

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: **date, 2006**

Region: Winston-Salem Regional Office
County: Stokes
NC Facility ID: 8500028
Inspector's Name: Eric Hudson
Date of Last Inspection: 01/12/2006
Compliance Code: 3/In Compliance - Inspection

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): KobeWieland Copper Products, LLC Facility Address: KobeWieland Copper Products, LLC 3990 US Highway 311 North Pine Hall, NC 27042 SIC: 3351 / Copper Rolling And Drawing NAICS: 331421 / Copper Rolling, Drawing, and Extruding Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 15A NCAC 2D .0614 and .1806 NSPS: NA NESHAP: NA PSD: NA PSD Avoidance: NA NC Toxics: NA 112(r): NA Other:
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 8500028.06A Date Received: 03/22/2006 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 02469/T16 Existing Permit Issue Date: 04/11/2003 Existing Permit Expiration Date: 03/31/2007
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Review Engineer: Mark Cuilla Review Engineer's Signature: Date: date, 2006		Comments / Recommendations: Issue 02469/T17 Permit Issue Date: date, 2006 Permit Expiration Date: date, 2011	

I. Purpose of Application

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**02469T16**) was issued on April 11, 2003, and is currently scheduled to expire on March 31, 2007. The renewal application was received on March 27, 2006, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

II. Facility Description

The facility manufactures copper tubing used in the refrigeration and plumbing industries. Current permitted equipment includes operations for copper melting, extrusion, drawing, grooving, and finishing. The facility operates 24 hours per day, seven days a week, and 50 weeks per year.

III. History/Background/Application Chronology

March 27, 2006 – Permit application **8500028.06A** received and deemed complete for processing.

April 11, 2006 – I requested via email that the Permittee submit a CAM demonstration for controlled sources that were not included in the original application for renewal. The Permittee responded immediately with an appropriate CAM plan.

April 21, 2006 – DRAFT permit sent to Permittee, Regional Office, and Title V Coordinator for comment prior to public notice and EPA review.

April 24, 2006 – Received Regional Office comments on DRAFT permit.

April 26, 2006 – Received Permittee’s comments on DRAFT permit.

April 28, 2006 – Participated in a conference call between Regional Office and Permittee to discuss all comments. As a result, we made changes to the PSD Avoidance monitoring requirements and the CAM plan for the CATOX system.

May 5, 2006 – RE-DRAFTED permit sent to regional office and Permittee for one last look prior to sending to notice.

Date, 2006 – DRAFT permit sent to 30-day public notice and 45-day EPA review.

IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page(s)	Section	Description of Change(s)
Attachment	Insignificant activities	-put equipment in tabular form -added equipment noted in regional office inspection report -added ID Nos.
Cover	-	-amended permit revision numbers and all dates
All	Header	-amended permit revision number
3-4	Equipment table	-corrected/added ID Nos. where needed -removed equipment per regional office inspection report
4	2.1 A (table) 2.1 A.1.a 2.1 A.1.b 2.1 A.1.c	-added CAM reference -added ID Nos. -updated shell language and corrected cross reference -updated shell language
5	2.1 A.1.d 2.1 A.1.f 2.1 A.2.b 2.1 A.2.c 2.1 A.2.d	-updated shell language -updated shell language -corrected cross reference -added ID Nos. and updated shell language -updated shell language
6	2.1 A.2.e	-updates shell language
6-8	2.1 A.3	-added CAM requirements
8-9	2.1 B	-added Section for extrusion press (ID No. EP)
9	2.1 C (table) 2.1 C.1.a 2.1 C.1.c 2.1 C.1.d 2.1 C.1.e	-added CAM reference -added ID Nos. -added ID Nos. -updated shell language -updated shell language

Page(s)	Section	Description of Change(s)
10	2.1 C.2 2.1 C.2.a 2.1 C.2.b 2.1 C.2.c 2.1 C.2.e 2.1 C.2.f 2.1 C.2.g	-corrected rule citation -added reference to control device -updated shell language -added ID Nos. and updated shell language -added ID Nos. -corrected paragraph header -converted reporting period from quarterly to semi-annually
11-13	2.1 C.3	-added CAM requirements
13	2.2 A	-added ID Nos.
14	2.2 B	-added odor control requirements
15-23	General Conditions	-updated shell language

The following table indicates the modifications to ESM as a result of this permit renewal:

