

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2399-AR-2 AFIN: 45-00253

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Butterball, LLC
3726 Highway 62 West
Yellville, Arkansas 72687

3. PERMIT WRITER:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Industrial Building Construction
NAICS Code: 236210

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
5/15/2020	Modification	-Add VOC, Formaldehyde and Methanol emissions to SN-13, 14, 15. -Permit Boilers at 8,760 hr/yr nat. gas and 1,000 hr/yr fuel oil.

6. REVIEWER'S NOTES:

The facility submitted an application to:

1. Add VOC, Formaldehyde and Methanol emissions to Pellet Coolers SN-13, 14 and 15. Manufacturer data suggests these emissions are present in the pellet coolers.

2. Modify how boilers SN-18 and SN-19 are permitted; each boiler will be permitted to burn natural gas (8,760 hr/yr) and have the option to burn fuel oil as a backup fuel as described in SC#9. Boilers were previously permitted using a worst-case emission factor and 8,760 hr/yr.

Permitted emission rates are increasing/decreasing by -2.2 tpy PM, -4.0 tpy PM₁₀, -8.2 tpy SO₂, 10.1 tpy VOC, 0.8 tpy CO, -5.4 tpy NO_x, 0.02 tpy Chromium, 6.16 tpy Formaldehyde, 0.02 tpy Manganese, -0.21 tpy Total Other HAPs, and 3.49 tpy Methanol.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no active or pending enforcement actions. This permitting action is necessary to add Formaldehyde and Methanol emissions to the pellet coolers SN-13, 14 & 15 given new information from the manufacturer. The facility has constructed but not operated using Termin-8, so it was determined there is no compliance issue.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
20	HAPs	40 CFR Part 63, Subpart ZZZZ 40 CFR Part 60, Subpart IIII
Facility	Chromium and Manganese	40 CFR Part 63, Subpart DDDDDD
18 and 19	SO ₂	40 CFR Part 60, Subpart Dc

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Arsenic	0.01	0.0011	4.10E-04	Y
Beryllium	0.00005	5.5E-06	8.95E-06	N
Cadmium	0.002	0.00022	1.66E-04	Y
Chromium	0.5	0.055	2.12E-03	Y
Cobalt	0.02	0.0022	1.83E-03	Y
Formaldehyde	1.5	0.165	1.435	N
Manganese	0.1 ⁽¹⁾	0.011	1.30E-02	N
Mercury	0.01	0.0011	4.51E-05	Y
POM	0.2	0.022	1.00E-03	Y
Selenium	0.2	0.022	2.09E-04	Y

⁽¹⁾Inhalable standard was used based on information in the SDS.

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Beryllium	0.0005	0.0001	Y
Formaldehyde	15	2.254	Y
Manganese	1.0	0.890	Y

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	AP-42 Table	0.017 lb/ton PM	Choke	40% Choke	Control efficiencies

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	9.9.1-2	0.0025 lb/ton PM ₁₀	Flow and Enclosure	Flow 50% Enclosure	applied in series, not as a sum of all control efficiencies at SN-01. Calculations based on 249,600 tpy
02	AP-42 Table 9.9.1-2	0.017 lb/ton PM 0.0025 lb/ton PM ₁₀	Choke Flow and Enclosure	40% Choke Flow 50% Enclosure	Control efficiencies applied in series, not as a sum of all control efficiencies at SN-02. Calculations based on 374,400 tpy
03	AP-42 Table 9.9.1-1	0.061 lb/ton PM 0.034 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 374,000 tpy
04	AP-42 Table 9.9.1-1	0.061 lb/ton PM 0.034 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 249,000 tpy
05 06	AP-42 Table 9.9.1-2	0.012 lb/ton PM 0.012 lb/ton PM ₁₀	Baghouse	-	Control efficiency accounted for in EF. Calculations based on 187,200 tpy
07 08	AP-42 Table 9.9.1-1	0.061 lb/ton PM 0.034 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 187,200 tpy
09	AP-42 Table 9.9.1-2	0.017 lb/ton PM 0.0025 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 31,200 tpy
10	AP-42 Table 9.9.1-1	0.061 lb/ton PM 0.034 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 7,800 tpy
11 12	AP-42 Table 9.9.1-1	0.025 lb/ton PM 0.0063 lb/ton PM ₁₀	Baghouse	99.5%	Calculations based on 312,000 tpy
13 14 15	AP-42 Table 9.9.1-2	0.15 lb/ton PM 0.075 lb/ton PM ₁₀ VOC = sum of formaldehyde and methanol 0.76 lb/hr Formaldehyde 0.05 lb/hr Methanol	Dual High Efficiency Cyclone	-	Control efficiency accounted for in EF. Calculations based on 208,000 tpy (per source). 1% of Formaldehyde & 1.428% of Methanol in Termin-8 emitted
16 17	Manufacturer Spec. and AP-42 Table 9.9.1-1,2	<u>Transfer to Loadout</u> 0.061 lb/ton PM 0.034 lb/ton PM ₁₀	Metal Dust Filter, Choke Flow, and	20% Metal Dust Filter 40% Choke Flow	Control efficiencies applied in series, not as a sum of all control efficiencies at the

