

## STATEMENT OF BASIS

for the issuance of Draft Air Permit #: 0299-AR-13

**1. PERMITTING AUTHORITY:**

Arkansas Department of Environmental Quality  
8001 National Drive  
Post Office Box 8913  
Little Rock, Arkansas 72219-8913

**2. APPLICANT:**

Bekaert Corporation  
1881 Bekaert Drive  
Van Buren, AR 72956

**3. PERMIT WRITER:** Patty Campbell

**4. PROCESS DESCRIPTION AND NAICS CODE:**

NAICS Description: Steel Wire Drawing  
NAICS Code: 331222

**5. SUBMITTALS:** December 1, 2006

**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. With this permit modification Bekaert will add a stand alone zinc phosphate coating process. This process will include three liquid baths (zinc phosphate, rinse, and borax coating) and a 1.5 MMBtu/hr drying furnace (SN-79). The only emissions due to this change will be from the natural gas combustion at the drying furnace. Permitted annual emission increases associated with this change are: 0.1 tpy PM, 0.1 tpy PM<sub>10</sub>, 0.1 tpy SO<sub>2</sub>, 0.1 tpy VOC, 0.6 tpy CO, and 0.7 tpy NO<sub>x</sub>.

**7. COMPLIANCE STATUS:**

The following summarizes the current compliance status 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. APPLICABLE REGULATIONS:**

**PSD Applicability**

Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, et cetera)? N

Has this facility undergone PSD review in the past? N

Is this facility categorized as a major source for PSD? N  
 ≥ 100 tpy and on the list of 28 (100 tpy)? N  
 .. 250 tpy all other N

**PSD Netting**

Was netting performed to avoid PSD review in this permit? N

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation [NSPS, NESHAP (Part 61 & Part 63), or PSD <u>only</u> ]
NONE		

**9. EMISSION CHANGES:**

The following table summarizes plant wide emission changes associated with this permitting action.

Plant Wide Permitted Emissions (ton/yr)			
Pollutant	Air Permit # 0299-AR-12	Air Permit # 0299-AR-13	Change
PM	31.5	31.6	0.1
PM <sub>10</sub>	31.5	31.6	0.1
SO <sub>2</sub>	11.8	11.9	0.1
VOC	4.6	4.7	0.1
CO	11.9	12.5	0.6
NO <sub>x</sub>	44.4	45.1	0.7
Lead (Pb)	0.3	0.3	0.0
Chlorine (Cl <sub>2</sub> )	2.20	2.20	0.0
Hydrogen Chloride (HCl)	8.74	8.74	0.0
Ammonia (NH <sub>3</sub> /NH <sub>4</sub> )	11.00	11.00	0.0

**10. 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.

**11. 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 deemed PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	SN	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
HCl	1, 10, 19, 30, 45, 48	7.50	0.825	2.23	N
Cl <sub>2</sub>	11, 13, 20, 22, 32, 35	1.45	0.16	0.90	N
NH <sub>3</sub> /NH <sub>4</sub>	11, 13, 20, 22, 32, 35	17.41	1.92	2.70	N

**2nd Tier Screening (PAIL) \***

SCREEN3 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 was deemed by the Department to be one one-hundredth of the Threshold Limit Value, as listed by the ACGIH.

Pollutant	(PAIL, µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration * (µg/m <sup>3</sup> )	Pass?
HCl	75.0	10.26	Y
Cl <sub>2</sub>	14.5	1.37	Y
NH <sub>3</sub> /NH <sub>4</sub>	174.1	5.10	Y

\* From a previous (#0299-AR-11) statement of basis.

**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 1650 gal per yr	Scrubber	N/A	Assumes all VOC emitted
10, 19, 30	Testing	100 ppm HCl conc to scrubber	Scrubber	98%	100% safety factor

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 x 10 <sup>-5</sup> 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 x 10 <sup>-5</sup> g Zn/weld	N/A	N/A	Assumes 50% is airborne
75	Engineering assumption	Assumed factor of 0.1 lb/hr	N/A	N/A	
76	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m <sup>3</sup> with 200% safety factor.	N/A	N/A	10% of airborne dust leaves building. 30% of wire draw non-stack emissions distributed equally between SN-76 and SN-77. 212,230 m <sup>3</sup> /hr air.
77	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m <sup>3</sup> 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 <sup>3</sup> /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.

**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), frequency of recording, and the need for records included in any annual, semiannual or other reports.

SN	Parameter or Pollutant to be Monitored	Method of Monitoring (CEM, Pressure Gauge, etc)	Frequency*	Report (Y/N)**
01	Pressure Drop (inches H <sub>2</sub> O)	Pressure gauge on HCl Scrubber	Daily	N
10, 19, 30	Pressure Drop (inches H <sub>2</sub> O)	Sieve tray differential pressure	Daily	N

\* Indicate frequency of recording required for the parameter (Continuously, hourly, daily, etc.)

\*\* Indicates whether the parameter needs to be included in reports.

**15. RECORD KEEPING REQUIREMENTS**

The following are items (such as throughput, fuel usage, VOC content of coating, etc) that must be tracked and recorded, frequency of recording and whether records are needed to be included in any annual, semiannual or other reports.

SN	Recorded Item	Limit (as established in permit)	Frequency*	Report (Y/N)**
Facility	Natural Gas	684,420,000 ft <sup>3</sup> /yr	Monthly	Y
Facility	Pickled Steel Rod	144,870 tons/yr	Monthly	Y
Facility	Pickling Inhibitor	1650 gallons/yr	Monthly	Y

\* Indicate frequency of recording required for the item (Continuously, hourly, daily, etc.)

\*\* Indicates whether the item needs to be included in reports

**16. OPACITY**

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
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

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
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	20%	Manufacturing Equipment	Inspector's Observation

**17. DELETED CONDITIONS:**

No Specific Conditions from the previous permit were deleted.

**18. VOIDED, SUPERSEDED OR SUBSUMED PERMITS**

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

Permit #
0299-AR-12

**19. CONCURRENCE BY:**

The following Supervisor concurs with the permitting decision:

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David Triplett, P.E.