nitrous Oxide (GWP of 265).

[4] Total POM includes all PAH and PAH derivatives.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Truck Receiving Pit #2 - Feedmill Ingredients	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	16
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	58	tons/hr
Maximum Annual Throughput[1]	505,665	tons/yr
Control Efficiency[2]	99	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.017	0.98	4.30	0.0098	0.0430
PM_{10}	0.0025	0.14	0.63	0.0014	0.0063
$PM_{2.5}$[4]	0.000425	0.02	0.11	0.0002	0.0011

Notes

[1] Per Facility Personnel.

[2] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Grain receiving".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Rail Receiving	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	17
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	2	tons/hr
Maximum Annual Throughput[1]	18,000	tons/yr
Control Efficiency[2]	99.99%	

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.017	0.03	0.15	3.49E-06	1.53E-05
PM_{10}	0.0025	0.01	0.02	5.14E-07	2.25E-06
$PM_{2.5}$[4]	0.000425	8.73E-04	3.83E-03	8.73E-08	3.82E-07

Notes

[1] Per Facility Personnel.

[2] Rail receiving is controlled via a proposed vortex spout.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Grain receiving".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Bulk Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	18
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,165	tons/yr
Maximum Hourly Throughput[1]	60	tons/hr
Bulk Bin Capacity[1]	26-110	tons/bin
Number of Bulk Bins[1]	23	bins
Control Efficiency[2]	0.0	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	1.50	6.56	1.50	6.56
PM_{10}	0.0063	0.38	1.65	0.38	1.65
$PM_{2.5}$	0.0011	0.07	0.29	0.07	0.29

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Micro Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	19
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	435	tons/yr
Maximum Hourly Throughput[1]	0.05	tons/hr
Number of Micro Bins[1]	16	bins
Control Efficiency[2]	0.0	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	1.24E-03	5.44E-03	1.24E-03	5.44E-03
PM_{10}	0.0063	3.13E-04	1.37E-03	3.13E-04	1.37E-03
$PM_{2.5}$	0.0011	5.47E-05	2.39E-04	5.47E-05	2.39E-04
Chromium[4]	6.67E-06	3.31E-07	1.45E-06	3.31E-07	1.45E-06
Manganese[4]	3.35E-03	1.66E-04	7.29E-04	1.66E-04	7.29E-04

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Storage Tanks	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	20
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	60	tons/hr
Maximum Annual Throughput[1]	525,165	tons/yr
Number of Grain Storage Tanks[1]	3	Tanks
Control Efficiency[2]	0%	

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	1.50	6.56	1.50	6.56
PM_{10}	0.0063	0.38	1.65	0.38	1.65
$PM_{2.5}$	0.0011	0.07	0.29	0.07	0.29

Notes

[1] Per Facility Personnel

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Finished Feed Bins	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	21
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	525,600	tons/yr
Maximum Hourly Throughput[1]	60	tons/hr
Number of Finished Feed Bins[1]	10	bins
Control Efficiency[2]	0.0	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	1.50	6.57	1.50	6.57
PM_{10}	0.0063	0.38	1.66	0.38	1.66
$PM_{2.5}$	0.0011	0.07	0.29	0.07	0.29
Chromium[4]	5.52E-09	3.31E-07	1.45E-06	3.31E-07	1.45E-06
Manganese[4]	2.77E-06	1.66E-04	7.29E-04	1.66E-04	7.29E-04

Notes

[1] Per Facility Personnel.

[2] Not equipped with controls.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Pneumatic Lines	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	22
	Hurlock, MD		

Assumptions:

Maximum Annual Throughput[1]	1,500	tons/yr
Maximum Hourly Throughput[1]	0.17	tons/hr
Control Efficiency[2]	99.9	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.0099	1.70E-03	7.43E-03	1.70E-06	7.42E-06
PM_{10}	0.0016	2.74E-04	1.20E-03	2.74E-07	1.20E-06
$PM_{2.5}$[4]	0.0006	1.03E-04	4.50E-04	1.03E-07	4.50E-07

Notes

[1] Per Facility Personnel.

[2] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses). Baghouse vents inside the building adding an additional 90% control.

[3] U.S. EPA AP-42 Ch. 11.19.2 Table 11.19.2-4 Emission Factors for Particulates for Pulverized Mineral Processing Operations (Product Storage with Fabric Filter Control).

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Trace Additives	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	23
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	0.05	tons/hr
Maximum Annual Throughput[1]	435	tons/yr
Control Efficiency[2]	0	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	0.003	0.013	0.0030	0.0133
PM_{10}	0.034	0.002	0.007	0.0017	0.0074
$PM_{2.5}$[4]	0.0058	2.88E-04	0.001	0.0003	0.0013
Chromium[5]	1.63E-05	8.10E-07	3.55E-06	8.10E-07	3.55E-06
Manganese[5]	8.17E-03	4.06E-04	1.78E-03	4.06E-04	1.78E-03

Notes

[1] Per Facility Personnel.

[2] Per Facility Personnel, additives, stored in bags, enter the mixer via the operator. This is assumed to be an uncontrolled process.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[5] Per Facility Personnel, the additives contain trace metals Cr (267 ppm per pound) and Mn (13.4% per pound). This composition was applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mixer	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	24
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	60	tons/hr
Maximum Annual Throughput[1]	525,600	tons/yr
Control Efficiency[2]	80	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	3.66	16.03	0.73	3.21
PM_{10}	0.034	2.04	8.94	0.41	1.79
$PM_{2.5}$[4]	0.0058	0.35	1.52	0.07	0.30
Chromium[5]	1.35E-08	8.09E-07	3.54E-06	1.62E-07	7.08E-07
Manganese[5]	6.77E-06	4.06E-04	1.78E-03	8.12E-05	3.56E-04

Notes

[1] Per Facility Personnel.

