



Louisville Metro Air Pollution Control District
 701 West Ormsby Avenue, Suite 303
 Louisville, Kentucky 40203-3137



xx Month 2016

FEDOOP Statement of Basis

Owner: Zeochem, LLC

Source: Zeochem, LLC

Plant Location: 1314 South 12th Street, Louisville, KY 40232

Date Application Received: 2/21/2006

Date of Draft Permit: 09-09-2016

District Engineer: Virginia Rhodes

Permit No: O-1264-16-F

Plant ID: 1264

SIC Code: 2819

NAICS: 325188

ISIS: 1264

Introduction:

This permit will be issued pursuant to District Regulation 2.17, *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard for particulate matter less than 2.5 micron (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

- Initial Issuance
- Permit Revision
 - Administrative
 - Minor
 - Significant
- Permit Renewal

Compliance Summary:

- Compliance certification signed
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

I. Source Information

- Source Description:** The source manufactures catalysts through chemical manufacturing operations.
- Emission Unit Summary:** Zeochem, LLC operates the following emission units in Louisville.

Emission Unit	Equipment Description
A Plant Emission Units	
U-001	Intermediate Storage Tank D-36
U-002	A Plant Bead System
U-003	A Plant Fluid Bed Dryer and Calciner
U-005	A Plant Dryer Gas Burner (A Plant Rotary Calciner)
U-006	Rotary Calciner with Bag Dump Feed
U-007	A Plant Powder Storage Silo (D-36)
U-009	A Plant Prater Mill System
U-012	A Plant Rework System
U-019	A Plant Classifier System
U-026	A Plant Ribbon Blender System
U-027	Wyssmont Dryer
U-037	Pneumatic Conveying feed system
B Plant Emission Units	
U-013, U-014, & U-016	B Plant Conveying System
U-015	B Plant Nauta System
U-017	B Plant Ribbon Blender
U-018	B Plant Fluid Bed Dryer/Calciner
U-020	B Plant Pneumatic Conveying System
U-021 & U22	B Plant Ring Dryer System
U-024	B Plant Rework System
U-025	B Plant Powder Storage Silo V-221
C Plant Emission Units	
U-023	Phase III Process System
U-036	AH-340 Gas Burner for Phase III Process
Storage Tank Emission Units	
U-028	Hydrochloric Acid Storage Tank T-25
U-030	Lithium Chloride Storage Tank T-300
Insignificant Activities Emission Unit	

- Fugitive Sources:** NA
- FEDOOP Permit Revisions:**

Permit	Issue Date	Public Notice Date	Type	Description
192-01-F	2/14/01	7/8/01	Initial	Initial Issuance
192-01-F(R1)	8/15/2003	6/8/03	Significant Revision	Added construction permits 140-03 and 141-03.

Permit	Issue Date	Public Notice Date	Type	Description
O-1264-16-F	xx/xx/2016	10/31/2016	Renewal	Permit renewal

