

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0544-AR-17 AFIN: 03-00002

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Baxter Healthcare Corporation
1900 Highway 201 North
Mountain Home, Arkansas 72653

3. PERMIT WRITER:

Andrea Sandage

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Unlaminated Plastics Film and Sheet (except Packaging)
Manufacturing
NAICS Code: 326113

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
7/28/2020	DeMinimis	Remove SN-17, add SN-17Temp
8/6/2020	Modification	Additional EtO controls for SN-116, SN-117, SN-101, SN-119
2/4/2021	DeMinimis	Add SN-123 EtO Misc Non-Stack emissions with RTO

6. REVIEWER'S NOTES:

Baxter Healthcare Corporation (Baxter) owns and operates a manufacturing facility located in Mountain Home, Arkansas. The facility manufactures peritoneal dialysis disposables, blood cell separation disposables, patient connectors, and produces plastics

for the disposables manufacturing. Baxter submitted multiple modifications for the following changes:

- Remove SN-17 Boiler – 42 MMBtu/hr and add SN-17Temp Natural Gas Boiler (42 MMBtu/hr Maximum Heat Input)
- Added additional control for ethylene oxide emissions.
 - SN-116 & SN-117 added (14) Resin Dry Beds each
 - SN-101 – added Thermal Oxidizer downstream of wet scrubber
 - SN-119 – Added (2) Resin Dry Beds
 - SN-88 Tank Head Space Vapors are routed to SN-101
 - Updated conditions for Subpart O
- Add SN-123 Ethylene Oxide Miscellaneous controlled by a Regenerative Thermal Oxidizer (RTO).

Total emission increases are 0.9 tpy PM, 1.6 tpy PM10, 0.2 tpy SO₂, 4.7 tpy CO, 9.2 tpy NO_x, 0.39 tpy Ethylene Glycol, 0.02 Total HAP and 0.5 tpy Sulfuric Acid. Total emission decreases are 1.4 tpy VOC and 0.47 tpy Ethylene Oxide.

The boiler (SN-17Temp) will only burn natural gas and therefore is not subject to 40 C.F.R. Part 63 Subpart JJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area.

Note:

- Removed SC 13&14 due to duplication and SC 33-38 due to no Subpart O requirement for SSM plan.
- Added conditions header for SN-97 and SN-109
- Added EtO testing for SN-101, SN-116, SN-117, SN-119
- Added Ethylene glycol testing for SN-101
- EtO Misc Non-Stack Emissions were ducted to SN-123 RTO and to SN-116 & SN-117 Catalytic Oxidizers.

7. COMPLIANCE STATUS:

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

The facility was last inspected February 24, 2020. There was a high priority violation noted. The ethylene oxide lb/hr limits were exceeded. CAO LIS No. 21-037 was signed May 5, 2021 for exceeding ethylene oxide limits. This permit revision addresses those issues.

8. PSD/GHG APPLICABILITY:

- a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? **N**

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

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
11-15, 57, 76-83, 88, 94, 101, 116-119, 123	Ethylene Oxide	40 CFR Part 63, Subpart A and Subpart O
18	N/A	40 CFR Part 60 Subpart Dc
112	HAPs	40 CFR Part 63 Subpart ZZZZ
112	HC, NO _x , CO & PM	40 CFR Part 60 Subpart IIII

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
SN-17Temp	DM 8-5-2020			
SN-123 RTO	DM 3-1-2021			

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 DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The facility has been reviewed under the NCAP strategy which includes any single NCAP HAP with emissions equal to or greater than 10 tpy or a TLV less than 1 mg/m³.

Only natural gas sources that were updated or added for R-17 were included in this evaluation (SN-17Temp, SN-18, SN-101, SN-116, SN-117, SN-123)

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.

The facility emits HAPs related to incomplete combustion.

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/m³), 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	1.7274E-05	Y
Beryllium	0.00005	5.5E-06	1.0364E-06	Y
Cadmium	0.002	0.00022	9.5005E-05	Y
Chromium	0.003	0.00033	1.2092E-04	Y
Cobalt	0.02	0.0022	7.2549E-06	Y
Formaldehyde	0.37	0.0407	6.4776E-03	Y
Manganese	0.02	0.0022	3.2820E-05	Y
Mercury	0.01	0.0011	2.2456E-05	Y
Nickel	0.1	0.011	1.8137E-04	Y
Polycyclic Organic Matter	0.2	0.022	7.6177E-06	Y
Selenium	0.2	0.022	2.0728E-06	Y