[2] Operations are fully enclosed; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Hammermills	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	25
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	60 tons/hr
Number of Hammermills[1]	3 hammermill(s)
Maximum Annual Throughput[1]	525,165 tons/yr
Baghouse Control Efficiency[4]	99%

Pollutant	Controlled Emission Factor[2,3]	Controlled Emission Rate	Controlled Annual Emission Rate	Uncontrolled Emission Factor[3]	Uncontrolled Annual Emission Rate[3]
	lb/ton grain handled	(lb/hr)	(ton/yr)	lb/hr	(ton/yr)
PM	0.012	0.72	3.15	72.00	315.10
PM_{10}[2]	0.003	0.18	0.79	18.00	78.77
$PM_{2.5}$[2]	0.001	0.03	0.13	3.06	13.39

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Hammermill, Baghouse"

[3] Only PM factor is avaliable, as per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM_{10} emissions are 25% of PM emissions and $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[4] The emission factor is based on baghouse control. Uncontrolled emissions are based on 99% baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Pelletizing - Pellet Cooler(s)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	26
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	30	tons/hr/cooler
Maximum Annual Throughput[1]	525,600	tons/yr
Number of Coolers[1]	2	Cooler(s)
Cyclone Control Efficiency[4]	90%	

Pollutant	Emission Factor[2] (lb/ton grain handled)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)	Uncontrolled Emission Factor[4] lb/hr	Uncontrolled Annual Emission Rate[4] (ton/yr)
PM	0.3600	21.60	94.61	216.00	946.08
PM_{10}[3]	0.0900	5.40	23.65	54.00	236.52
$PM_{2.5}$[3]	0.0153	0.92	4.02	9.18	40.21
Chromium[5]	7.96E-08	4.77E-06	2.09E-05	4.77E-05	2.09E-04
Manganese[5]	3.99E-05	2.40E-03	1.05E-02	2.40E-02	1.05E-01

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities for Animal feed mills "Pellet Cooler". The emission factor is based on cyclone control.

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM10 emissions are 25% of PM emissions and $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[4] The emission factor is based on cyclone control. Uncontrolled emission factor is based on 90% cyclone control efficiency from EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Headhouse & Material Handling (Feedmill)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	27
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	180	tons/hr
Maximum Annual Throughput[1]	1,576,800	tons/yr
Control Efficiency[2]	80	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	10.98	48.09	2.20	9.62
PM_{10}	0.034	6.12	26.81	1.22	5.36
$PM_{2.5}$[4]	0.0058	1.04	4.57	0.21	0.91
Chromium[5]	4.49E-09	2.70E-07	1.18E-06	5.39E-08	2.36E-07
Manganese[5]	2.26E-06	1.35E-04	5.93E-04	2.71E-05	1.19E-04

Notes

[1] Per Facility Personnel.

[2] All operations are fully enclosed or underground; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[5] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions. The additives enter the process during the mixing stage which is near the completion of the final product.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Finished Feed Loadout 1	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	28
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	60	tons/hr
Maximum Annual Throughput[1]	525,600	tons/yr
Dust Sock Control Efficiency[1]	50%	

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.0033	0.20	0.87	0.10	0.43
PM_{10}	0.0008	0.05	0.21	0.02	0.11
$PM_{2.5}$[3]	0.000136	0.01	0.04	0.00	0.02
Chromium[4]	7.29E-10	4.38E-08	1.92E-07	2.19E-08	9.58E-08
Manganese[4]	3.66E-07	2.20E-05	9.62E-05	1.10E-05	4.81E-05

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-2 Particulate Emission Factors for Grain Processing Facilities; "Animal feed mills, Feed shipping".

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[4] Per Facility Personnel, the feed additives contain trace metals Chromium and Manganese. The composition from the additives was scaled and applied to the PM emission factor to determine trace metal emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Truck Receiving Pit #1 and #3	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	29
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	12 tons/hr
Maximum Annual Throughput[1]	105,000 tons/yr
Baghouse Control Efficiency[3]	99%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.18	2.16	9.45	0.02	0.09
PM_{10}	0.059	0.71	3.10	0.01	0.03
$PM_{2.5}$	0.01	0.12	0.53	0.001	0.01

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain receiving , Straight Truck".

[3] Baghouse control efficiency from EPA-452/F-03-025, Air Pollution Control Technology Fact Sheet, Fabric Filter - Pulse-Jet Cleaned Type (also referred to as Baghouses).

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Headhouse & Material Handling (Grain)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	30
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	36	tons/hr
Maximum Annual Throughput[1]	315,000	tons/yr
Control Efficiency[2]	80	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	2.19	9.61	0.44	1.92
PM_{10}	0.034	1.22	5.36	0.24	1.07
$PM_{2.5}$[4]	0.0058	0.21	0.91	0.04	0.18

Notes

[1] Per Facility Personnel.

[2] All operations are fully enclosed or underground; therefore, a control efficiency of 80% was applied to enclosed matieral transfers per WVDEP General Permit G40-C Instructions page 17.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Headhouse & Material Handling Nonenclosed	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	31
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	6	tons/hr
Maximum Annual Throughput[1]	52,500	tons/yr
Control Efficiency[2]	0	%

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.061	0.73	3.20	0.73	3.20
PM_{10}	0.034	0.41	1.79	0.41	1.79
$PM_{2.5}$[4]	0.0058	0.07	0.30	0.07	0.30

Notes

[1] Per Facility Personnel. Calculation accounts for pile loading and unloading.

[2] Material handling operations related to the outdoor storage piles are not controlled.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Headhouse and grain handling".

[4] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

Civil & Environmental Consultants, Inc.

SUBJECT PTE Calculations - Temporary Outdoor Grain Storage
PROJECT Perdue Foods, LLC. - Hurlock Complex
Hurlock, MD

PROJECT NO. 343-365
SHEET 32

Assumptions:

Storage Pile Footprint[1]	2.95	acres
Control Efficiency[5]	75	%

Pollutant	Emission Factor[2,3] (lb/day/acre)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate[4] (ton/yr)	Controlled Hourly Emission Rate[5] (lb/hr)	Controlled Annual Emission Rate[5] (ton/yr)
PM	16.96	2.08	9.13	0.52	2.28
PM_{10}	4.24	0.52	2.28	0.13	0.57
$PM_{2.5}$	0.72	0.09	0.39	0.02	0.10

Notes

[1] Per Facility Personnel. The storage pile footprint consists of two outdoor grain storage piles. One 0.3 acres and one 2.65 acres.

[2] Emission factor emissions were calculated based on calculation methodology in "Control of Open Fugitive Dust Sources", September 1988 (EPA-450/3-88-008), Wind Emissions from Continuously Active Piles, equation 4-9 on page 98. EF = 1.7*(s/1.5)*[(365-P)/235]*(f/15)

s =	9.2	% for clay/dirt mix per AP-42 Table 13.2.4-1.
p =	120	days with > 0.01" precipitation, per AP-42, Section 13.2.1 Figure 13.2.1-2.
f =	23	%, percent of time wind speed exceeds 12 mph, per Iowa Environmental Mesonet, Custom Wind Roses for Cambridge MD from 2015 to 2024. Data for wind speeds >12 mph was not available; conservatively used the percentage of wind speeds > 10 mph.
E =	16.96	Emission factor in lb TSP/day/acre

[3] As per U.S. EPA AP-42 Ch. 9.9.1 Grain Elevators and Processes PM_{10} emissions are 25% of PM emissions and $PM_{2.5}$ emissions are 17% of PM_{10} emissions.

