

ADEQ

ARKANSAS
Department of Environmental Quality

APR 26 2012

Darren Morrissey, EH&S Manager
CoorsTek Arkansas Operations - Boone Road Facility
3315 Boone Road
Benton, AR 72015

Dear Mr. Morrissey:

The enclosed Permit No. 1672-AR-5 is your authority to construct, operate, and maintain the equipment and/or control apparatus as set forth in your application initially received on 1/3/2012.

After considering the facts and requirements of A.C.A. §8-4-101 et seq., and implementing regulations, I have determined that Permit No. 1672-AR-5 for the construction, operation and maintenance of an air pollution control system for CoorsTek Arkansas Operations - Boone Road Facility to be issued and effective on the date specified in the permit, unless a Commission review has been properly requested under Arkansas Department of Pollution Control & Ecology Commission's Administrative Procedures, Regulation 8, within thirty (30) days after service of this decision.

The applicant or permittee and any other person submitting public comments on the record may request an adjudicatory hearing and Commission review of the final permitting decisions as provided under Chapter Six of Regulation No. 8, Administrative Procedures, Arkansas Pollution Control and Ecology Commission. Such a request shall be in the form and manner required by Regulation 8.603, including filing a written Request for Hearing with the APC&E Commission Secretary at 101 E. Capitol Ave., Suite 205, Little Rock, Arkansas 72201. If you have any questions about filing the request, please call the Commission at 501-682-7890.

Sincerely,



Mike Bates
Chief, Air Division

Enclosure

ADEQ MINOR SOURCE AIR PERMIT

Permit No. : 1672-AR-5

IS ISSUED TO:

CoorsTek Arkansas Operations - Boone Road Facility
3315 Boone Road
Benton, AR 72015
Saline County
AFIN: 63-00164

THIS PERMIT IS THE ABOVE REFERENCED PERMITTEE'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 *ET SEQ.*) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:



Mike Bates
Chief, Air Division

APR 26 2012

Date

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List of Acronyms and Abbreviations

A.C.A.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
CFR	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
No.	Number
NO _x	Nitrogen Oxide
PM	Particulate Matter
PM ₁₀	Particulate Matter Smaller Than Ten Microns
SO ₂	Sulfur Dioxide
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

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Section I: FACILITY INFORMATION

PERMITTEE: CoorsTek Arkansas Operations - Boone Road Facility

AFIN: 63-00164

PERMIT NUMBER: 1672-AR-5

FACILITY ADDRESS: 3315 Boone Road
Benton, AR 72015

MAILING ADDRESS: 3315 Boone Road
Benton, AR 72015

COUNTY: Saline County

CONTACT NAME: Darren Morrissey

CONTACT POSITION: EH&S Coordinator

TELEPHONE NUMBER: 501-776-5541

REVIEWING ENGINEER: Alexander Sudibjo

UTM North South (Y): Zone 15: 3828744.73 m

UTM East West (X): Zone 15: 541521.54 m

Section II: INTRODUCTION

Summary of Permit Activity

CoorsTek Arkansas Operations (CoorsTek – Boone Road) owns and operates a high technology custom equipment manufacturing facility located at 3315 Boone Road, Benton, Saline County, AR 72015. With this de minimis modification, the facility is requesting the addition of:

1. One silicon carbide pusher furnace with afterburner, three additional electric period furnace cure ovens, four additional silicon carbide furnaces, and an electric drying oven to SN-08.
2. Two additional silicon carbide formulations, SA and SP.
3. Replacement of dust collector #11 in the insignificant activities with a new Donaldson dust collector.

The facility's permitted emissions are increasing by 0.1 tpy, 0.1 tpy, 3.8 tpy, 0.2 tpy, and 0.2 tpy for PM/PM₁₀, SO₂, VOC, CO, and NO_x respectively.

Process Description

The facility has four natural gas-fired continuous tunnel kilns (SN-04, 05, 06, and 07) and one natural gas-fired periodic kiln (SN-01) for firing ceramic parts. The kilns are operated from ambient temperature up to 1700 °C. Typical firing temperatures are 1465 to 1680 °C.

