

STATEMENT OF BASIS

For the issuance of Air Permit # 0299-AR-15 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, AR 72958

3. PERMIT WRITER:

Travis Porter

4. PROCESS DESCRIPTION AND NAICS CODE:

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

5. SUBMITTALS:

8/13/2009; 9/3/2009

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. The facility requests the following in this DeMinimis application.

1. Remove SN-80 from the existing permit. This Dust Collector, requested in the previous permit, AR-14, was not installed. In the previous permit, PM and PM₁₀ emissions from wire drawing equipment were split equally among SN-06, SN-53, and SN-80. Now, with SN-80 not installed and removed from the permit, the emissions from wire drawing are split equally between SN-06 and SN-53. Thus, actual emissions from the wire drawing process are not increasing; however, emissions from SN-06 and SN-53 are increasing.

2. Replace two existing 28 MMBtu/hr natural gas fired boilers (vintage circa 1972), SN-42 and SN-43, with two new 14.7 MMBtu/hr natural gas fired boilers. The new boilers will retain the same source numbers as the boilers they are replacing. They will replace one at a time. Two alternative scenarios are approved: Alternative Scenario #1--One of the existing boilers is replaced with a new boiler; and Alternative Scenario #2—Both old boilers are replaced with new boilers.
3. Bubble emissions from SN-42 and SN-43.

HCl TLV was updated using the 2009 value.

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	Regulation (NSPS, NESHAP or PSD)
SN-42, SN-43*	40 CFR 60, Subpart Dc

*Applies when one or both of the existing boilers are replaced.

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	2.98*	0.328	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

*2009 TLV data

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	29.8**	10.26*	Y
Cl ₂	14.5	1.37*	Y
NH ₃ /NH ₄	174.1	5.10*	Y

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

**Based on 2009 TLV

Other Modeling: Not Required

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	Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m ³ + 200% SF = PM Fugitive = 0.5622 lb/hr Total/2 =0.28 lb/hr ea + PM Dust Collector @ 7.66 lb/hr * 200% SF * 90% eff = 1.53 lb/hr/2 =0.77 ea	Two Dust Collectors for Wire Drawing Dept	95.0% Fabric Filter - BUT used 90% for calculations	8760 hrs/yr 200% SF SN-06,53 split emissions equally
10, 19, 30	Testing	100 ppm HCl conc to scrubber	Scrubber	98%	100% Safety Factor
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

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)
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
67, 68, 69	PM Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% airborne 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	#75 moved to IA in R-14
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.

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)
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.
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.

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)
42, 43	AP-42, Table 1.4.1-1.4.3, small industrial boilers, uncontrolled	SO ₂ = 0.6lb/mmcf NO _x = 100 lb/mmcf CO = 84 lb/mmcf PM = 7.6 lb/mmcf PM ₁₀ = 7.6 lb/mmcf VOC = 5.5 lb/mmcf NG heating value = 973 btu/cf Maximum schedule = 24hr/day, 7 days/wk, 26 wks/yr. One boiler at a time operates. One boiler operates 52 wks/yr. Existing boilers 28MM Btu/hr; new boilers 14.7 MM Btu/hr	None	N/A	Updated emission factors applied only to new boilers

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,	Pressure Drop (inches	Sieve tray differential	Daily	N

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
30	H ₂ O)	pressure		

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	684.4MM CF/rolling 12-mo. Then 684.4MM CF/rolling 12-mo. when Scenario #1 implemented. Then 562.4 MM CF/rolling 12-mo when Scenario #2 is implemented.	Monthly	N
Facility	Pickled Steel Rod	144,870 tons/yr	Monthly	N
Facility	Pickling Inhibitor	1650 gallons/yr	Monthly	N
SN-42, SN-43	Natural Gas Consumption	21.41MM CF/month when Scenario #1 is implemented. Then 11.24 MM CF/month when Scenario #2 is implemented.	Monthly	N

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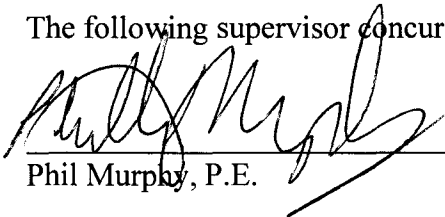
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

0299-AR-14

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Phil Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 07-27-09

Facility Name: Bekaert Corporation
 Permit Number: 0299-AR-15
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\$/ton factor 22.07
 Minimum Fee \$ 400
 Minimum Initial Fee \$ 500

Check if Administrative Amendment

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	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	29.5	29.1	-0.4
PM ₁₀	29.5	29.1	-0.4
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 (Pb)	0.3	0.3	0
Chlorine(Cl ₂)	2.2	2.2	0
Hydrogen Chloride (HCl)	8.74	8.74	0
Ammonia (NH ₃ /NH ₄)	11	11	0