[4] Emissions (tons/year) = E (lb/day/acre) * Exposed area (acres) * (365 days/year) * (1 ton / 2,000 lb)

[5] Per South Coast Air Quality Management District Table XI-E Mitigation Measure Examples: Fugitive Dust From Storage Piles, storage pile wind erosion control efficiency of 75% when the pile has a 3-sided enclosure. The grain storage pile has a 3-sided Jersey barrier to block wind and is always tarped when not loading out to prevent the weathering of the grain.

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Grain Drying	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	33
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	12	tons/hr
Maximum Annual Throughput[1]	105,000	tons/yr
Number of Grain Dryers[1]	2	Dryer
Control Efficiency[2]	50%	

Pollutant	Emission Factor[3] (lb/ton grain handled)	Total Uncontrolled Hourly Emission Rate (lb/hr)	Total Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.22	2.64	11.55	1.32	5.78
PM_{10}	0.055	0.66	2.89	0.33	1.44
$PM_{2.5}$	0.0094	0.11	0.49	0.06	0.25

Notes

[1] Per Facility Personnel.

[2] Dryers are equipped with walls and mesh screens.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain Drying, Column dryer"

[4] Dryer(s) are heated using natural gas burners, for fuel combustion emissions see the burners.

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Storage Tanks	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	34
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	12 tons/hr
Maximum Annual Throughput[1]	105,000 tons/yr
Control Efficiency[2]	0.0 %

Pollutant	Emission Factor[3] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.025	0.30	1.31	0.30	1.31
PM_{10}	0.0063	0.08	0.33	0.08	0.33
$PM_{2.5}$	0.0011	0.01	0.06	0.01	0.06

Notes

[1] Per Facility Personnel.

[2] Per Facility Personnel storage tanks are not controlled.

[3] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Storage bin"

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Grain Loadout #2 (Tank 10) and Tank 7	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	35
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	12 tons/hr
Maximum Annual Throughput[1]	105,000 tons/yr
Dust Sock Control Efficiency[1]	50%

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.086	1.03	4.52	0.52	2.26
PM_{10}	0.029	0.35	1.52	0.17	0.76
$PM_{2.5}$	0.0049	0.06	0.26	0.03	0.13

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain shipping, Truck (unspecified)".

Civil & Environmental Consultants, Inc.			
SUBJECT	PTE Calculations - Mechanical Grain Loadout #3 (Rail)	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	36
	Hurlock, MD		

Assumptions:

Maximum Hourly Throughput[1]	12	tons/hr
Maximum Annual Throughput[1]	105,000	tons/yr
Proposed Vortex Spout Control Efficiency[1]	99.99%	

Pollutant	Emission Factor[2] (lb/ton grain handled)	Uncontrolled Hourly Emission Rate (lb/hr)	Uncontrolled Annual Emission Rate (ton/yr)	Controlled Hourly Emission Rate (lb/hr)	Controlled Annual Emission Rate (ton/yr)
PM	0.027	0.32	1.42	3.24E-05	1.42E-04
PM_{10}	0.0022	0.03	0.12	2.64E-06	1.15E-05
$PM_{2.5}$	0.00037	4.43E-03	1.94E-02	4.43E-07	1.94E-06

Notes

[1] Per Facility Personnel.

[2] U.S. EPA AP-42 Ch. 9.9.1 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators; "Grain shipping, Railcar".

Civil & Environmental Consultants, Inc.

SUBJECT	PTE Calculations - Facility Roadways	PROJECT NO.	343-365
PROJECT	Perdue Foods, LLC. - Hurlock Complex	SHEET	37
	Hurlock, MD		

Symbol	Description	PE Value	PM10 Value	PM2.5 Value	Units	Basis
k	Paved Road Particulate Size Multiplier	0.011	0.0022	0.00054	lb/VMT	AP-42, Section 13.2.1-1
k	Unpaved Road Particulate Size Multiplier	4.9	1.5	0.15	lb/VMT	AP-42, Table 13.2.2-2
sL	Paved Road Silt Loading	1.1	1.1	1.1	g/m^2	AP-42, Table 13.2.1-3
s	Unpaved Road Surface Material Silt Content	4.80	4.80	4.80	%	AP-42, Table 13.2.2-1
a	Unpaved Road emperical constant a	0.7	0.9	0.9	-	AP-42, Table 13.2.2-2
b	Unpaved Road emperical constant b	0.45	0.45	0.45	-	AP-42, Table 13.2.2-2
W	Average Vehicle Weight	28.66	28.66	28.66	tons	Facility Personnel
VMT	Paved Road Vehicle Miles Traveled	4,834	4,834	4,834	miles	Facility Personnel
VMT	Unpaved Vehicle Miles Traveled	3,471	3,471	3,471	miles	Facility Personnel
P	Number of Wet Days	120	120	120	days	AP-42, Section 13.2.1-2
CE	Paved Roadway Control Efficiency	0%	0%	0%	%	-
CE	Unpaved Roadway Control Efficiency	0%	0%	0%	%	-
Max Hrs	Maximum Hours of Operation	8,760	8,760	8,760	hrs/year	-
Conversion	Conversion	2,000	2,000	2,000	lbs/ton	-

Daily Basis Emission Factor Calculation for Paved Roadways (AP-42, Section 13.2.1 Equation 2)
EF = k(sL)^0.91 x (W)^1.02 x (1 - P/4N)

Description	PE Value	PM10 Value	PM2.5 Value	Units
Paved Roadway Emission Factor	0.34	0.07	0.02	lb/VMT
Paved Roadway Uncontrolled Emissions	0.82	0.16	0.04	tons/year
	0.19	0.04	0.01	lbs/hr
Paved Roadway Controlled Emissions	0.82	0.16	0.04	tons/year
	0.19	0.04	0.01	lbs/hr

Emission Factor Calculation for Unpaved Roadways at Industrial Sites (AP-42 Chapter 13.2.2 Unpaved Roads, Equations 1a and 2)
E = k*([s/12]^a)*([W/3]^b)*([365-P]/365)

Description	PE Value	PM10 Value	PM2.5 Value	Units
Unpaved Roadway Emission Factor	4.782	1.219	0.122	lb/VMT
Unpaved Roadway Uncontrolled Emissions	8.299	2.115	0.211	tons/year
	1.895	0.483	0.0483	lbs/hr
Unpaved Roadway Controlled Emissions	8.299	2.115	0.211	tons/year
	1.895	0.483	0.0483	lbs/hr

Description	PE Value	PM10 Value	PM2.5 Value	Units
Total Roadway Uncontrolled Emissions	0.82	2.278	0.252	tons/year
	0.19	0.520	0.057	lbs/hr
Total Roadway Controlled Emissions	0.82	2.278	0.252	tons/year
	0.19	0.520	0.057	lbs/hr