Raw materials are received and placed in storage until scheduled for processing. Material is blended into slurries of various formulations, including SC2, SC30, and B4C. Some raw materials are prepared in the spray dryer (SN-03) to form a powder. The powder is screened and packaged in 55 gallon drums. Some of the packaged powder is shipped out-of-state to other CoorsTek facilities. Raw materials are also blended and stored in 35-gallon plastic cans.

The blended powder is pressed into machinable parts by either isopress or dry press, compacting ceramic powder into a solid shape/form. Isopress parts are machined. Pressed/machined parts are routed either to a continuous tunnel kiln (SN-04 through SN-07) or to a periodic kiln (SN-01) for firing, depending on the size of the part. Uncured carbide products are routed to one of eight electric cure ovens (SN-08) for removal of moisture, binders, and de-wax. Parts may be sandblasted to remove excess material. Parts are inspected and routed to the wet grinding area to be machined to final dimensional tolerance. Ground parts are lapped and polished to customer specifications.

Reaction Bonded and Direct-Sintered Carbide Process

Fifteen periodic and one continuous use electric-powered vacuum furnaces (SN-08) will be used to produce silicon carbide and boron carbide products. The carbide components are produced using organic binders. A variety of raw material is prepared in the spray dryer.

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Raw materials are delivered to the storage area and remain there until scheduled for the spray dryer. Once scheduled, the material is blended into slurry and sprayed into the spray dryer (SN-03) to form a powder. The powder is screened and stored in 55-gallon drums. The powder is pressed into machinable parts by an isopress or dry press, compacting ceramic powder into a solid shape/form. Machined parts are routed to a drying oven (SN-08) to remove moisture. The material is fired (reacting or sintering ceramic) in the electric vacuum furnaces (SN-08) using silicon metal setters to infiltrate the part. Carbide parts are sandblasted to remove excess metal that builds up on the outside of the reaction bond surface during the firing process. Parts are inspected and routed to the wet grinding area to be machined to a final dimensional tolerance. Ground parts are lapped and polished for the customer required surface finish.

Regulations

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective June 18, 2010
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective July 18, 2009

Total Allowable Emissions

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	1.5	4.7
PM ₁₀	1.5	4.7
SO ₂	2.3	8.5
VOC	11.0	46.5
CO	5.3	22.0
NO _x	3.2	12.4
Ammonia (NH ₃)*	0.01	0.01

* Ammonia is not included in either VOC or HAP totals. Ammonium hydroxide (NH₃OH) has an evaporative emission factor of 0.1%.

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Section III: PERMIT HISTORY

Permit No. 1672-A was the first permit issued to ACI on May 8, 1996. This permit established permitted emission limits at: 3.0 tpy PM/PM₁₀, 3.0 tpy SO₂, 104.1 tpy VOC, 3.0 tpy CO, 5.5 tpy NO_x, 3.0 tpy methane, and 0.1 tpy NH₃.

Permit No. 1672-AOP-R0 was the first Title V permit issued to ACI-Coors Technical Ceramics on April 15, 1998. This permit established permitted emission limits at 101.2 tpy VOC and 0.1 tpy NH₃.

Permit No. 1672-AR-1 was issued to CoorsTek Arkansas Operations on Dec. 17, 2003. This permit was issued in order to allow the facility to take a federally-enforceable VOC limit of 30.4 tpy. This change allowed the source to again obtain a Minor Source Air Permit rather than a Title V Operating Air Permit. Emission limitations were quantified in this permit at: 5.5 tpy PM/PM₁₀, 8.9 tpy SO₂, 30.4 tpy VOC, 35.8 tpy CO, 15.5 tpy NO_x, 0.2 tpy NH₃, and 1.0 tpy of glycol butyl ether. There was no change in the method of operation of the facility with this modification.