5. Construction Permit History

Permit No.	Issue Date	Description
108-04-C	9/30/2005	One (1) Scott ribbon blender and one (1) Scott bag dump station.
109-04-C	9/30/2005	Two (2) dust collectors; one (1) MAC DC-412 and one (1) MAC DC-413.
279-06-C	11/30/2006	One (1) 9,000 gallon storage tank (T-25) for hydrochloric acid (37%) with Tigg Econosorb-V adsorber canister.
203-07-C	6/15/2007	Two (2) storage silos (V-222 and V-223) for storing molecular sieve powder.
204-07-C	6/15/2007	Two (2) dust collectors to control PM emissions from storage silos V-222 and V-223 and from one dense surge hopper.
205-07-C	6/15/2007	One (1) dense phase surge hopper, one (1) dense phase conveying pot, and one (1) ball wheel system.
541-07-C	10/31/2007	One (1) Pannevis belt filter press, one (1) synthesis tank (T-15), one (1) dense phase conveyor/surge hopper, and one (1) Ring Dryer.
542-07-C	10/31/2007	One (1) fabric filter dust collector designated as DC-215 to control PM emissions from the Ring Dryer and dense phase conveyor/surge hopper.
234-08-C	3/26/2008	Two (2) 24,000 gallon sulfuric acid storage tanks (T-182 & T-183)
679-08-C	11/30/2008	Modification to Plant A Dryer and Plant B Dryer/Calciner to allow production of a product that contains 1% ethanol by weight. This permit is voided.
172-79-C(R1)	09/06/2016	Correcting PM limits for E-003A (Fluid-Bed Dryer, Y-19) and E-003B (Calciner Y-20).
173-79-C(R1)	09/06/2016	Correcting PM limits for E-002A through E-002N.
584-91-C(R1)	08/04/2016	Correcting PM limits for re-work storage silo pneumatic conveying system (U-012/E-012 A Plant Rework System).
651-92-C(R1)	08/04/2016	Correcting PM limits for powder unloading/ conveying system including a bulk bag unloading station, V-105, to convey sodium aluminosilicates to silo V-100 (U-013/E-013) controlled by dust collector C-011 & silo V-101 (U-013/E-014) controlled by dust collector C-012.
652-92-C(R1)	08/04/2016	Correcting PM limits for dense phase conveying system to convey sodium aluminosilicates to silo V-111 (U-014/E-015) controlled by dust collector C-013 & silo V-110 (U-014/E-016) controlled by dust collector C-014.
653-92-C(R1)	09/06/2016	Correcting PM limits for U-015 B Plant Nauta System consisting of E-017A (Mixer MX-115), E-017B (Mixer-116), E-017C (Ball Wheel BW-129), E-017D (Ball Wheel BW-121).
655-92-C(R1)	08/04/2016	Correcting PM limits for Pneumatic conveying system to

		convey sodium aluminosilicates to B-Plant storage hoppers V-120 (U-016/E-018), V-121 (U-016/E-019A), & V-122 (U-016/E-019B)
656-92-C(R1)	08/04/2016	Correcting PM limits for B-Plant U-017/E20 Bag Dump Station (Ribbon Blender) (MX-112) equipped with a fabric filter dust collection unit (DC -112).
657-92-C(R1)	09/06/2016	Correcting PM limits for (E-021A) B-Plant Fluid Bed Dryer DR-150 and (E-021B) B Plant Calciner HE-150.

6. Applicable Requirements:

PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

7. Future MACT Requirements: NA**8. Referenced Federal Regulations in Permit: NA****9. Emission Summary:**

Pollutant	Actual Emissions (tpy) 2009 Data	Pollutant that triggered major source status
CO	3.14	No
NO _x	3.73	No
SO ₂	0.022	No
PM/PM ₁₀ /PM _{2.5}	8.19	Yes
VOC	0.21	No
Total HAPs	0.116	No

10. Removed Equipment

The following equipment has been removed from the plant:

Equipment	Previous Permits
U-004/E-004 Powder Dryer (Y-6) and K- 11 Dryer Blower	215-97-O, 177-79-C
A Pit Ludox System Dust Collector	218-97-O, 230-85-C
A Pit Rework System Dust Collector	219-97-O, 85-86-C
A Pit Todd Powder Pump Vent	223-97-O, 331-87-C
U-008/E-008 A Plant Rotary Steam Dryer (New Solidizer)	226-97-O, 128-89-C
U-010/E-001 Molecular Sieve Packaging System	229-97-O, 228-90-C
U-011 A Plant New Solidizer Powder Pump System	231-97-O, 114-91-C
Fabric Filter (Cartridge Type), Y-105	211-97-O, 171-79-C
C-003 Dust Collector DC-201	216-97-O, 177-79-C
C-007A Dust Collector DC-200	227-97-O, 129-89-C
C-009 Dust Collector DC-237	225-97-O, 336-87-C
C-018 Dust Collector DC-113	238-97-O, 656-92-C
Modification to Plant A Dryer and Plant B Dryer/Calciner to allow production of a product that contains 1% ethanol by weight.	679-08-C

Carman Dryer DR-341 will be replaced by the Andrtiz Dryer (E-026I) per the application received 10/14/16.	Insignificant Activity
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II. Regulatory Analysis

1. **Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** This source does not manufacture, sell, or distribute any of the chemicals listed in Title VI of the CAAA. Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
3. **Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.