Truck Type	Max Annual Number of Trucks (trucks/yr)	Average Truck Weight (tons)	Approx. Round Trip Miles Paved (miles/truck)	Approx. Annual Miles Traveled Paved (miles/yr)	Approx. Round Trip Miles Unpaved (miles/truck)	Approx. Annual Miles Traveled Unpaved (miles/yr)
Feed Ingredients Truck (Salt and Methionine)	12	28	0.30	4	0.21	3
Feedmill Ingredients - Wheat	500	28	0.30	148	0.21	106
Feedmill Ingredients - Corn	2,600	28	0.30	768	0.21	552
Feedmill Haul Trucks	7,800	28	0.30	2,305	0.21	1,655
Wheat Haul Rail - Feedmill	50	91	0.30	15	0.21	11
Corn Haul Rail - Feedmill	250	91	0.30	74	0.21	53
Grain Trucks Hauled /Loaded Out - Soybeans	4,800	28	0.30	1,418	0.21	1,018
Grain Trucks Hauled /Loaded Out - Corn	350	28	0.30	103	0.21	74
Total	16,362	29	--	4,834	--	3,471

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: Perdue AgriBusiness LLC

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels (µg/m^3)			Estimated Premises Wide Emissions of TAP			
						Actual Total Existing TAP Emissions	Projected TAP Emissions from Proposed Installation	Premises Wide Total TAP Emissions	
			1-hour	8-hour	Annual	(lb/hr)	(lb/hr)	(lb/hr)	(lb/yr)
ex. ethanol	*64175*	*II*	*18843*	*3769*	*N/A*	*0.60*	*0.15*	*0.75*	*1500*
ex. benzene	*71432*	*I*	*80*	*16*	*0.13*	*0.5*	*0.75*	*1.00*	*400*
Chromium	7440473	I	N/A	5	N/A	0.0002	-	0.0002	1.43
Manganese	7439965	II	N/A	2	N/A	0.0033	-	0.0033	28.88
Iron	7439896	N/A	N/A	1230	N/A	0.0013	-	0.0013	11.34
Copper	7440508	II	N/A	2	N/A	0.0003	-	0.0003	2.25
Iodine	7553562	N/A	10.38	1.0381	N/A	0.00007	-	0.00007	0.64

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (http://www.mde.maryland.gov) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))
A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))
A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3, and any applicable annual screening level for the TAP must be greater than 1 µg/m^3.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

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FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: Perdue AgriBusiness LLC

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels (µg/m^3)			Estimated Premises Wide Emissions of TAP			
						Actual Total Existing TAP Emissions	Projected TAP Emissions from Proposed Installation	Premises Wide Total TAP Emissions	
			1-hour	8-hour	Annual	(lb/hr)	(lb/hr)	(lb/hr)	(lb/yr)
ex. ethanol	*64175*	*II*	*18843*	*3769*	*N/A*	*0.60*	*0.15*	*0.75*	*1500*
ex. benzene	*71432*	*I*	*80*	*16*	*0.13*	*0.5*	*0.75*	*1.00*	*400*
Selenium	7782492	II	NA	2	NA	0.00001	-	0.00001	0.11
Zinc	7440666	II	1000	500	NA	0.00519	-	0.00519	45.47

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (http://www.mde.maryland.gov) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))
A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))
A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3, and any applicable annual screening level for the TAP must be greater than 1 µg/m^3.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)
In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	*Thermal Oxidizer*	*99*	*$50,000*	*$100,000*	*no*
ex. ethanol and benzene	*Low VOC materials*	*80*	*0*	*$100.000*	*yes*
Cr, Mn, Fe, I, Cu	Full enclosure (mixer & feedmill)	80%	Existing	Existing	yes
Cr, Mn, Fe, I, Cu	Dust sock (Loadout 1)	50%	Existing	Existing	yes
Cr, Mn, Fe, I, Cu	Subpart DDDDDDD BMPs	-	Existing	Existing	yes

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)
Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels ($\mu g/m^3$)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis ($\mu g/m^3$)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
ex. ethanol	*64175*	*18843*	*3769*	*N/A*	*0.75*	*1500*	*0.89*	*N/A*	*N/A*	*N/A*	*N/A*	*AER*
ex. benzene	*71432*	*80*	*16*	*0.13*	*1.00*	*400*	*0.04*	*36.52*	*1.5*	*1.05*	*0.12*	*Screen*
Chromium	7440473	N/A	5	N/A	0.0002	1.43	0.0179	N/A	N/A	N/A	N/A	AER
Manganese	7439965	N/A	2	N/A	0.0033	28.88	0.00716	N/A	N/A	N/A	N/A	AER
Iron	7439896	N/A	1230	N/A	0.0013	11.34	4.4034	N/A	N/A	N/A	N/A	AER
Copper	7440508	N/A	2	N/A	0.0003	2.25	0.00716	N/A	N/A	N/A	N/A	AER
Iodine	7553562	10.38	1.0381	N/A	0.00007	0.64	0.00372	N/A	N/A	N/A	N/A	AER

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)
In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	*Thermal Oxidizer*	*99*	*$50,000*	*$100,000*	*no*
ex. ethanol and benzene	*Low VOC materials*	*80*	*0*	*$100.000*	*yes*
Se, Zn	Full enclosure (mixer & feedmill)	80%	Existing	Existing	yes
Se, Zn	Dust sock (Loadout 1)	50%	Existing	Existing	yes
Se, Zn	Subpart DDDDDDD BMPs	-	Existing	Existing	yes

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)
Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels ($\mu g/m^3$)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis ($\mu g/m^3$)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
ex. ethanol	*64175*	*18843*	*3769*	*N/A*	*0.75*	*1500*	*0.89*	*N/A*	*N/A*	*N/A*	*N/A*	*AER*
ex. benzene	*71432*	*80*	*16*	*0.13*	*1.00*	*400*	*0.04*	*36.52*	*1.5*	*1.05*	*0.12*	*Screen*
Selenium	7782492	N/A	2	N/A	0.00001	0.11	0.00716	N/A	N/A	N/A	N/A	AER

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

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SAFETY DATA SHEET

SECTION 1: Identification of the Substance and the Company/Supplier

Product identifier	**Generic Trace Mineral Premix with or without Selenium and 0.02% Se to 0.99% Se Selenium Premixes**
Other means of identification	
Synonyms	Name of company for which the Private Label Generic Trace Mineral Premix was manufactured, followed by a Name designation provided by the purchasing company.
Recommended use	As a source of essential trace mineral elements for complete animal feeds, concentrates and mineral products.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer	
Company name	Eastern Minerals, Incorporated
Address	Bainbridge, GA 39818
Telephone	1-229-246-3396
Website	www.eminerals.com
Emergency telephone number	CHEMTREC (800) 424-9300

SECTION 2: Hazards Identification

Physical hazards	Not classified.	
Health Hazards	Sensitization, skin	Category 1
OSHA defined hazards	Not classified.	
Label elements		

Signal word	Warning
Hazard statement	May cause an allergic skin reaction.
Precautionary statement	
Prevention	Avoid breathing dust/fume. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.
Response	If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.