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		<u>Truck Loading</u> 0.0033 lb/ton PM 0.0008 lb/ton PM ₁₀	Enclosure	50% Enclosure	source. Calculations based on 312,000 tpy
18 19	AP-42 Table 1.4-2 and 1.3	<u>Nat. Gas lb/10⁶ scf</u> PM/PM ₁₀ : 7.6 SO ₂ : 0.6 VOC: 5.5 CO: 84 NO _x : 100 <u>Fuel Oil lb/10³ gal</u> PM/PM ₁₀ : 4.6 SO ₂ : 7.1 VOC: 0.252 CO: 5.0 NO _x : 20.0	-	-	Fuel oil Calculations based on 1,000 hr/yr. Nat gas calculations based on 8,760 hr/yr.
20	AP-42 Table 3.3-1	<u>lb/hp-hr</u> PM: 2.20E-03 PM ₁₀ : 2.20E-03 SO ₂ : 2.05E-03 VOC: 2.47E-03 CO: 6.68E-03 NO _x : 0.031	-	-	Limited to 500 hrs/yr, AP-42 EF is an overestimate of the SO ₂ content at the engine, The NSPS limit for this engine is 15 ppm Sulfur (0.0015%)
21	Tanks 4.0.9d Report	VOC Content: 50% 45.42 lbs VOC/yr	-	-	Calculations based on 233,500 gal/yr
22	Tanks 4.0.9d Report	VOC Content: 88% 207.09 lbs VOC/yr	-	-	Calculations based on 192,500 gal/yr
23	Tanks 4.0.9d Report	VOC Content: 75% 85.16 lbs VOC/yr	-	-	Calculations based on 52,700 gal/yr
24	Tanks 4.0.9d Report	VOC Content: 100% 3.13 lbs VOC/yr	-	-	Calculations based on 161,000 gal/yr
25 26	Manufacturer Spec. and AP-42 Table 9.9.1-1	0.025 lb/ton PM 0.0063 lb/ton PM ₁₀	Bin Vent Fabric Filter	99.5%	Calculations based on 313,109 tpy
27	Tanks 4.0.9d Report	VOC Content: 100% 2.06 lbs VOC/yr 33% Formaldehyde 13% Methanol	-	-	Calculations based on 415,419 gal/yr and maximum grain throughput limit

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN ¹	Pollutants	Test Method	Test Interval	Justification
13, 14, 15	Particulate	Method 5	60 minutes	§63.11623

¹The facility is only required to test at SN-13,14, &15 if that is the method that they choose to comply with the requirements of 40 CFR Part 63, Subpart DDDDDD for ensuring the cyclone is designed to reduce emissions of particulate matter by 95 percent or greater.

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
13, 14, 15	Inlet flow rate, inlet velocity, pressure drop, or fan amperage	In accordance with §63.11624(c)(4)	Once per day when the pelleting process is in operation	N
20	Backpressure	Backpressure monitor	Continuous during engine operation	N

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	Grain Received	624,000 tons/yr	Monthly	N
18, 19	No. 2 Fuel Oil Usage	304,232 gallons/yr total combined	Monthly	N
	Sulfur Content	0.05% by weight	As received	N
	Natural Gas Usage	360,284,235 scf	Monthly	N
20	Hours of Operation	500 hours	Monthly	N
	Records of Maintenance Conducted	Per Maintenance Plan and 40 CFR Part 60, Subpart III	As Needed	Y, when did not meet limitation

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 18 (nat. gas), 19 (nat. gas), 25, and 26	5%	[Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]	Inspector Observation
01, 02, 16, 17, 18 (fuel oil), 19 (fuel oil), 20	20%	[Reg.19.503 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]	

18. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

19. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						HAPs	
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	Single	Total	
Truck Wash Disinfectant (50 gal tank)	A-2			1.65E-06					
Santoquin Tote (330 gal tank)	A-3			0.00					

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2399-AR-1

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Butterball, LLC

Permit Number: 2399-AR-2

AFIN: 45-00253

			Old Permit	New Permit
\$/ton factor	23.93	Permit Predominant Air Contaminant	65.1	62.9
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	-2.2	
Minimum Initial Fee \$	500			
Check if Administrative Amendment	<input type="checkbox"/>	Permit Fee \$	400	
		Annual Chargeable Emissions (tpy)	62.9	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	65.1	62.9	-2.2
PM ₁₀	38	34	-4
PM _{2.5}	0	0	0
SO ₂	9.8	1.6	-8.2
VOC	1.8	11.9	10.1
CO	15.8	16.6	0.8
NO _x	29.6	24.2	-5.4
Chromium	0.1	0.12	0.02
Formaldehyde	0.08234	6.24	6.15766
Manganese	0.1	0.12	0.02
Methanol	0	3.49	3.49
Total Other HAPs	0.58	0.37	-0.21