4. Applicable Regulations

Regulation	Title	Type
2.17	Federally Enforceable District Origin Operating Permits	SIP
7.06	Standards of Performance for New Indirect Heat Exchangers	SIP
7.08	Standards of Performance for New Process Operations	SIP

5. Basis of Regulation Applicability

Regulation	Basis for Applicability
2.17	FEDOOP source
7.06	Applies to each indirect heat exchanger having input capacity of more than one million BTU per hour commenced after September 1, 1976.
7.08	Establishes requirements for new processes that are subject to PM standards and were installed after September 1, 1976.

a. Plant-wide major source limits

Zeochem, LLC is a major source for PM₁₀. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Zeochem, LLC has requested to be exempt from the requirements of STAR, as defined by Regulation 5.00, section 1.13.5, by accepting the following limits: 25 tons per year of a regulated air pollutant, 5 tons per year of a single HAP, and 12.5 tons per year of combined HAPs.

Regulation 2.17, section 5.2 requires sufficient monitoring and record keeping assuring ongoing compliance with the terms and conditions of the permit.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an annual compliance certification by April 15. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an annual compliance report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. Equipment:

A Plant Emission Points

EU	EP ID	Description	Previous Attachment/Permit	Applicable Regulation	Control Device	
U-001	E-001	Intermediate Storage Tank V-6 for zeolite powder (Formerly D-6)	210-97 170-79-C	7.08	C-001	
U-002	E-002A	Ribbon Blender (Formerly T-12 Binder Feeder)	212-97 173-79-C(R1)	7.08	C-002	
	E-002B	Nauta Mixer MX-8 (Formerly Y-8 Premix)				
	E-002C	Nauta Mixer MX-9				
	E-002D	V-36 Powder Storage Hopper (Formerly D-36)				
	E-002E	Bin Vibrator V-278 (Formerly T-18 Spheradizer weigh hopper)				
	E-002F	Bin Vibrator V-279				
	E-002G	Spheradizer feed chute, 1979				
	E-002H	Ball Wheel 11 (Formerly Y-11 Spheradizer Granulator)				
	E-002I	Ball Wheel 12				
	E-002J	Ball Wheel 13				
	E-002K	Seed tanks, product silos & "overs" supersack (Formerly D-44 through D-47)				
	E-002L					
	E-002M					
E-002N						
U-003	E-003A	One Fluid-Bed Dryer, Y-19, 1979	214-97 172-79-C(R1)	7.08	C-020	
	E-003B	One Calciner, Y-20, with blowers designated as K-3, 1979		7.08		
	E-003C	Natural Gas 4.5 MMBtu/hr		7.06		
U-037	E-005	Pneumatic Conveying feed system including V-250 to DC-251, DC-252, rotary dryer Y-260	220-97 307-87-C	7.08	C-004	
U-005	E-041A	Rotary Drying Calciner (Y-260)	221-97 308-87-C	7.08	None	
	E-041B	Gas Burner (Indirect) (4 MMBtu/hr)		7.06		
U-006	E-006	Bag Dump Feed (DC-255)		7.08	C-005	
U-007	E-007	Custom designed storage bin (V-230) to store zeolite powder (Formerly 15,000 lb Storage Silo)	224-97 335-87-C	7.08	C-006	
U-009	E-009	Prater Mill System, 1979	One (1) grinder/classifier	228-97 145-90-C	7.08	C-008
			One (1) cyclone collector			
U-012	E-012	A Plant Rework System, 1987	One rework storage silo pneumatic conveying system, to convey material from a mill to a rework storage silo.	232-97 584-91-C(R1)	7.08	C-010
U-019	E-022A	A Plant pneumatic	One (1) storage tank (V-230) (250 ft ³)	242-97	7.08	C-021

EU	EP ID	Description		Previous Attachment/Permit	Applicable Regulation	Control Device
	E-022B	Classifier (V-235) System "MS-20," 1989	One (1) progressive Industries cyclone separator (DC-236)			
U-026	E-029A	A Plant Ribbon Blender MX-412		108-04-C	7.08	C-027
	E-029B	One bag dump station				C-029
U-027	E-029C	Wyssmont Tray Dryer (Insignificant)		NA	7.08	C-034

A Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-001	Bag Filter for DC-105 for tank (V-6) (Replaced Y-105)	NA	99%	S-001
C-002	DC-12B Dust Collector (Formerly Y-102)	213-97 174-79-C	99%	S-002
C-004	A Plant rotary calciner dust collector (fabric filter – bag type) (DC-251)	222-97	99%	S-004
C-005	Dust Collector DC-252 (Fabric Filter – Bag type)	222-97	99%	S-005
C-006	A Plant powder storage silo bin vent (fabric filter – bag type), Y-36	225-97 336-87-C	99%	S-006
C-008	Prater Mill dust collector (DC-244) (Fabric Filter – Bag Type)	228-97	99%	S-008
C-010	A Plant system dust collector (fabric filter – bag type), Y-75	232-97	99%	S-010
C-020	A Plant fluid bed dryer dust collector (DC-25) fan blower #240 (RTF-23)	241-97	99%	S-017
C-021	A Plant classifier system dust collector DC-238	242-97	99%	S-018
C-027	A Plant Ribbon Blender Dust Collector (DC-413)	109-04-C	99%	S-024
C-029	Bin vent for A Plant Ribbon Blender with discharges into room (DC-412)		99%	Fugitive
C-034	Sly Baghouse	NA	99%	S-043

B Plant Emission Points

EU	EP ID	Description		Previous Attachment/Permit	Applicable Regulation	Control Device	Stack ID
U-013	E-013	Powder unloading/ conveying system including a bulk bag unloading station, V-105, to convey sodium aluminosilicates to silos V-100 and V-101, 1994	Silo V-100	233-97 651-92-C(R1)	7.08	C-011	S-011
	E-014a		Silo V-101				7.08
	E-014b		Bulk Bag Unloading Station				
U-014	E-015	Dense phase conveying system to convey sodium aluminosilicates to two silos, V-111 & V-110, 1994	Silo V-111	234-97 652-92-C(R1)	7.08	C-013	S-012
	E-016		Silo V-110		7.08	C-014	S-035

EU	EP ID	Description		Previous Attachment/ Permit	Applicable Regulation	Control Device	Stack ID
U-015	E-017A	B Plant Nauta System 1994	Mixer MX-115	235-97 653-92-C(R1)	7.08	C-015	
	E-017B		Mixer MX-116				
	E-017C		Ball Wheel BW-129 (Formerly Granulator G-120)				
	E-018C		Ball Wheel BW-121 (Formerly Granulator G-121)				
U-016	E-018	Pneumatic conveying system to convey sodium aluminosilicates to storage hoppers V-120, V-121, & V-122, 1994	Hopper V-120	237-97 655-92-C(R1)	7.08	C-016	S-014
	E-019A		Hopper V-121		7.08	C-017	S-036
	E-019B		Hopper V-122				
U-017	E-020	Bag Dump Station (Ribbon Blender) (MX-112) equipped with a fabric filter dust collection unit (DC -112), 1994		238-97 656-92-C(R1)	2.03 & 7.08	C-018	S-015
						C-030	Fugitive
U-018	E-021A	B Plant Fluid Bed Dryer DR-150,1994		239-97 657-92-C(R1)	7.08	C-019	S-016
	E-021B	B Plant Calciner (HE-150), 1994 (Formerly DR-160)					
U-020	E-023A E-023B	B Plant Pneumatic Conveying System to Silos T-5 & T-10, 1995		243-97	7.08	C-022	S-019
U-021	E-024A	B Plant Ring Dryer System (Flash Dryer) 1995	One Custom made Paddle Mixer MX-200	245-97	7.08	C-023	S-020
	E-024B		One Screw Conveyor SC-211				
	E-024C		One Ring Dryer (2.84 MMBtu/hr) (Formerly D-1 with AH-200 burner)		7.06		
U-022	E-025A	One pneumatic conveying system exhausts to a dust collector, DC-210, one airlock, RV-211, two storage silos (one #20 cubic feet (Y-6) and one custom silo, V-210) equipped with a screw conveyor, and one dense phase conveyor Y-3 for the ring dryer system.	Silo Y-6	246-97 176-79-C	7.08	C-023	S-020
	E-025B		Custom Silo V-210				
	E-025C		Screw Conveyor				
	E-025D		Dense Phase conveyor Y-3				
U-024	E-027A	Rework system for off-spec zeolites, 1998	One (1) Inclined Belt Conveyor	14-99	7.08	C-025	S-022
	E-027B		One (1) Hopper (V-191)				
	E-027C		One (1) Hopper (H-193)				
	E-027D		One (1) Grinder (M-192)				
	E-027E		One (1) Screw Feeder (SC-193) for Rework System				
U-025	E-028A	Powder Storage Silo V-221 with one SC-221 silo Discharge conveyor and one SC221A Transfer conveyors		142-03 294-01-C	7.08	C-026	S-023
	E-028B						
U-038	E-041	Storage Silo V-222, 6,000 lb/hr	B Plant Molecular Sieve Production System	203-07-C	7.08	C-031	S-035
	E-042	Storage Silo V-223, 6,000 lb/hr			7.08		
	E-043A	One (1) dense phase surge hopper Y-222A, 6,000 lb/hr		205-07-C	7.08	C-032	S-036
	E-043B	One (1) dense phase			7.08		