SECTION 3: Composition/Information on Ingredients

Heterogeneous Mixture of Multiple Mineral and Trace Mineral Element Compounds

Chemical Name	CAS Number	Normal % Range
Calcium Carbonate	471-34-1	Carrier
Sodium Chloride	7647-14-5	Carrier

Chemical Name (Contd.)	CAS Number	Normal % Range
Potassium Chloride	7447-40-7	Carrier
Zinc Oxide	1314-13-2	Variable*
Zinc Sulfate Monohydrate	7446-19-7	Variable*
Zinc Hydroxychloride	12167-79-2	Variable*
Manganous Oxide (Manganese Oxide)	1344-43-0	Variable*
Manganese Sulfate Monohydrate	10034-96-5	Variable*
Manganese Hydroxychloride	39438-40-9	Variable*
Ferrous Carbonate	563-71-3	Variable*
Ferrous Sulfate Monohydrate	17375-41-6	Variable*
Copper (Cupric) Sulfate	7758-98-7	Variable*
Copper (Cupric) Hydroxychloride	1332-65-6	Variable*
Copper (Cupric) Oxide	1317-38-0	Variable*
Calcium Iodate	7789-80-2	Variable*
EDDI (Ethylenediamine Dihydriodide)	5700-49-2	Variable*
Potassium Iodide	7681-11-0	Variable*
Cobalt carbonate	513-79-1	Variable*
Cobalt Sulfate Monohydrate	10124-43-3	Variable*
Sodium Selenite	10102-18-8	0.044 to 0.133%**
Selenium Yeast	7782-49-2	5.00 to 15.00%**
Sodium Molybdate	7631-95-0	0.30% to 0.60%**
Chromium Propionate	191358-82-4	3.50 to 5.00%**
White mineral oil (petroleum)	8042-47-5	Variable*
Calcium Stearate	1592-23-0	0.30% anti-cake
Magnesium Oxide	1309-48-4	5.00% anti-cake

* Based on desired trace mineral element ppm desired in the complete feed, concentrate or mineral product and the addition rate of the premix.
**Based on addition rate of premix to the complete feed and/or the level of other elements in the premix.

SECTION 4: First Aid Measures

Inhalation — If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

Skin contact — Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists.

Eye contact — Rinse with water. Get medical attention if irritation develops and persists.

Ingestion — Give one or two glasses of water if patient is alert and able to swallow. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed — Direct contact with eyes may cause temporary irritation. Rash. Dermatitis. May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment needed — Treat symptomatically. Symptoms may be delayed.

General information — Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5: Fire-fighting Measures

Suitable extinguishing media — Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media — None known.

Specific hazards arising from the chemical — During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters — Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions — Use water spray to cool unopened containers.

Specific methods — Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards — This product is not flammable or combustible.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Provide adequate ventilation. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of this SDS.
Methods and materials for containment and cleaning up	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Avoid release to the environment. Following product recovery, flush area with water. For waste disposal, see section 13 of this SDS.
Environmental precautions	Avoid release to the environment. Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

SECTION 7: Handling and Storage

Precautions for safe handling	Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes. Avoid contact with water and moisture. Keep away from strong acids. Practice good housekeeping.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container or bag. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of this SDS). Becomes hygroscopic at high relative humidity. Avoid humid or wet conditions as product will cake.

SECTION 8: Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Zinc Oxide (CAS 1314-13-2)	PEL	5.0 mg/m^3	Respirable fraction.
Zinc Sulfate Monohydrate (CAS 746-19-7)	PEL	15.0 mg/m^3	Total dust.
Zinc Hydroxychloride (CAS 12167-79-2)	PEL	1.0 mg/m^3	ZnCl dust 8 hr. shift
Manganese Oxide (CAS 1344-43-0)	Ceiling	5.0 mg/m^3	*
Manganese Hydroxychloride (CAS 39438-40-9)	PEL	1.0 mg/m^3	8 hr. shift
Copper (Cupric) Hydroxychloride (CAS 1332-65-6)	PEL	1.0 mg/m^3	8 hr. shift
Copper (Cupric) Oxide (CAS 1371-38-0)	TWA	1.0 mg/m^3	Dust & mist
Calcium Iodate (CAS 77898-80-2) TN & CA	TWA	5.0 mg/m^3	*
EDDI (CAS 5700-49-2)	PEL	None established	
Calcium Carbonate (CAS 471-34-1)	OES	10.0 mg/m^3	8 hr. shift
Sodium Selenite (CAS 10102-18-8)	PEL	0.2 mg/m^3	*
Selenium Yeast (No CAS, use Sodium Selenite)	PEL	0.2 mg/m^3	*
White mineral oil (Petroleum) (CAS 8042-47-5)	PEL	5.0 mg/m^3	Mist.
Calcium Stearate (CAS 1592-23-0)	PEL	None established	
Magnesium Oxide (CAS 1309-48-4)	TWA	15.0 mg/m^3	total particulate.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Zinc Oxide (CAS 1314-13-2)	STEL	10.0 mg/m^3	Respirable fraction.
	TWA	2.0 mg/m^3	Respirable fraction.
Zinc Hydroxychloride (CAS 12167-79-2)	TLV	1.0 mg/m^3	ZnCl dust 8 hr shift
Manganese Oxide (CAS 1344-43-0)	TWA	0.1 mg/m^3	Inhalable fraction.
Manganese Sulfate Monohydrate (CAS 10034-96-5)	TWA	1.0 mg/m^3	8 hr shift
Ferrous Carbonate (CAS 563-71-3)	TWA	1.0 mg/m^3	*
Ferrous Sulfate Monohydrate (CAS 17375-41-6)	TWA	1.0 mg/m^3	*
Copper (Cupric) Hydroxychloride (CAS 1332-65-6)	PEL	1.0 mg/m^3	8 hr shift
Copper (Cupric) Sulfate (CAS 7758-98-7)	TWA	1.0 mg/m^3	Dust and mist.
Copper (Cupric) Oxide (CAS 1317-38-0)	TWA	1.0 mg/m^3	Dust & mist
Potassium Iodide (CAS 7681-11-0)	TWA	0.01 ppm	Inhalable fraction/vapor
Cobalt carbonate (CAS 513-79-1)	TWA	0.02 mg/m^3	*