Permit No. 1672-AR-2 was issued to CoorsTek Arkansas Operations on May 4, 2005. This permit was issued in order to allow for the following changes: 1) A new milling operations to include a new press and sandblasting operations was installed. 2) Four (4) new baghouses for the purposes of emissions control on the new milling operations were installed. Three of the new baghouses (SN-16, SN-17, & SN-18) were Torit baghouses with 5,000 cfm blowers. These units are similar to SN-12-14 baghouses. The fourth new baghouse utilized a 500 cfm blower (SN-19), similar to the existing SN-10 and SN-11 baghouses. 3) One (1) additional electric vacuum furnace, to be included in SN-08, was installed. 4) The amount of SC30 binder allowable for use in a 12-month period was increased from 70,000 lb/yr to 625,000 lb/yr. The allowable VOC content of the binder remains unchanged at 7% by weight. Permitted emission increases associated with these changes were: 0.4 tpy PM/PM₁₀ and 19.4 tpy VOC.

Permit No. 1672-AR-3 was issued to CoorsTek Arkansas Operations on May 24, 2007. With this permit modification CoorsTek replaced periodic ceramic kiln #1 (SN-02) with a periodic ceramic kiln (SN-20) and increased the maximum limit on Aquadag (SC2) processing from 60,000 pounds to 120,000 pounds (60 tons) per consecutive 12-month period.

Permit No. 1672-AR-4 was issued to CoorsTek Arkansas Operations on October 14, 2008. With this permit modification, the facility:

1. Removed four baghouses (SN-10, 17, 18, and 19) and one periodic kiln (SN-20);
2. Identified six baghouses (SN-11, 12, 13, 14, 15, and 16) as Insignificant Activities;
3. Added natural gas emissions for Spray Dryer (SN-03), rated 3.5 MMBtu/hr;
4. Updated the ammonium hydroxide (NH₃OH) evaporative emission factor to 0.1%;
5. Reduced the throughput of silicon carbide (SC30) formulated products, with a maximum 7% organic binder, cured in the Electric Furnace Cure Ovens (SN-08) from 625,000 to 300,000 pounds per 12-month period;

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6. Included the throughput of green boron carbide (B4C) formulated products, with a maximum 3% organic binder, cured in the Electric Furnace Cure Ovens (SN-08) of 300,000 pounds per 12-month period;
 7. Updated reportable HAPs, Ethylene glycol monobutyl ether (EGBE) had been delisted as a HAP; and
 8. Updated the soap VOC emission factor for the Alumina Wash Line (SN-09).
- Total annual permitted emission rate changes with this permitting action were: -1.1 tpy PM/PM₁₀, 0.2 tpy SO₂, -2.8 tpy VOC, -2.0 tpy CO, 0.5 tpy NO_x, 0.39 tpy Ammonia, and -1.0 tpy EGBE.

Section IV: EMISSION UNIT INFORMATION

Specific Conditions

- The permittee shall not exceed the emission rates set forth in the following table.
 [Regulation 19 §19.501 et seq. and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
01	Wilbanks Periodic Kiln #3 (natural gas, 2.45 MM Btu/hr)	PM ₁₀	0.1	0.2
		SO ₂	0.1	0.4
		VOC	0.7	2.8
		CO	1.8	7.8
		NO _x	0.6	2.5
03	Spray Dryer (natural gas, 3.5 MM Btu/hr)	PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.3	1.3
		NO _x	0.4	1.6
04	Continuous Tunnel Kiln - Lindberg L32 (natural gas, 2.5 MM Btu/hr)	PM ₁₀	0.5	*
		SO ₂	0.8	
		VOC	2.0	
		CO	1.3	
		NO _x	0.9	
05	Continuous Tunnel Kiln - Lindberg L30 (natural gas, 3.5 MM Btu/hr)	PM ₁₀	0.3	
		SO ₂	0.6	
		VOC	1.3	
		CO	0.9	
		NO _x	0.6	
06	Continuous Tunnel Kiln - Harrop L36 (natural gas, 1.4 MM Btu/hr)	PM ₁₀	0.2	
		SO ₂	0.3	
		VOC	0.6	
		CO	0.4	
		NO _x	0.3	
07	Continuous Tunnel Kiln - Lindberg L34 (natural gas, 1.8 MM Btu/hr)	PM ₁₀	0.2	
		SO ₂	0.3	
		VOC	0.7	
		CO	0.5	
		NO _x	0.3	
Total Annual Natural Gas Emissions for Continuous Tunnel Kilns * (SN-04 through 07)		PM ₁₀		4.2
		SO ₂		7.9
		VOC	---	19.6
		CO		12.7
		NO _x		8.1