Current Description	Change resulting from permit renewal
One scrap copper bailer (ID No. C-1) and associated simple cyclone (ID No. CD-C1)	End-dated per Regional Office inspection report
One degreasing operation (ID No. D-10) on one straight tube grooving machine (ID No. G-1)	<i>One straight tube grooving machine (ID No. G-1) and degreasing operation (ID No. D-10)</i>
Three natural gas/propane-fired exothermic generators (4.07, 3.56, and 0.77 million Btu per hour maximum heat input capacity, respectively; ID Nos. EXGen1 through EXGen3) providing carbon monoxide to two electric annealing ovens	Three natural gas/propane-fired exothermic generators (4.07, 3.56, and 0.77 million Btu per hour maximum heat input capacity, respectively; ID Nos. EXGen1 through EXGen3) providing carbon monoxide to two electric annealing ovens <i>and associated natural gas-fired catalytic oxidizer (3.0 million Btu per hour heat input rate)</i>
Innergroove bull blocks (ID Nos. IGB-1 through IGB-15)	Innergroove bull blocks (ID Nos. ES-IGB-1 through ES-IGB-15)
Three induction heating ovens and associated degreasing operations (ID Nos. IH-1 through IH-3)	<i>Three electric induction heating ovens (ID Nos. ES-IH-1 through ES-IH-3)</i>
Defect marking operations (ID Nos. I-4 through I-9) and degreasing operations (ID Nos. D-4 through D-9) installed on copper tubing level winder (innergroove; ID Nos. LWIG-1 through LWIG-6)	Defect marking operations (ID Nos. ES-I-4 through ES-I-9) and degreasing operations (ID Nos. D-4 through D-9) installed on copper tubing level winder (innergroove; ID Nos. LWIG-1 through LWIG-6)
Defect marking operations (ID Nos. I-1 through I-3) and degreasing operations (ID Nos. D-1 through D-3) installed on copper tubing level winder (smoothbore; ID Nos. LWSB-1 through LWSB-3)	Defect marking operations (ID Nos. ES-I-1 through ES-I-3) and degreasing operations (ID Nos. D-1 through D-3) installed on copper tubing level winder (innergroove; ID Nos. LWSB-1 through LWSB-3)
Three straighteners (ID Nos. ST-1 through ST-3) with associated degreasing operations	Three straighteners (ID Nos. ST-1 through ST-3) with associated degreasing operations (ID Nos. D-11 through D-13)
NA	<i>Storage containers less than 100 gallons in size storing organic liquids with vapor pressures less than 10.8 psi (ID No. II)</i>
Above ground solvent storage tanks 6,000 gallons each (ID No. IES-Tank)	<i>Clean 142 solvent storage tank (6,000 gallon capacity; ID No. IES-Tank-Clean) Dirty 142 solvent storage tank (6,000 gallon capacity; ID No. IES-Tank-Dirty)</i>
NA	<i>One diesel fuel storage tank (6,000 gallon capacity; ID No. I2)</i>
NA	<i>One gasoline storage tank (2,000 gallon capacity; ID No. I3)</i>

Current Description	Change resulting from permit renewal
NA	<i>One propane storage tank (30,000 gallon capacity; ID No. I4)</i>
NA	<i>Fourteen parts washers using 142 solvent (ID No. I5)</i>
One diesel-fired emergency generator (300 KW)	<i>One diesel-fired emergency generator (300 kW; ID No. IES-EG)</i>
One 1.28 mmBtu per hour natural gas-fired launder (ID No. IES-L)	<i>One natural gas-fired launder (1.28 million Btu per hour maximum heat input capacity; ID No. IES-L)</i>
NA	<i>Two cut off saws for the extrusion process and associated bagfilter in series with a “knock down” chamber (ID No. I6)</i>
NA	<i>Thirty-eight cooling towers (ID No. I7)</i>
NA	<i>Two diesel fired steam cleaners (6 hp each; ID No. I8)</i>
NA	<i>Four contact markers (ID No. I9)</i>
NA	<i>Three gas-fired concrete saws (30 hp, 10 hp, and 4 hp; ID No. I10)</i>
Sandblaster (65 hp diesel-fired IC engine; ID No. IES-SB1)	<i>One diesel-fired sandblaster (65 hp; ID No. IES-SB1)</i>
NA	<i>Six small ink marking machines (ID No. I11)</i>
NA	<i>Three wastewater evaporator systems (ID No. I12)</i>
NA	<i>One hydrocarbon based tube degreaser (ID No. I13)</i>
NA	<i>One CAM type drawing machine (ID No. I14)</i>
NA	<i>Two electrically heated ovens located in maintenance department (ID No. I15)</i>

V. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0515: Particulates from Miscellaneous Industrial Processes

15A NCAC 2D .0521: Control of Visible Emissions

15A NCAC 2D .0958: Work Practices for Sources of Volatile Organic Compounds

15A NCAC 2Q .0317: Avoidance Conditions (for 15A NCAC 2D .0530: Prevention of Significant Deterioration)

A regulatory review for these existing requirements will not be included in this document.

As part of this renewal process, the following regulation(s) have been added to the permit:

15A NCAC 2D .1806: Control and Prohibition of Odorous Emissions

VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The facility is not subject to any New Source Performance Standards. This permit renewal does not affect this status.

NESHAPS/MACT – The facility is not subject to any National Emission Standards for Hazardous Air Pollutants. This permit renewal does not affect this status.

PSD – The facility operates three exothermic generators (**ID Nos. EXGen1, EXGen2, and EXGen3**) venting to two annealing ovens (**ID Nos. AF-1 and AF-2**). The equipment is controlled by one catalytic oxidizer (**ID No. CATOX1**) and is subject to a 250 ton per year limit of carbon monoxide. The Permittee is required to maintain the following operating parameters:

Maximum flow rate to the oxidizer,

Maximum temperature in the catalyst bed,
Minimum destruction efficiency of the catalytic oxidizer, and
Minimum outlet temperature of the catalytic oxidizer.

The Permittee is also required to maintain an inspection and maintenance schedule/checklist and monitor all operating parameters once per shift. Reporting is also required; however, it should be noted that as part of this renewal the reporting period has been changed from quarterly to semi-annually.

112(r) – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect this status.

CAM – 40 CFR 64 requires that a continuous assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard.

The Permittee has two operations in which control devices are used for compliance with an emission limit. The electric arc copper melting furnace (**ID No. CMF-1**) is controlled by four bagfilters in series (**ID Nos. B-1 through B-4**). This equipment is required to comply with the particulate matter emission limit established by 15A NCAC 2D .0515 and the 20 percent opacity standard of 15A NCAC 2D .0521. The three exothermic generators (**ID Nos. EXGen1, Exgen2, and EXGen3**) and two annealing ovens (**ID Nos. AF-1 and AF-2**) are controlled by one catalytic oxidizer (**ID No. CATOX1**). This equipment is subject to the 20 percent opacity standard of 15A NCAC 2D .0521 and a PSD Avoidance limit for carbon monoxide of less than 250 tons per year per 15A NCAC 2Q .0317. It should be noted that the catalytic oxidizer if not installed for control of visible emissions therefore a CAM demonstration is only needed to CO control.

Copper melting furnace: The Permittee estimates emissions of PM10 at ~150 tons per year. This is based on a stack test performed in 1999 in which it was determined that an average of 1.5 tons per year of PM10 would be emitted annually. The bagfilters have an estimated capture efficiency of 99.6%. This level exceeds the threshold levels for CAM; therefore CAM is required for this equipment. The following language has been submitted by the Permittee for inclusion in its renewed permit as Section 2.1 A.3:

3. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING

a. *Per 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following.*

b. Background

i. Emission Unit.

(A) *Description. One electric arc copper melting furnace.*

(B) *Identification. ID No. CMF-1*

ii. Applicable Regulation, Emission Limit, and Monitoring Requirements.

(A) *Regulations. 15A NCAC 2D .0515 and .0521*

(B) *Emission limits*

1. $E = 4.10 \times P^{0.67}$

Where E = allowable emission rate in pounds per hour

P = process weight in tons per hour

2. 20 percent opacity

(C) *Control Technology. Four bagfilters (ID Nos. B-1 through B-4) installed in series*

- c. **Monitoring Approach.** The key elements of the monitoring approach for particulate matter, including parameters to be monitored, parameter ranges and performance criteria are presented in the following table.