US. ACGIH Threshold Limit Values, continued

Components	Type	Value	Form
Cobalt Sulfate (CAS 10124-43-3)	TWA	0.02 mg/m³	*
Sodium Selenite (CAS 10102-18-8)	TWA	0.02 mg/m³	Respirable fraction.
		0.2 mg/m³	*
Selenium Yeast (No CAS, use Sodium Selenite)	TLV	0.2 mg/m³	*
Sodium Molybdate Anhydrous (7631-95-0)	TWA	5.0 mg/m³	Soluble Molybdenum
Chromium Propionate (Propionic Acid)(CAS 79-09-4)	TWA	10.0 ppm	Total
Magnesium Oxide (CAS 1309-48-4)	TWA	10.0 mg/m³	Total inhaled

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	Ceiling	15.0 mg/m³	Dust.
	STEL	10.0 mg/m³	Fume.
	TWA	5.0 mg/m³	Fume.
		5.0 mg/m³	Dust.
Manganese oxide (CAS 1344-43-0)	STEL	3.0 mg/m³	Fume.
Manganese Hydroxychloride (CAS 39438-40-9)	STEL	3.0 mg/m³	15 Minutes
Ferrous Carbonate (CAS 563-71-3)	TWA	1.0 mg/m³	*
Copper Sulfate (CAS 7758-98-7)	TWA	1.0 mg/m³	Dust and mist.
Sodium Selenite (CAS 10102-18-8)	TWA	1.0 mg/m³	Fume.
	TWA	0.2 mg/m³	*
Sodium Molybdate Anhydrous (CAS 7631-95-0)	TWA	5.0 mg/m³	Soluble Molybdenum
Chromium Propionate (Propionic Acid)(CAS 79-09-4)	TWA	10.0 ppm	Total
	STEL	15.0 ppm	Total
White mineral oil (Petroleum) (CAS 8042-47-5)	STEL	10.0 mg/m³	Mist.
	TWA	5.0 mg/m³	Mist.

*Indicates information is not available.
Note: If a compound is not listed in any of these three tables, no data could be located.
Note: Polysaccharide complexes of the various trace mineral elements do not have an individual CAS or other number. As the trace element compound has not been chemically altered, they are covered by the inorganic sulfate form of the various trace element compounds in this table.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cobalt carbonate	15.0 µg/l	Cobalt	Urine	*
(CAS 513-79-1)	1.0 µg/l	Cobalt	Blood	*

Appropriate engineering controls Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Unvented, tight fitting goggles should be worn in dusty areas.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing.

Respiratory protection Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: Physical and Chemical Properties

Appearance	Depending on ingredients used, can be an off white powder/granule mixture or a grey to green-gray powder.
Physical state	Solid.
Form	Heterogeneous mixture.
Color	Off white to gray/green-gray.
Odor	Metallic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	1473.8 °F (801 °C) - Estimated
Initial boiling point and boiling range	2669 °F (1465 °C) (760 mmHg) (760 mm Hg) - Estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available
Flammability limit - upper (%)	Not available
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	2.4 mm Hg (1376.6 °F (747 °C) - Estimated
Vapor density	Not available.
Relative density	2.16 (H2O = 1) - Estimated, Varuable
Solubility	
Solubility (water)	Dependent on ingredients used 0.0 to 60 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	55 - 90 lb/ft³
Molecular formula	NaCl or Calcium Carbonate and Trace Minerals (including Selenium)
Molecular weight	Varies by ingredient content
pH in aqueous solution	Varies by ingredient **content**

SECTION 10: Stability and Reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	Avoid contact with strong acids. May become corrosive to metals when wet.
Hazardous decomposition products	At high temperatures it is possible for compounds to lose waters of hydration and this may alter chemical form of compound if a sulfate or chloride.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	May cause an allergic skin reaction. If applied to damaged skin, absorption can occur with effects similar to those via ingestion.
Eye contact	Dust in the eyes will cause irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Rash. Dermatitis. May cause an allergic skin reaction. May cause minor irritation on eye contact. Exposure may cause temporary irritation, redness, or discomfort. For ingestion, consuming less than a few grams would not be harmful. The following effects were observed after ingesting an excessive quantity: nausea and vomiting, diarrhea, cramps, restlessness, irritability, dehydration, water retention, nose bleed, gastrointestinal tract damage, fever, sweating, sunken eyes, high blood pressure, muscle weakness, dry mouth and nose, shock, cerebral edema (fluid on brain), pulmonary edema (fluid in lungs), blood cell shrinkage, and brain damage (due to dehydration of brain cells). Death is generally due to cardiovascular collapse or CNS damage.

Information on toxicological effects

Acute toxicity

May cause an allergic skin reaction. In some cases of confirmed hypertension, ingestion may result in elevated blood pressure.

Toxicity Data

Components	Species	Test Results
Zinc oxide (CAS 1314-13-2)		
Acute		
Inhalation		
LC50	Rat	> 5700 mg/m3
Oral		
LD50	Mouse	2000 - 5000 mg/kg
Manganese oxide (CAS 1344-43-0)		
Acute		
Inhalation		
LC50	Rat	> 5.35 mg/l, 4 Hours
Ferrous Carbonate (CAS 563-71-3)		
Acute		
Oral		
LD50	Mouse	3800 mg/kg
Copper (Cupric) Sulfate Pentahydrate (CAS 7758-99-8)		
Acute		
Oral		
LD50	Rat	482 mg/kg, Anhydrous
Dermal		
LD50	Rat	2000 mg/kg, Andydrous
Copper (Cupric) Oxide (CAS 1317-38-0)		
Acute		
Oral		
LD50	Rat	470 mg/kg
Intraperitoneal		
LD50	Rat	273 mg/kg
Intratracheal		
LD50	Rat	250 mg/kg
Cobalt carbonate (CAS 513-79-1)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 5.08 mg/l, 4 Hours
Oral		
LD50	Rabbit	250 mg/kg
	Rat	434 mg/kg
Calcium Iodate (CAS 7789-80-2)		
Acute		
Oral		
LD50	Mouse	358.667 mg/kg
Potassium Iodide (CAS 7681-11-0)		
Acute		
Oral		
LD50	Mouse	1862 mg/kg
LD50	Rabbit	916 mg/kg

Toxicity data, continued

Components	Species	Test Results
Sodium Molybdate - Ahydrous		
Acute		
Dermal		
LD50	Rat	>2000 mg/kg
Inhalation		
LC50	Rat	1768 mg/m^3
Oral		
LD50	Rat	3400 mg/kg
Intraperitoneal		
LD50	Rat	489 mg/kg
Intraperitoneal		
LD50	Mouse	257 mg/kg
Sodium Chloride (CAS 7647-14-5)		
Acute		
Oral		
LD50	Mouse	4000 mg/kg
	Rat	3000 mg/kg
Other		
LD50	Mouse	2602 mg/kg
Calcium Stearate (CAS 1592-23-0)		
Acute	Not Classified	
Magnesium Oxide		
Acute	None Available	
White mineral oil (petroleum) (CAS 8042-47-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	2.18 mg/l, 4 Hours

Note: Data was not available for those compounds not listed.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Dust in the eyes will cause irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium Selenite (CAS 10102-18-8) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Due to the physical form of the product it is not an aspiration hazard.