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SN	Description	Pollutant	lb/hr	tpy
08	One Pusher Furnace, 15 Carbide Electric Vacuum Furnaces, and Drying Oven (840,000 lbs carbide product of various formulations)	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	5.3	23.0
		CO	0.1	0.2
		NO _x	0.1	0.2
09	Alumina Wash Line (37,950 lbs soap)	VOC	0.3	1.0
10, 17, 18, & 19	Baghouses (formerly used for housekeeping <i>only</i> , not control equipment)	Removed from Service		
11, 12, 13, 14, 15, & 16	Baghouses (used for intermittent housekeeping <i>only</i> , not control equipment)	Insignificant Activities List		
02 & 20	Periodic Kilns	Removed from Service		

* Total tpy natural gas emissions are included in a facility-wide bubble.

2. The permittee shall not exceed the emission rates set forth in the following table. [Regulation 18 §18.801 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
01	Wilbanks Periodic Kiln #3 (natural gas, 2.45 MM Btu/hr)	PM	0.1	0.2
03	Spray Dryer (natural gas, 3.5 MM Btu/hr and 0.1% trace evaporative ammonia)	PM Ammonia (NH ₃)	0.1 0.01	0.2 0.01
04	Continuous Tunnel Kiln - Lindberg L32 (natural gas, 2.5 MM Btu/hr)	PM	0.5	*
05	Continuous Tunnel Kiln - Lindberg L30 (natural gas, 3.5 MM Btu/hr)	PM	0.3	
06	Continuous Tunnel Kiln - Harrop L36 (natural gas, 1.4 MM Btu/hr)	PM	0.2	
07	Continuous Tunnel Kiln - Lindberg L34 (natural gas, 1.8 MM Btu/hr)	PM	0.2	
Total Annual Emissions for Tunnel Kilns * (SN-04 through 07)		PM	---	
08	One Pusher Furnace, 15 Carbide Electric Vacuum Furnaces, and Drying Oven (840,000 lbs carbide product of various formulations)	PM	0.1	0.1
10, 17, 18, & 19	Baghouses (formerly used for housekeeping <i>only</i> , not control equipment)	Removed from Service		

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SN	Description	Pollutant	lb/hr	tpy
11, 12, 13, 14, 15, & 16	Baghouses (used for intermittent housekeeping <i>only</i> , not control equipment)	Insignificant Activities List		
02 & 20	Periodic Kilns	Removed from Service		

* Total tpy natural gas emissions are included in a facility-wide bubble.

- Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN	Limit	Regulatory Citation
01, 03, 04, 05, 06, 07, 08	5%	§18.501

- The permittee shall not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [Regulation 18 §18.801 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
- The permittee shall not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [Regulation 18 §18.901 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
- The permittee shall use only pipeline quality natural gas as fuel for kilns SN-01, 04, 05, 06, and 07 and dryer SN-03. [Regulation No. 19, §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
- The permittee shall not exceed the material throughput and VOC organic binder content limits by weight in SN-08 at the facility per consecutive 12-month period set forth in the following table. [Regulation No. 19, §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Various Formulations of Un-sintered or Unfired Carbide Products	Annual Throughput Limit (pounds / consecutive 12 months)	Maximum Allowable Organic Binder Content Limit
Silicon Carbide – SC2 (Aquadag)	120,000	7%
Silicon Carbide – SC30	300,000	7%
Boron Carbide – B4C	300,000	3%
Silicon Carbide – SA	96,000	6%

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Various Formulations of Un-sintered or Unfired Carbide Products	Annual Throughput Limit (pounds / consecutive 12 months)	Maximum Allowable Organic Binder Content Limit
Silicon Carbide – SP	24,000	8%

7. The permittee shall not use more than 37,950 pounds of soap in SN-09 at the facility per consecutive 12-month period. [Regulation 19, §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
8. The permittee shall not exceed 5% VOC content by weight in the soap in SN-09 per consecutive 12-month period. [Regulation 19, §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
9. The permittee shall maintain monthly records which demonstrate compliance with Specific Conditions #6, #7, and #8. The permittee shall maintain the Material Data Safety Sheets (MSDS) or equivalent documentation on-site. The permittee shall maintain a twelve month rolling total and each individual month's data in a spreadsheet, database, or other well-organized format on-site and make records available to Department personnel upon request. The permittee shall update the records by the fifteenth day of the month following the month to which the records pertain. [Regulation No. 19, §19.705 and Regulation No. 18, §18.1004 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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Section V: INSIGNIFICANT ACTIVITIES

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated June 4, 2008.