EU	EP ID	Description		Previous Attachment/ Permit	Applicable Regulation	Control Device	Stack ID
		conveying pot Y-222B 6,000 lb/hr					
	E-043C	One (1) ball wheel system BW-122D			7.08		
U-039	E-045A	One (1) dense phase conveyor/surge hopper 6,000 lb/hr	Belt press/and dryer system for molecular sieve powder production	541-07-C	7.08	C-033	S-037
	E-045B	One (1) Ring Dryer 3,200 lb/hr			7.08		

B Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-011	B Plant conveying system dust collector (1 of 2), DC-100	233-97	99%	S-011
C-012	B Plant conveying system dust collector (2 of 2), DC-101		99%	S-034
C-013	B Plant conveying system dust collector (1 and 2), DC-110	234-97	99%	S-012
C-014	B Plant conveying system dust collector (2 of 2), DC-111		99%	S-035
C-015	B Plant Nauta Dust Collector (fabric filter–bag type), DC-141	236-97	99%	S-013
C-016	B Plant conveying system dust collector (1 of 2), DC-120	237-97	99%	S-014
C-017	B Plant conveying system dust collector (2 of 2), DC-121		99%	S-036
C-019	B Plant fluid bed dryer fabric dust collector D-140	240-97	99%	S-016
C-022	B Plant T-5 bin vent Dust Collector (BV-1)	244-97	99%	S-019
C-023	B Plant ring dryer dust collector (DC-210)	246-97	99%	S-020
C-025	B Plant Rework System Dust Collector (DC-191)	15-99	99%	S-022
C-026	B Plant Powder Storage Silo Dust Collector (DC-221)	295-01-C	99%	S-023
C-030	Bin vent for B Plant Ribbon Blender with discharge into room (DC-112)	238-97 656-92-C(R1)	99%	S-015
C-031	Two (2) dust collectors to control PM from storage silos V-222 and V-223 and from one dense phase surge hopper	204-07-C	99%	S-035
C-032				S-036
C-033	One (1) fabric filter dust collector designated as DC-215 to control PM emissions from the Ring Dryer and dense phase conveyor/surge hopper (4,746 cfm).	542-07-C	99%	S-037

C Plant Emission Points

EU	EP ID	Description		Previous Attachment	Applicable Regulation	Control Device	Stack ID
U-023	E-026A	Phase III Process System, 1996	One V-300 bead storage silo	247-97	7.08	C-024	S-021
	E-026B		One S-330 dewatering screen		7.08		
	E-026C		One V-330 bead storage tank		7.08		
	E-026D		One VF-330 vibratory feeder		7.08		
	E-026E		One DR-330 dewatering dryer		7.08		
	E-026F		V-340 bead storage tank		7.08		
	E-026G		V-341 bead storage tank		7.08		
	E-026H		One Escher Weiss fluid dryer (DR-340) (DC-140)		7.08		
	E-026I		Andritz Dryer (Insignificant Activity)		7.08	C-035	S-044
	E-026J		One E-350 cooler		7.08	C-024	S-021