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards Y

If exempt, explain: No H₂S emissions

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
09	Testing & Records	60% IPA density 6.63 lb/gal 99% waste	N/A	N/A	usage - waste = total emissions
17Temp, 18	AP-42 Table 1.4- 1,2,3,4	<u>lb/MMscf</u> PM = 5.7 PM ₁₀ = 1.9 NO _x = 100 CO = 84 VOC = 5.5 SO ₂ = 0.6	N/A	N/A	17Temp – 42 MMBtu/hr Nat Gas Only
41	Records	2% of Grinder Feed goes to B.H. Max Feed 8000tpy	Baghouse	99%	Max equipment capacity
72	Testing	Area = 0.05 ft ² Velocity = 250 fpm	N/A	N/A	
78-83, & 101	Testing Subpart O AP-42 Table 1.4- 1,2,3,4	1,402 lb/hr EtO – Sterilization Chamber #1-#7 Ethylene Glycol – 0.39ppm Sulfuric Acid – 0.16 ppm Thermal Oxidizer NO _x – 2.0 lb/hr CO – 1.0 lb/hr VOC – 5.5 lb/MMscf PM/PM ₁₀ – 7.6 lb/MMscf SO ₂ – 0.6 lb/MMscf Combustion HAPS – 0.028 lb/hr	Scrubber & Thermal Oxidizer	99.9% hourly 99.0% annual	Worst case sent to scrubber = 1,402 lb/hr EtO Max EtO 600,000 lb/yr TO – 1,325°F (min) 15.3 MMBtu/hr (Max) 0.015 MMscf
76, 77, & 94	Testing & Records	Potential: 15% Aeration Room	Catalytic Oxidizer	99%	
88	TANKS	2 tank turnovers /month 24 t.t./yr 8,000 gal tank	N/A	N/A	Assumed 100% ethylene glycol
89&90	TANKS	Tank ht = 24 ft Tank D= 11.7ft 19304 gal 247 t.t./yr	N/A	N/A	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
95	TANKS	Tank ht = 5 ft Tank D= 5ft 734 gal 1280 t.t./yr	N/A	N/A	
95	Mass Balance	Tubing/pelletizing: 11 tubing lines 2 pelletizers 1" D max 7" max distance Film Lines: 42" cool film 64" wide 11 lines	Hood	T/P: 80% Film: 98%	
97	Mass Balance	Max Usage: 100 lb/hr VOC	N/A	N/A	
100	TANKS	15 t.t./yr tank D = 10'6" tank ht. = 39'	N/A	N/A	
108	Mass Balance	15 gal/yr Ink density = 9 lb/gal 2% Dibutyl phthalate 200 lb/yr MeCl	N/A	N/A	
112	Kohler Power Systems Emission Data Sheet & AP 42	0.1290 g/kWh PM 0.0022 lb/hp-hr PM ₁₀ 0.0021 lb/hp-hr SO _x 0.1400 g/kWh VOC 2.9500 g/kWh NO _x 0.1100 g/kWh CO	N/A	N/A	237 HP 177 kW
113	Tanks 4.0.9d	N/A	N/A	N/A	583 gallon tank Diesel Fuel
116 117	AP-42 Table 1.4-1,2,3,4	<u>lb/MMscf</u> PM/PM ₁₀ = 7.6 NO _x = 100 CO = 84 VOC = 5.5 SO ₂ = 0.6	Catalytic Oxidizer	Controlled to 1 ppm (99%)	3.00 MMBtu/hr - 0.00294 MMscf
118	Subpart O	<u>Volumetric Flow</u> 29,217 acfm	Catalytic Oxidizer	99%	
119	Testing	5.0 ppmv	Resin dry beds	99%	
123	Testing	0.15 lb/hr EtO to RTO	Regenerative	99.0%	Plantwide EtO

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	AP-42 Table 1.4-1, 2, 3, 4	RTO NO _x – 100 lb/MMscf CO – 84 lb/MMscf VOC – 5.5 lb/MMscf PM/PM ₁₀ – 7.6 lb/MMscf SO ₂ – 0.6 lb/MMscf Combustion HAPS – 0.0015 lb/hr	Thermal Oxidizer Permanent Total Enclosure (PE)	destruction efficiency	= 0.342 lb/hr – 0.15 lb/hr to RTO RTO – Inlet air flow 11,000 ft ³ /min 1,400°F (min) 6.84 MMscf/yr

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
101	Ethylene Oxide Ethylene Glycol	320	Initial compliance	Subpart O Reg 19.702
116, 117	Ethylene Oxide			
119				
123				Reg 19.702

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)
116, 117	Catalyst Bed Outlet SN-116 – 360 °F SN-117 – 350 °F	Temperature monitor	Continuously Accuracy verified twice per calendar year	N
101	TO Minimum Combustion Zone Outlet Temperature – 1325 °F	Device to continuously measure and record temperature	Continuously while operating Accuracy verified	N