	1	2
<i>I. Indicator</i>	<i>Visible emissions</i>	<i>Pressure drop</i>
<i>Measurement Approach</i>	<i>Visible emissions from the fabric filter will be monitored daily using EPA Reference Method 22-like procedures</i>	<i>Pressure drop across the fabric filter is measured with a differential pressure gauge</i>
<i>II. Indicator Range</i>	<i>An excursion is defined as the presence of visible emissions. Excursions trigger an inspection, corrective action, and a reporting requirement.</i>	<i>An excursion is defined as a pressure drop greater than 5 inches of water. Excursions trigger an inspection, corrective action, and a reporting requirement.</i>
<i>QIP Threshold</i>	<i>The QIP threshold is five excursions in a 6-month reporting period.</i>	<i>None selected</i>
<i>III. Performance Criteria</i>		
<i>A. Data Representativeness</i>	<i>Measurements are being made at the emission point (fabric filter outlet)</i>	<i>Pressure taps are located at the fabric filter inlet and outlet. The gauge has a minimum accuracy of 0.5 inches of water.</i>
<i>B. Verification of Operational Status</i>	<i>NA</i>	<i>NA</i>
<i>C. QA/QC Practices</i>	<i>The observer will be familiar with Reference Method 22 and follow Method 22-like procedures.</i>	<i>The pressure gauge is checked daily for operation.</i>
<i>D. Monitoring Frequency</i>	<i>Observations are done daily.</i>	<i>Pressure drop is monitored daily.</i>
<i>Data Collection Procedures</i>	<i>VE observations are documented by the observer.</i>	<i>Pressure gauge readings are manually recorded daily.</i>
<i>Averaging Periods</i>	<i>NA</i>	<i>NA</i>

d. **Justification**

- i. **Background.** The pollutant-specific emission unit is the electric arc copper melting furnace, which is used to melt virgin and scrap copper. The particular filters for this plan are four bagfilters, 5,530 square feet of filter area, each.
- ii. **Rationale for Selection of Performance Indicators.** Visible emissions was selected as the performance indicator because it is a good indicator of the proper operation and maintenance of the filter units. When the filter units are operating properly, there will not be any visible emissions in the exhaust outlet. Any increase in visible emissions indicates reduced performance of the filter units, therefore, the presence of visible emissions is used as a performance indicator.

In general, filters are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged/broken, the bags are becoming blinded, or the airflow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions, indicator No. 1. A pressure drop across the filter unit also serves to indicate that there is airflow through the control device.

- iii. Rationale for Section of Indicator Ranges. The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence to determine the action required to correct the situation. All excursions will be documented and reported. An indicator range of no visible emissions was selected because: (1) an increase in visible emissions is indicative of an increase in particulate emissions; and (2) a monitoring technique which does not require a Method 9 certified observer is desired. Although Reference Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of RM-22 can be applied to ducted emissions; i.e., Method 22-like observations.

The selected QIP threshold for fabric filter visible emissions is five excursions in a 6-month reporting period. This level is 19 percent of the total visible emissions observations. If the QIP threshold is exceeded in a semiannual reporting period, a QIP will be developed and implemented.

The indicator range chosen for the fabric filter pressure drop is greater than 5 inches water. An excursion triggers an inspection, corrective action, and a reporting requirement. The pressure drop is recorded daily. As the pressure drop approaches 5 inches water the bags are scheduled for replacement.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of all monitoring activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations for the requirements of this permit must be clearly identified.

Generators and annealing ovens: The Permittee estimates CO emissions from this source as 422 tons per year. This is based on a 1997 mass balance emission inventory. This level exceeds the 250 ton per year limitation. Following testing, it was determined that the best available control technology device for CO was a catalytic oxidizer. Destruction efficiency is estimated at 99.94%. As a result, CAM is required for this equipment. The following language has been submitted by the Permittee for inclusion in its renewed permit as Section 2.1 C.3:

3. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING

- a. Per 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following.
- b. **Background**
 - i. Emission Unit.
 - (A) Description. Three exothermic generators venting to two electric annealing ovens.
 - (B) Identification. ID Nos. EXGen1, EXGen2, EXGen3, AF-1, and AF-2
 - ii. Applicable Regulation, Emission Limit, and Monitoring Requirements.
 - (A) Regulations. 15A NCAC 2Q .0317 for 15A NCAC 2D .0530 (PSD Avoidance)
 - (B) Emission limits
 - 1. less than 250 tons per year carbon monoxide
 - (C) Control Technology. One catalytic oxidizer (ID No. CATOXI)
- c. **Monitoring Approach.** The key elements of the monitoring approach for particulate matter, including parameters to be monitored, parameter ranges and performance criteria are presented in the following table.