SECTION 12: Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.
Information below is for each individual compound in the mixture.

Components		Species	Test Results
Cobalt carbonate (CAS 513-79-1)			
Aquatic			
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/L, 96 hours
Copper Sulfate (CAS 7758-98-7)			
Aquatic			
Crustacea	EC50	Water flea (Bosmina longirostris)	0.0037 mg/L, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0089 - 0.0138 mg/L, 96 hours
Sodium Chloride (CAS 7647-14-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	340.7 - 469.2 mg/L, 48 hours
Fish	LC50	Rainbow trout,donaldson trout Rainbow trout (Salmo gairdneri)	4747 - 7824 mg/L, 96 hours
Sodium Selenite (CAS 10102-18-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.5 - 1.9 mg/L, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	1.47 - 3.3 mg/L, 96 hours
Zinc Oxide (CAS 1314-13-2)			
Aquatic			
Crustacea	LC50	Water flea (Daphnia magna)	.098 mg/L, 48 hours
	EC50	Water flea (Ceriodaphnia dubia)	0.413 mg/L, 48 hours
Microalgae	LC50	Alagae (Selenastrum capricornutum	0.136 mg/L, 72 hours
Zinc Sulfate (CAS 7446-19-7)			
Aquatic			
Fish	LC50	Rainbow trout (Salmo gairdneri)	4.76 g/L, 48 hours
Crustacea	LC50	Marine edible carb	741.3 ppm, 24 hours
Multiple additional tests			
Manganese Sulfate Monohydrate (CAS-10034-96-5)			
Aquatic			
Crustacea	LC50	Water flea (Daphnia magna)	8.3 mg/L, Anhydrous
Fish	LC50	Fathead minnow	30.0 mg/L, Anhydrous
Copper (Cupric) Sulfate (CAS 7758-98-7)			
Acquatic			
Crustacea	LC50	Water flea (Daphnia magna)	0.24 mg/L, 48 Hours
Copper (Cupric) Hydroxychloride (CAS 1332-65-6)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	29.7 mg/L, 48 hours
Microalgae	LC50	Alagae (Scendesmus obliquus)	101.0 mg/L, 96 hours
Calcium Iodate (CAS 7789-82-2)			
Aquatic			
Fish	LC50	Freshwater fish	9075.0 mg/L 96 hours
Potassium Iodide (CAS 7681-11-0)			
Aquatic			
	LC50	Rainbow trout (Salmo gairdneri)	8960.0 mg/l, 96 hours
Cobalt Sulfate Monohydrate (CAS 10124-43-3)			
Aquatic			
Microlgae	EC50	Alagae (Selenastrum capricornutum	0.04 - 0.72 mg/L, 72 hours
Calcium Carbonate (CAS 471-34-1)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	>56000 mg/L, 96 hours
Sodium Molybdate (CAS 191358-82-4)			
Aquatic			
Fish	LC50	Striped bass (Morone saxatilis)	>79.8 mg/L, 96 Hours
Reptile	LC50	Narrow mouthed frog (Microhyla carolinensis)	960 µg/L, 7 days

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	None known.

SECTION 13: Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport information

DOT Not regulated as dangerous goods.
IATA Not regulated as dangerous goods.
IMDG Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15. Regulatory Information

US federal regulations
All components are on the U.S. EPA TSCA Inventory List.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Cobalt carbonate (CAS 513-79-1) LISTED
Copper Sulfate (CAS 7758-98-7) LISTED
Manganese oxide (CAS 1344-43-0) LISTED
Sodium Selenite (CAS 10102-18-8) LISTED
Zinc oxide (CAS 1314-13-2) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity lower value	Threshold planning quantity upper value
Sodium Selenite	10102-18-8	100 lbs		100 lbs	10,000 lbs

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting) Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt carbonate (CAS 513-79-1)
Manganese oxide (CAS 1344-43-0)
Sodium Selenite (CAS 10102-18-8)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US State Regulations

US. Pennsylvania Worker and Community Right-to-Know Law

Copper Sulfate (CAS 7758-98-7)
Ferrous Carbonate (CAS 563-71-3)
White mineral oil (petroleum) (CAS 8042-47-5)
Zinc oxide (CAS 1314-13-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: Other Information, Including Date of Preparation or Last Revision

Issue date 10-June-2015
Revision date -
Version # 01
Flammability: 0
Physical hazard: 0
Personal protection: A

Disclaimer All statements, technical information and recommendations contained herein are, to the best of our knowledge, reliable and accurate; however, no warranty, either expressed or implied is made with respect thereto, nor will any liability be assumed for damages resultant from the use of the material described. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations. It is also the responsibility of the user to maintain a safe workplace. The user should consider the health hazards and safety information provided herein as a guide and should take the necessary steps to instruct employees and to develop work practice procedures to ensure a safe work environment.

This information is not intended as a license to operate under, or a recommendation to practice or infringe upon any patent of this Company or others covering any process, composition of matter or use.

#485

PERDUE OMRI TRACE MINERAL PREMIX #485

For Manufacturing of Commercial Feed

GUARANTEED ANALYSIS:

Calcium (Ca) Min	3.50%
Calcium (Ca) Max	4.50%
Manganese (Mn) Min	13.40%
Zinc (Zn) Min	8.00%
Iron (Fe) Min	5.33%
Copper (Cu) Min	6670 ppm
Iodine (I) Min	3000 ppm
Selenium (Se) Min	400 ppm
Chromium (Cr) Min	267 ppm

INGREDIENTS: Calcium Carbonate, Manganese Sulfate, Zinc Sulfate, Ferrous Sulfate, Copper Carbonate, Calcium Iodate, Sodium Selenite, Chromium Propionate.

NOTE

This premix contains added Selenium. When added at a rate of 1.50 pounds per ton of feed this premix will provide 0.3 ppm of supplemental Selenium. The level of Selenium on a complete feed basis should not exceed 0.3 ppm for chickens, swine, turkeys, sheep, cattle and ducks. In feed supplements for limit feeding, per head per day consumption of Selenium should not exceed 3.0 milligrams for beef cattle or 0.70 milligrams for sheep.