Description	Category
Alumina Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13
Alumina Shake and Dye (liquid water-based dye, Magnaflux SKL-4C, no emissions)	A-13
Alumina Grinding (water-based wet process, no emissions)	A-13
Silicon Lap and Polish (inorganic water-based slurry, wet process, no emissions)	A-13
Solvent Cleaner/Degreaser (All-Purpose Simple Green Cleaner (ready-to-use) water-based wet process, no emissions, <1.2% VOC, 4 drums/yr)	A-13
Foam for packing part in nitrite area (two-part spray, Instapak "A" and Gflex "B", non-VOC, no emissions)	A-13
Welding Operations (for occasional small repairs, not a production process)	A-13
Baghouses (used for intermittent housekeeping <i>only</i> , not control equipment) (formerly SN-11, 12, 13, 14, 15, & 16)	A-13
Test Kiln, electric, not in use	A-5

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
3. The permittee shall notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [Regulation 19 §19.704 and/or A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [Regulation 19 §19.410(B) and/or Regulation 18 §18.309(B) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [Regulation 19 §19.705 and/or Regulation 18 §18.1004 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [Regulation 19 §19.705 and/or Regulation 18 §18.1004 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Arkansas Department of Environmental Quality
Air Division
ATTN: Compliance Inspector Supervisor

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5301 Northshore Drive
North Little Rock, AR 72118-5317

7. The permittee shall test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) business days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) calendar days after the completion of testing. [Regulation 19 §19.702 and/or Regulation 18 §18.1002 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
8. The permittee shall provide: [Regulation 19 §19.702 and/or Regulation 18 §18.1002 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. Sampling ports adequate for applicable test methods;
 - b. Safe sampling platforms;
 - c. Safe access to sampling platforms; and
 - d. Utilities for sampling and testing equipment
9. The permittee shall operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee shall maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [Regulation 19 §19.303 and/or Regulation 18 §18.1104 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [Regulation 19 §19.601 and/or Regulation 18 §18.1101 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.
 - b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
 - c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and

nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.

11. The permittee shall allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act;
 - c. To inspect any monitoring equipment or monitoring method required in this permit;
 - d. To sample any emission of pollutants; and
 - e. To perform an operation and maintenance inspection of the permitted source.
12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [Regulation 19 §19.410(A) and/or Regulation 18 §18.309(A) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [Regulation 19 §19.407(B) and/or Regulation 18 §18.307(B) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]
19. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion in the following circumstances:
 - a. Such an extension does not violate a federal requirement;
 - b. The permittee demonstrates the need for the extension; and
 - c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Regulation 18 §18.314(A), Regulation 19 §19.416(A), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

20. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Department approval. Any such emissions shall be included in the facilities total emissions and reported as such. The Department may grant such a request, at its discretion under the following conditions:
 - a. Such a request does not violate a federal requirement;
 - b. Such a request is temporary in nature;
 - c. Such a request will not result in a condition of air pollution;
 - d. The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
 - e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[Regulation 18 §18.314(B), Regulation 19 §19.416(B), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

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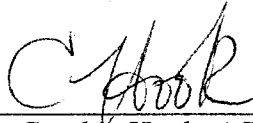
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21. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion under the following conditions:
 - a. The request does not violate a federal requirement;
 - b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
 - c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

[Regulation 18 §18.314(C), Regulation 19 §19.416(C), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

CERTIFICATE OF SERVICE

I, Cynthia Hook, hereby certify that a copy of this permit has been mailed by first class mail to
CoorsTek Arkansas Operations - Boone Road Facility, 3315 Boone Road, Benton, AR, 72015,
on this 20th day of April, 2012.

A handwritten signature in black ink, appearing to read 'C Hook', written over a horizontal line.

Cynthia Hook, ASIII, Air Division