	1	2	3
I. Indicator	Inlet temperature	Outlet temperature	Visible emissions
Measurement Approach	Inlet temperature is monitored by a thermocouple	Outlet temperature is monitored by a thermocouple	Visible emissions from the catox1 will be monitored daily using EPA Reference Method 22-like procedures

	1	2	3
II. Indicator Range	An excursion is defined as temperature readings less than 550°F. Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as temperature readings less than 625°F. Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as the presence of visible emissions. Excursions trigger an inspection, corrective action, and a reporting requirement.
QIP Threshold	None selected.	None selected.	The QIP threshold is five excursions in a 6-month reporting period.
III. Performance Criteria			
A. Data Representativeness	Measurements are being made at the emission point (catalyst inlet) and has an indicator range of 0°F to 9999°F	Measurements are being made at the emission point (catalyst outlet) and has an indicator range of 0°F to 9999°F	Measurements are being made at the emission point (catalyst outlet)
B. Verification of Operational Status	Chart recorder	Chart recorder	NA
C. QA/QC Practices	The thermocouple is checked daily for operation and calibrated annually	The thermocouple is checked daily for operation and calibrated annually	The observer will be familiar with Reference Method 22 and follow Method 22-like procedures.
D. Monitoring Frequency	Once per shift	Once per shift	Observations are done daily.
Data Collection Procedures	Recorded daily in logbook	Recorded daily in logbook	VE observations are documented by the observer.
Averaging Periods	NA	NA	NA

d. Justification

- i. **Background.** The Permittee operates two electric annealing ovens as part of its copper tubing manufacturing process. Three natural gas fired exothermic generators (only two operate at a time one is on standby) produce an anaerobic gas mainly carbon monoxide for the annealing ovens. The annealing process takes place in an anaerobic atmosphere to prevent oxidation of copper tubing. After doing its job, the CO was vented to the atmosphere from the two annealing ovens via a stack on each end. In 1997, estimated potential CO mass balance emission inventory report showed that the CO emissions from the annealing ovens to be at 442 tons per year. This level exceeded the 250 tons per year upper PSD limit. After testing it was decided that the best available control technology device for the CO was a catalytic oxidizer to eliminate 95% of the CO from the ovens. On October 27, 1997 the oxidizer came online and began eliminating CO emissions. On January 12, 1998 emissions testing was performed and the destruction efficiency was established at 99.94% and CO emissions were 5.53 tons per year.
- ii. **Rationale for Selection of Performance Indicators and Indicator Ranges.** The emissions testing used Method 10 in conjunction with methods 1, 2, 3A and 4 to determine the CO concentration of the oxidizer's inlet and outlet gases.

The CO emissions vented to the oxidizer are relatively constant. As a result the oxidizer ran steadily with no peaks in temperature. It was decided that the process is constant and that the readings were to be recorded every 15 minutes during the test run. The inlet and outlet temperatures were typically 550°F and 620°F respectively.

The CO analysis indicated that the inlet concentration of CO to the oxidizer typically was between 3500 and 3600 parts per million. The outlet concentration was between 0.5 and 2 parts per million. The results were that the CO destruction efficiency of the oxidizer was at 99.94%.

As a result of all the testing the Permittee is required to monitor the inlet and outlet temperature. Records are also required. A minimum outlet temperature has been set at 617°F.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of all monitoring activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations for the requirements of this permit must be clearly identified.

VII. Facility Wide Air Toxics

The facility is not currently subject to NC Air Toxics. This permit renewal does not affect this status.

VIII. Facility Emissions Review

There is no change in emissions for this renewal.

The following table represents the latest years emission inventory from the facility:

Pollutant(s)	2004 Actual Emissions (tpy)
CO	190.95
NO _x	3.06
PM ₁₀	3.68
SO ₂	3.56
VOC	146.79
Total HAP/TAP	0.07

IX. Stipulation Review

There are no noted stipulation modifications necessary at this time.

X. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. Virginia and Forsyth County are states/programs within 50 miles of this facility.

XI. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this renewal.

A consistency determination was not required for his renewal.

WSRO recommends issuance of the permit and was presented with a DRAFT permit prior to notice and issuance.

RCO concurs with WSRO's recommendation to issue the renewed air permit.