

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0299-AR-14 AFIN: 17-00043

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Bekaert Corporation
1881 Bekaert Drive
Van Buren, Arkansas 72958

3. PERMIT WRITER:

Patty Campbell, PE

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Wire products, iron & steel, made in wire drawing plants
NAICS Code: 331222

5. Submittal:

February 11, 2009

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. This permit action is necessary to:

- Install four new dry drawing machines with a new dust collector (SN-80)

The emissions from the Wire Drawing Department are split equally between the three exhaust systems (SN-06, 53 and 80). Changes in total permitted emissions are: 0.6 tpy PM/PM₁₀.

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 air enforcement actions at this time.

8. PSD 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?

If yes, explain why this permit modification not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
None Identified.		

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Non-Criteria Pollutants:

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	SN	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
HCl	1, 10, 19, 30, 45, 48	7.50	0.825	2.23	N
Cl ₂	11, 13, 20, 22, 32, 35	1.45	0.16	0.90	N
NH ₃ /NH ₄	11, 13, 20, 22, 32, 35	17.41	1.92	2.70	N

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 ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
HCl	75.0	10.26*	Y
Cl ₂	14.5	1.37*	Y

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
NH ₃ /NH ₄	174.1	5.10*	Y

* From a previous Permit #0299-AR-11-SOB.

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/ uncontrolled, etc)
01	Mass Balance	2.19 lb VOC/gal 1,650 gal per yr	Scrubber	N/A	Assumes all VOC emitted
06, 53 & 80	Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m ³ + 200% SF = <u>PM Fugitive</u> = 0.5622 lb/hr Total/3 =0.19 lb/hr ea + <u>PM Dust Collector</u> @ 7.66 lb/hr * 200% SF * 90% eff = 1.53 lb/hr/3 =0.51 ea Combined 0.72 lb/hr ea	Three Dust Collectors for Wire Drawing Dept	95.0% Fabric Filter - BUT used 90% for calculations	8760 hrs/yr 200% SF SN-06,53 & 80 split emissions equally
10, 19, 30	Testing	100 ppm HCl conc to scrubber	Scrubber	98%	100% Safety Factor
28, 50, 51, 55	Engineering Estimate	0.02 lb/hr 0.1 tpy	None	N/A	Vent Stacks exhausts Water vapor & Negligible PM
40	Based on weld	9.53×10^{-5} g Zn oxide/weld	N/A	N/A	50% is assumed to become airborne. Annual is 8760 hr/yr.
59, 70 - 74	Estimate based on depth of the weld	12.86×10^{-5} g Zn/weld	N/A	N/A	Assumes 50% is airborne

SN	Emission Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/uncontrolled, etc)
67, 68, 69	PM Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m ³ 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
75	Engineering assumption	Assumed factor of 0.1 lb/hr	N/A	N/A	---
64, 66, 76	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m ³ with 200% safety factor.	N/A	200% SF	10% of airborne dust leaves building. 30% of wire draw non-stack emissions distributed equally between SN-76 and SN-77. 212,230 m ³ /hr air.
77	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m ³ with 200% safety factor.	N/A	N/A	10% airborne dust exits building. 30% of wire draw nonstack emission distributed equally between SN-76 & SN-77. 212,230 m ³ /hr air.

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/uncontrolled, etc)
78	Engineering estimate using stack testing data	Dust loading 7.66 lb/hr with 200% safety factor.	Dust collector	90%	40% of wire draw emissions distributed equally between SN-66 and SN-78.

SF – Safety Factor

13. TESTING REQUIREMENTS:

No stack testing required.

14. 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)
01	Pressure Drop (inches H ₂ O)	Pressure gauge on HCl Scrubber	Daily	N
10, 19, 30	Pressure Drop (inches H ₂ O)	Sieve tray differential pressure	Daily	N

15. 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	684,420,000 ft ³ /yr	Monthly	N
Facility	Pickled Steel Rod	144,870 tons/yr	Monthly	N
Facility	Pickling Inhibitor	1650 gallons/yr	Monthly	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
08, 12, 14, 17, 21, 23, 25, 27, 33, 34, 36, 44, 79	5%	Natural Gas Fired Boilers	Inspector's Observation
42, 43	5%	Natural Gas Fired Equipment	Inspector's Observation
06, 07, 11, 13, 16, 20, 22, 28, 29, 31, 32, 35, 36, 38, 39, 40, 41, 47, 50, 51, 53, 54, 55, 62, 64, 66, 75, 76, 77, 78, 80	20%	Manufacturing Equipment	Inspector's Observation

17. DELETED CONDITIONS:

No conditions were deleted.

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
No Insignificant Activities were added with this modification.								

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0299-AR-13

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Paula Parker, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Facility Name: Bekaert Corporation (Van Buren)

Permit Number: 0299-AR-14

AFIN: 17-00043



\$/ton factor 22.07
 Minimum Fee \$ 400
 Minimum Initial Fee \$ 500

Permit Predominant Air Contaminant
 Net Chargeable Emission Increase
 Permit Modification Fee \$
 Initial Permit Fee \$
 Annual Chargeable Emissions (tpy)

Old Permit	New Permit
45.1	45.1
0	
400	
0	
45.1	

Check if Administrative Amendment

Pollutant (tpy)	Old Permit	New Permit	Change
PM	28.9	29.5	0.6
PM ₁₀	28.9	29.5	0.6
SO ₂	11.9	11.9	0
VOC	4.7	4.7	0
CO	12.5	12.5	0
NO _x	45.1	45.1	0
Lead	0.3	0.3	0
Chlorine	2.2	2.2	0
Hydrogen Chloride	8.74	8.74	0
Ammonia	11	11	0
	0	0	0
3/4/2009	0	0	0
pc	0	0	0