This premix supplies 181.44 milligrams of supplemental Selenium per pound.

CAUTION: FOLLOW LABEL DIRECTIONS. THE ADDITION TO FEED OF HIGHER LEVELS OF THIS PREMIX CONTAINING SELENIUM IS NOT PERMITTED.

Manufactured for:
PERDUE FARMS, INC.
Salisbury, Maryland 21801
Manufactured by:
EASTERN MINERALS, INC.
Henderson, North Carolina 27536
NET WEIGHT 50 Lbs. (22.68 Kg)
E-5-10-24

Hurlock Feedmill, Grain & Hatchery Stack Info

Hatchery

Lochnivar Boiler
Stack Height in feet – 17ft.
Stack Diameter in feet – 8 in. or 0.66 ft.
Exit Velocity in feet per second (ft/s) - ≈ 68.5 ft/s
Flow Rate (acfm) – ≈ 755 ft^3/min
Exit Temperature in degrees Fahrenheit. – 203.7°F
Shortest Distance to Property Line – 320 ft.

Raypack Boiler
Stack Height in feet – 20 ft.
Stack Diameter in feet – 20 in. or 1.66 ft.
Exit Velocity in feet per second (ft/s) - ≈ 10.4 ft/s
Flow Rate (acfm) – ≈ 1,620 ft^3/min
Exit Temperature in degrees Fahrenheit. – 259.2°F
Shortest Distance to Property Line – 305 ft.

Laars Boiler
Stack Height in feet – 20 ft.
Stack Diameter in feet – 16 in. or 1.33 ft.
Exit Velocity in feet per second (ft/s) - ≈ 9.93 ft/s
Flow Rate (acfm) – ≈ 755 ft^3/min
Exit Temperature in degrees Fahrenheit. –
Shortest Distance to Property Line – 295 ft.

Outside (2022) 500 kW Generator
Stack Height in feet – 22ft
Stack Diameter in feet – 8in. or 0.66 ft.
Exit Velocity in feet per second (ft/s) – 173.65 ft/s
Flow Rate (acfm) – 3637 ft^3/min
Exit Temperature in degrees Fahrenheit. - 862°F
Shortest Distance to Property Line – 460 ft.

Inside (1979) 500 kW Generator
Stack Height in feet – 22 ft.
Stack Diameter in feet – 2.33 ft.
Exit Velocity in feet per second (ft/s) – 14.22 ft/s
Flow Rate (acfm) 3637 ft^3/min
Exit Temperature in degrees Fahrenheit
Shortest Distance to Property Line – 425 ft.

Inside (1979) 260kW Generator (Idle)
Stack Height in feet – 22 ft
Stack Diameter in feet – 1.5 ft.
Exit Velocity in feet per second (ft/s)
Flow Rate (acfm)
Exit Temperature in degrees Fahrenheit
Shortest Distance to Property Line – 425 ft.

Feedmill

Clever Brooks Boiler
Stack Height in feet- 32ft
Stack Diameter in feet- 20in. or 1.66 ft.
Exit Velocity in feet per second (ft/s)- 21.39 ft/s
Flow Rate (acfm)- 2,800 ft^3/min
Exit Temperature in degrees Fahrenheit- 400 °F
Shortest Distance to Property Line – 600 ft.

Cyclone 1 & 2 Fan
Stack Height in feet- 42'
Stack Diameter in feet- 28" x 32" rectangle
Exit Velocity in feet per second (ft/s)-
Flow Rate (acfm)- 25,000
Exit Temperature in degrees Fahrenheit- approx. 110 F (varies)
Shortest Distance to Property Line – 600 ft

Cyclone 3 & 4 Fan
Stack Height in feet- 40'
Stack Diameter in feet- 28" x 32" rectangle
Exit Velocity in feet per second (ft/s)-
Flow Rate (acfm)- 25,000
Exit Temperature in degrees Fahrenheit- approx. 110 F (varies)
Shortest Distance to Property Line – 600 ft

BH-2
Stack Height in feet- 40 ft.
Stack Diameter in feet- (square) 2 ft. X 3 ft.
Exit Velocity in feet per second (ft/s)- 36.11 ft/s
Flow Rate (acfm)- 13,000 ft^3/min
Exit Temperature in degrees Fahrenheit- ambient
Shortest Distance to Property Line – 610 ft.

BH-4

Stack Height in feet- 19ft.
Stack Diameter in feet- (square) 2ft. 6in x 1ft. 2in.
Exit Velocity in feet per second (ft/s)- 40 ft/sec
Flow Rate (acfm)- 7,000 ft^3/min MAX
Exit Temperature in degrees Fahrenheit- Ambient +10 °F
Shortest Distance to Property Line – 590 ft.

BH-5

Stack Height in feet- does not exit into atmosphere
Stack Diameter in feet- 6in. or 0.5 ft.
Exit Velocity in feet per second (ft/s)- 135.81 ft/s
Flow Rate (acfm)- 1600 ft^3/min
Exit Temperature in degrees Fahrenheit- ambient air temperature
Shortest Distance to Property Line – stack does not exit to atmosphere

BH-6

Stack Height in feet- stack does not exit to atmosphere
Stack Diameter in feet- 10 in. or 0.83 ft.
Exit Velocity in feet per second (ft/s)- 48.89 ft/s
Flow Rate (acfm)- 1600 ft^3/min
Exit Temperature in degrees Fahrenheit- ambient air temperature
Shortest Distance to Property Line – stack does not exit to atmosphere

Grain

BH-1

Stack Height in feet- 40 ft.
Stack Diameter in feet- 2 ft. X 3 ft.
Exit Velocity in feet per second (ft/s)- 36.11 ft/s
Flow Rate (acfm)- 13,000 ft^3/min
Exit Temperature in degrees Fahrenheit- ambient
Shortest Distance to Property Line – 595 ft.

BH-3

Stack Height in feet- 35 ft.
Stack Diameter in feet- 1.33 ft. X 2 ft.
Exit Velocity in feet per second (ft/s)- 81.45 ft/s
Flow Rate (acfm)- 13,000 ft^3/min
Exit Temperature in degrees Fahrenheit- ambient
Shortest Distance to Property Line – 640 ft.

Berico Dryer

Base – 6 feet – Perforated Dryer Screen 48 feet = total height 54 feet
Berico Dimensions (square): 10 ft. wide x 18 ft. long
560 ft. from property line

Brock Dryer

Base-8 ft. 5 inches – Perforated Dryer Screen 96 ft. = 104 ft. 5 inches total height
Brock Dryer Diameter 24ft.
630 ft. from property line