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
			twice per calendar year	
123	RTO Minimum Combustion Zone Outlet Temperature – 1400 °F	Device to continuously measure and record temperature	Continuously while operating Accuracy verified twice per calendar year	N
116, 117, 119	Resin Dry Beds – EtO	FTIR (Fourier Transformed Infrared) monitoring system	Every Two Weeks	N
	Resin Dry Beds – Pressure differential	Pressure Gauge	Daily	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	Ethylene Oxide usage	600,000 lb/yr	monthly	N
116, 117	Bed outlet temperature	SN-116 360°F SN-117 350°F	Continuously while operating	N
	Bed gas pressure drop	of 3 – 7 in. w.g. (at 2000 scfm)	Daily	N
	Enclosure Pressure Differential	-0.005 in H ₂ O	Once each day	N
116, 117, 119	Resin Dry Beds EtO lb/hr and tpy	See Specific Condition # 2	Every two weeks	N
17Temp, 18	natural gas usage	570 MM ft ³ /rolling twelve-month period	monthly	N
18	No.2 fuel oil usage	725,000 gal/rolling twelve-month period	monthly	N
41	amount of waste plastic ground	8,000 tons/yr	monthly	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	Preventive maintenance	N/A	every 3 months	N
97	VOC usage Updated list of sources Updated plot plan Raw materials used Updated MSDSs	90.5 lb/hr, 85 tpy	Monthly	N
101	Liquid level in scrubber liquor tank	18 feet, maximum	weekly	N
	Temperature of TO Combustion Zone Outlet	$\geq 1325^{\circ}\text{F}$	Continuously while operating	N
109	Single HAP usage Combined HAP Updated list of sources Updated plot plan Raw materials used Updated MSDSs	9.17tpy 18.21 tpy	Monthly	N
112	Hours & Reason for Operation	Total: 500 hr/yr Maintenance Checks and testing: 100 hr/yr Non-emergency situations: 50 hr/yr (included in 100 hr/yr limit) Peak shaving/income generation not	As operated	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
		allowed		
112	Purchased fuel specifications	requirements of 40 CFR 80.510 for nonroad diesel fuel	As Purchased	N
112	Manufacturer's emission-related specifications and engine certification	N/A	N/A	N
112	Maintenance and Repair	As per manufacturer instructions	N/A	N
112	Maintenance Plan & Testing Results	N/A	N/A	Y
119	Bed gas pressure drop	of 3 – 7 in. w.g. (at 2000 scfm)	Daily	N
123	Temperature of RTO Combustion Zone Outlet	$\geq 1400^{\circ}\text{F}$	Continuously while operating	N
	Enclosure Pressure Differential	-0.005 in H ₂ O	Once each day	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
17Temp, 18, 101, 116, 117	5% (Natural Gas)	§18.501	Opacity Reading
18	20% (No. 2 Fuel Oil)	§18.501	Opacity Reading
41	5%	§18.501	Preventative maintenance
112	20%	§19.503	Daily Observations when Operating
101, 123 Thermal Oxidizers	5%	§19.503	Daily Observations
116, 117, 118, 119, 123	20%	§19.503	Daily Observations

18. DELETED CONDITIONS:

Former SC	Justification for removal
13, 14	Duplication of SC #9 and SC #10
33-38	Subpart O does not contain any operation and maintenance plan requirements.

19. GROUP A INSIGNIFICANT ACTIVITIES: No updates for R17

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Chiller #1-3(former SN-67) #1 replaced in 2008 (no emissions)	A-1			0.008				
Chiller #5 (former SN-68)	A-1			0.003				
Chiller #4	A-1			None				
Chiller Plant #3 (installed 2007)	A-1			None				
Chiller Plant	A-1			None				
NG Hot Water Heater	A-1	0.01	5.13E-04	4.7E-02	0.07	0.09	4.27E-07	4.27E-07
Portable Transfer Tank of Emergency Generator	A-2			0.00001				
Resin Storage Silo 3A (former SN-59)	A-13	0.0023						
Resin Storage Silo 4A (former SN-60)	A-13	0.0023						
Resin Storage Silo 4B (former SN-61)	A-13	0.0023						
Resin Storage Silo 5 (former SN-62)	A-13	0.0023						
Resin Storage Silo 3B (former SN-63)	A-13	0.0023						
Resin Storage Silo 3C (former SN-64)	A-13	0.0023						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Resin Storage Silo (former SN-65)	A-13	0.0023						
Resin Storage Silo (former SN-66)	A-13	0.0023						
Vacuum Pumps Plastics (2) (99.9% eff)	A-13	<.01						
Dust Collector Home Choice	A-13	<.01						
Molding Process (SN-96)	A-13						<.1	<.1
Coextruded Non-PVC Plastics (SN-107)	A-13			<0.1				
PM Removal Vacuum Systems	A-13	<0.1						
Thermoformer regrind convey air	A-13	<0.1						
Core Extrusion convey air	A-13	<0.1						
Non-146-2 Grinder (filter air and exhaust back into warehouse – no exhaust to atmosphere)	A-13	<0.1						
PVC Blend (4 inside tanks– fugitive)	A-13	<0.1						
1847 Blend (1 inside tank- fugitive)	A-13	<0.1						
146-2 Pellets(2 inside tanks- fugitive)	A-13	<0.1						
Print Shop (SN-85)	A-13						0.001	0.001
Pump Housing (Sets) (SN-108)	A-13						0.5	0.5
Label Printing Inks	A-13						0.3	0.33

