STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0299-AR-20 AFIN: 17-00043

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Bekaert Corporation
1881 Bekaert Drive
Van Buren, Arkansas 72956

3. PERMIT WRITER:

Andrea Sandage

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Steel Wire Drawing
NAICS Code: 331222

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
4/23/2020	Modification	Added SN-85 Misc Nat Gas Bubble; Updated calcs and emission factors

6. REVIEWER'S NOTES:

Bekaert Corporation (Bekaert) manufactures drawn wire products (NAICS 331222) at its facility located at 1881 Bekaert Drive, Van Buren, Crawford County, Arkansas 72958. In this permit modification, the facility requested the following:

- Remove out of service sources – SN-12, SN-21, SN-33, SN-34, SN-40, SN-41, SN-59 SN-70-74
- Remove SN-67, SN-68, SN-69, SN-76 and SN-77 – Emissions are now routed to SN-66 and SN-78

- Add SN-85 Miscellaneous Natural Gas Fired Equipment - Includes SN-04, SN-05, SN-08, SN-13, SN-14, SN-17, SN-22, SN-23, SN-25, SN-27, SN-35, SN-36, SN-44, SN-79
- Move Wax Bath Fugitives (SN-15, SN-24, SN-37, SN-56, SN-58, SN-60) to A-13 Insignificant Activities
- Move Metal Cleaning and Treatment (SN-02. SN-09, SN-18, SN-29, SN-31, SN-57, SN-49, SN-55, SN-75) to B-21 Insignificant Activities
- Remove SN-28 Heat Treatment Lead Bath and SN-50 & SN-51 Zinc Quench Bath – Correction due to not being an emission source.
- Vent indoors SN-39 and SN-54 – No emissions
- Correct emissions based on updated calculations and emissions factors – SN-06, SN-11, SN-13, SN-42, SN-43, SN-53, SN62A, SN-62B, SN-64, SN-66, SN-78, SN-81 and SN-83.

Plantwide emission decreases are 7.3 tpy PM/PM10, 8.5 tpy SO2, 1.8 tpy VOC and 4.6 tpy Hydrogen Chloride. Plantwide emission increases are 20.0 tpy CO, 7.9 tpy NOx, 0.41 tpy Chlorine, 1.34 tpy Ammonia and 1.87 tpy Total HAPs.

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 inspected on September 1, 2020 with no violation identified. There are no current/pending enforcement issues for this facility.

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

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

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-42, SN-43	SO_2, PM	40 CFR 60, Subpart Dc

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
none				

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 non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality 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 Division of Environmental Quality 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?
Chlorine (Cl_2)	0.29	0.0319	5.91E-01	No
Lead	0.05	0.0055	3.176E-04	Yes
Formaldehyde	0.370	0.0407	0.0215	Yes
Arsenic	0.010	0.0011	0.000024369	Yes
Beryllium	0.00005	5.5E-06	2.0901E-05	No
Chromium	0.003	0.00033	1.9068E-03	No
Cadmium	0.002	0.0002	7.0622E-05	Yes

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Cobalt	0.020	0.0022	5.0400E-06	Yes
Manganese	0.020	0.0022	2.5716E-04	Yes
Mercury	0.010	0.0011	2.4063E-05	Yes
Nickel	0.100	0.0110	1.8186E-03	Yes
Selenium	0.200	0.0220	8.6070E-05	Yes
POM - Total	0.200	0.0220	5.292E-06	Yes

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 Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Chlorine (Cl_2)	2.9	2.5725	Y
Beryllium	0.0005	0.00007	Y
Chromium	0.03	0.00661	Y

c) H_2S 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 H_2S Standards Y
If exempt, explain: No H_2S emissions

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
06, 53	Outlet Grain Loading	0.005 gr/cf	Two Dust Collectors for Wire Drawing Dept	99%	8760 hrs/yr 2,700 cfm each
07, 16, 26	AP-42 Section 1.2	SO_2 – 58.5 lb/ton NO_x – 9 lb/ton CO – 0.6 lb/ton PM – 13.2 lb/ton VOC – 0.3 lb/ton Pb – 0.0089 lb/ton	None	N/A	Stoker fired boilers SO_2 EF=39S S=1.5% PM – ash content 15% 8760 hrs/yr
10, 19, 30, 81	2019 Testing	3 ppmv HCl	Scrubber	98%	10,000 CFM each fan
11, 20, 32	1992 Testing 1974 Testing (Cl_2, NH_3)	0.01 gr/dscf 1.96E-7 lb/ft^3 CL_2 5.80E-7 lb/ft^3 NH_3	Scrubber	75% PM 50% Ammonia	SN-11/20 – 3,000 cfm SN-32 – 6,000 cfm
13, 22, 35	Engineering Estimate based on dust collected in 2013	1090.9 lbs/yr collected dust CL_2 6.06 mg/m^3 NH_3 32.02 mg/m^3	None	None	1.0 ton PM/yr (combined) 9,100 m^3/hr flow rate 25% safety factor NatGas – see SN-85
28, 50, 51	Engineering Estimate	0.02 lb/hr 0.1 tpy	None	N/A	Vent Stacks exhausts Water vapor & Negligible PM #55 moved to IA in R-14
40	Based on	9.53 x 10^{-5} g	N/A	N/A	50% is assumed to