EU	EP ID	Description	Previous Attachment	Applicable Regulation	Control Device	Stack ID
	E-026I K	One DM-350 product packaging system		7.08		
U-036	E-040	One AH-340 indirect natural gas burner (8 MM Btu/hr), 1996		7.06	None	S-034

C Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-024	B Plant Dust Collector (DC-344)	248-97	99%	S-021
C-035	Sly Baghouse	NA	99%	S-044

Storage Tank Emission Points

EU	EP ID	Description	Previous Permit	Applicable Regulation	Control Device	Stack ID
U-028	E-030	One (1) Hydrochloric acid storage tank (9,000 gallons) (Storage Tank T-25)	279-06-C	2.17	NA	S-025
U-030	E-033	One (1) 24,000 gallon storage tank for 37% Lithium Chloride (Storage Tank T-300)	NA Application dated Jan. 29, 1996		NA	S-028

Insignificant Activities

ID	Description	Applicable Regulation	Control Device	Stack ID
IA-1	One (1) cooling tower rated at 600 GPM, induced draft, counterflow.	7.08	NA	NA

c. Standards/Operating Limits

i. PM

- 1) The lb/hr PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits for process rates less than or equal to 60,000 lb/hr is $E = (3.59) * P^{0.62}$ and for process rates greater than 60,000 lb/hr is $E = (17.31) * (P)^{0.16}$, where P is expressed in tons/hr.
- 2) Regulation 7.06, section 4.1.1 establishes a PM standard of 0.56 pounds per million BTU actual heat input for sources that have a total heat input capacity 10 million BTU per hour or less. For heat input capacities greater than 10 million BTU per hour, but less than 250 million BTU per hour, the standard is equal to $1.919 * (\text{Total Heat Input Capacity MMBTU/hr})^{-0.535}$ per Regulation 7.06, section 4.1.4.

Equipment	Heat Input	Date Installed	Total Heat Input Capacity	Reg. 7.06 Standards	
				PM	SO ₂
U-003/E-003C Natural Gas Burner for Fluid Bed Dryer Y-19 & Calciner Y-20	4.5 MMBtu/hr	1979	4.5 MMBtu/hr	0.56 lb/MMBTU	1.0 lb/MMBTU
U-005/E-041A: Rotary Drying Calciner (Y-260) Indirect Gas Burner Indirect	4 MMBtu/hr	1987	8 MMBtu/hr	0.56 lb/MMBTU	1.0 lb/MMBTU
U-021/E-024 B Plant Ring Dryer System AH-200	2.84 MMBtu/hr	1995	11.34 MMBtu/hr	1.919 * (Total Heat Input Capacity) ^{-0.535} = 0.52 lb/MMBTU	1.0 lb/MMBTU
U-036/E-040: One AH-340 indirect natural gas burner	8 MMBtu/hr	1996	19.34 MMBtu/hr	1.919 * (Total Heat Input Capacity) ^{-0.535} = 0.39 lb/MMBTU	1.0 lb/MMBTU

ii. **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

iii. **SO₂**

Regulation 7.06, section 5.1.1 establishes a SO₂ standard of 1.0 pounds per million BTU actual heat input for sources that have a total heat input capacity 145 million BTU per hour or less.

III. Other Requirements

- 1. Temporary Sources:** The source did not request to operate any temporary facilities.
- 2. Short Term Activities:** The source did not report any short term activities.
- 3. Emissions Trading:** NA
- 4. Alternative Operating Scenarios:** The source did not request to operate under any alternative operating scenarios.
- 5. Compliance History:** Zeochem, LLC is currently in compliance.

Date	Regulation Violated	Result
2/23/11	Reg. 2.03, Section 5.02	Agreement

- 6. Emissions Calculation Methodology:** The calculated emissions are based on the monthly throughput data, AP-42 emission factors, site specific emission factor of 0.0199 lb PM/ton molecular sieve powder transferred, 0.5% loss for bead transfer, and 1% loss for other PM emission points.

7. Insignificant Activities

ID	Description	Quantity	Basis
E-038	Dumpster (44,000 lbs) 1979	1	Regulation 1.02 Appendix A section 3.10.
IA-1	Cooling Tower	1	