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Two Tubing Lines	A-13			0.09				
New Blown Film Extrusion Operation	A-13			0.09				
PVC Film Extrusion Capacity	A-13			0.19				
Titan & Da Vinci	A-13			0.56				
Tubing Vacuum Pump	A-13	1.99E-04						
Tubing Line	A-13	0.31						
Tubing Vacuum Pump 1	A-13	0.17						
Tubing Vacuum Pump 2	A-13	0.17						
Tubing Vacuum Pump 3	A-13	0.17						
Blender 50 Drop Scale Vacuum Pump (1)	A-13	0.23						
Blender 50 Drop Scale Vacuum Pump (2)	A-13	0.23						
Blender 51 Drop Scale Vacuum Pump	A-13	0.17						
Blender 52 Drop Scale Vacuum Pump	A-13	0.17						
Blender 53 Drop Scale Vacuum Pump	A-13	0.17						
Regrind Silo Penthouse Heat Removal Blower	A-13	0.05						
Blender 50 Resin Vacuum Pump	A-13	0.12						
Blender 50 Regrind Vacuum Pump	A-13	0.07						
Silo 1 Blend Convey to Hopper	A-13	0.09						
Regrind Vacuum Convey from C Grinder	A-13	0.14						
Regrind Vacuum Convey from Inspection Pass 2	A-13	0.04						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Pelletizer 46 Pellet Convey Receiver 1	A-13	0.03						
Pelletizer 46 Pellet Convey Receiver 2	A-13	0.02						
Pelletizer 46 Pellet Convey Receiver 3	A-13	0.02						
Pelletizer 46 Pellet Convey Receiver 4	A-13	0.02						
Pelletizer 46 Pellet Convey Receiver 5	A-13	0.02						
Blend Transfer from Silo 3 to Silo 5	A-13	0.17						
Blend Convey Vacuum Pump (1)	A-13	0.39						
Blend Convey Vacuum Pump (2)	A-13	0.39						
Central Vacuum System Blower	A-13	0.15						
Blender 60 Resin Vacuum Pump	A-13	0.21						
Bender 60 Re grind Vacuum Pump	A-13	0.13						
Sum for A-13	A-13	4.57		1.03			0.91	0.94
570 gal Diesel Fuel tank (Mfg. After July 1, 2008) (New Area Source MACT does not apply)	A-3			0.0001				
300 gal Diesel Fuel tank (Mfg. After July 1, 2008) (New Area Source MACT does not apply)	A-3			<0.0001				
500 & 300 gal Propane tanks	A-3			<0.0001				
Distilled Water Tank	A-3			NA			NA	NA
De-aeration tank	A-3			NA			NA	NA

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
5,500 gal Out of Service Tank	A-3			NA			NA	NA
Water	A-3			NA			NA	NA
Air Receiver Tank	A-3			NA			NA	NA

Note: Not all IA that are included in the permit from previous revisions are included in this table. These sources were not updated by this revision.

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 #
0544-AR-16

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Baxter Healthcare Corporation

Permit #: 0544-AR-17

AFIN: 03-00002

			Old Permit	New Permit
\$/ton factor	23.93	Permit Predominant Air Contaminant	94.5	93.1
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	-1.4	
Minimum Initial Fee \$	500			
Check if Administrative Amendment	<input type="checkbox"/>	Permit Fee \$	400	
		Annual Chargeable Emissions (tpy)	93.1	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	3.7	4.6	0.9
PM ₁₀	2.6	4.2	1.6
PM _{2.5}	0	0	0
SO ₂	0.7	0.9	0.2
VOC	94.5	93.1	-1.4
CO	26.3	31	4.7
NO _x	31.5	40.7	9.2
Ethylene Oxide	5.5	5.03	-0.47
Ethylene Glycol	0.05	0.44	0.39
Single HAP	9.5	9.5	0
Total HAP	23.75	23.77	0.02
Sulfuric Acid	0	0.5	0.5