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	weld	Zn oxide/weld			become airborne. Annual is 8760 hr/yr.
59, 70 – 74	Estimate based on depth of the weld	12.86 x 10^{-5} g Zn/weld	N/A	N/A	Assumes 50% is airborne
67, 68, 69	PM Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m3 dust loading= PM Fugitive = 0.40 lb/hr Total/3 =0.13 lb/hr ea	None	N/A	Ventilation Fans are not control Equipment 200% SF
62A, 62B	Outlet Grain Loading	0.005 gr/cf	Dust Collector	99%	8760 hrs/yr 162 cfm each
75	Engineering assumption	Assumed factor of 0.1 lb/hr	N/A	N/A	#75 moved to IA in R-14
64, 66	Outlet Grain Loading	0.005 gr/cf	Dust Collector	99%	8760 hrs/yr SN-64 - 141 cfm SN-66 – 5,150 cfm
78	Outlet Grain Loading	0.005 gr/cf	Dust Collector	99%	8760 hrs/yr 4,540 cfm
42, 43	AP-42, Table 1.4.1-1.4.3, small industrial boilers, uncontrolled	SO_2 = 0.6lb/mmcf NOx = 100 lb/mmcf CO = 84 lb/mmcf PM/PM_{10} = 7.6 lb/mmcf VOC = 5.5	None	N/A	1,000 btu/cf 8760 hr/yr 14.7 MM Btu/hr each

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		lb/mmcf			
81	Mass Balance	Rodine Usage 9.0 lb lb/gal 1,650 gal per yr	Scrubber	N/A	VOC 2.7% by wt. Formaldehyde 1% by wt.
83	Outlet Grain Loading	0.03 gr/cf	Cyclone	99%	8760 hrs/yr 5,700 cfm
84A	Engineering estimation using emission data of existing PC Strander SN-83	PM/PM_{10} 165 gallons dust/month	None		- Assumed maximum of three 55-gallon drums of collected dust (from SN-83) - Assumed density of dust to be 10 lb/gallon
84B	Outlet Grain Loading	0.005 gr/cf	Dust Collector	99%	8760 hrs/yr 8,000 cfm
85	AP-42, Table 1.4.1-1.4.3, small industrial boilers, uncontrolled	SO_2 = 0.6lb/mmcf NOx = 100 lb/mmcf CO = 84 lb/mmcf PM/PM_{10} = 7.6 lb/mmcf VOC = 5.5 lb/mmcf	None	N/A	1,000 btu/cf 8760 hr/yr Bubble Limit - 60 MM Btu/hr Includes Nat Gas equipment from SN-04, 05, 08, 13, 14, 17, 22, 23, 25, 27, 35, 36, 44, 79

14. TESTING REQUIREMENTS:

No stack testing required

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)
81	Pressure Drop (inches H_2O)	Pressure gauge on HCl Scrubber	Daily	N
10, 19, 30	Pressure Drop (inches H_2O)	Sieve tray differential pressure	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	Natural Gas	562.4 MM CF/rolling 12-month period	Monthly	N
Facility	Anthracite Coal	312 tons/rolling 12-month period	Monthly	N
Facility	Pickling Inhibitor	1650 gallons/rolling 12-month period	Monthly	N
SN-42, SN-43	Natural Gas Consumption	11.24 MM CF/month	Monthly	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
08, 12, 14, 17, 21, 23, 25, 27, 33, 34, 36, 42, 43, 44, 79, 84b	5%	Natural Gas Fired Equipment	Inspector's Observation
06, 07, 11, 13, 16, 20, 22, 28, 29, 31, 32, 35, 36, 39, 40, 41, 50, 51, 53, 54, 62, 64, 66, 76,	20%	Manufacturing Equipment	Inspector's Observation

SN	Opacity	Justification for limit	Compliance Mechanism
77, 78, 81, 83, 84a			

18. DELETED CONDITIONS:

Former SC	Justification for removal
9, 10	SN-42 and SN-43 permitted at 8760 hrs/yr – no recordkeeping required

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)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Three Zinc Quench Bath Vacuums (one formerly SN-49) water vapor only	A-13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four Zinc or Bezinal Quench Knives (two formerly SN-55 and SN-75) water vapor only	A-13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wire Drawing Cooling Tower #1	A-13	0.13						
Wire Drawing Cooling Tower #2	A-13	0.13						
Wire Drawing Cooling Tower #3	A-13	0.13						
Redraw Cooling Tower #1	A-13	0.07						
IVD 60 Cooling Tower	A-13	0.07						
IVD 40 Cooling Tower	A-13	0.07						
IPV 40 Cooling	A-13	0.07						

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Tower								
PC Strander Cooling Tower	A-13	0.04						
Front Office Cooling Tower	A-13	0.02						
Wax Bath Fugitives (SN-15, 24, 37, 56, 58, 60)	A-13			0.25				
Quality Control Laboratory	A-5			0.1			0.1	0.1
IVP-40 Zinc Bath Emergency Generator (SN-82)	A-1	0.01	0.01	0.01	1.16	0.69	0.01	0.01

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 #
0299-AR-19

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Bekaert Corporation
Permit Number: 0299-AR-20
AFIN: 17-00043

			Old Permit	New Permit
$/ton factor	23.93	Permit Predominant Air Contaminant	39.9	40.7
Minimum Fee $	400	Net Predominant Air Contaminant Increase	0.8	
Minimum Initial Fee $	500			
		Permit Fee $	400	
Check if Administrative Amendment	☐	Annual Chargeable Emissions (tpy)	40.7	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	39.9	32.6	-7.3
PM_{10}	39.9	32.6	-7.3
$PM_{2.5}$	0	0	0
SO_2	18.1	9.6	-8.5
VOC	4.4	2.6	-1.8
CO	13.2	33.2	20
NO_X	32.8	40.7	7.9
Lead	0.01	0.01	0
Chlorine	2.2	2.61	0.41
Hydrogen Chloride	8.35	3.75	-4.6
Ammonia	11	12.34	1.34
Total HAPs	0	1.87	1.87