

STATE OF MISSOURI



PERMIT BOOK

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092010-111** Project Number: 2010-05-003

Parent Company: Chemical Lime Company

Parent Company Address: P.O. Box 985004, Ft. Worth, TX 76185

Installation Name: Chemical Lime Company of Missouri, Inc.
dba Lhoist North America

Installation Number: 186-0035

Installation Address: 20947 White Sands Rd, Ste. Genevieve, MO 63670

Location Information: Ste. Genevieve County, S17, T38N, R9W

Application for Authority to Construct was made for:

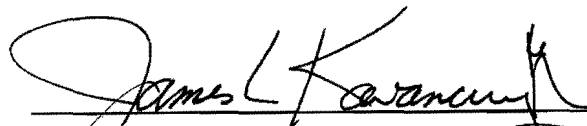
Two-phased construction project to construct a new storage building and associated handling equipment for handling up to 1.2 million tons annually of limestone. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 27 2010

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2010-05-003

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Chemical Lime Company of Missouri, Inc.
Ste. Genevieve County, S17, T38N, R9W

1. Material Handling Limits
 - A. Chemical Lime Company of Missouri, Inc. dba Lhoist North America (Chemical Lime Company of Missouri, Inc.) shall not transfer more than the following amounts of material per 12-month rolling average through the limestone storage building.
 - 1) 500,000 tons of coarse material
 - 2) 700,000 tons of fines, ag lime or chat limestone combined
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Control Device Requirement - Dust Collectors
 - A. Chemical Lime Company of Missouri, Inc. shall control emissions from the equipment listed in Table 1 using dust collectors as specified in the permit application.

Table 1: Emission Points Controlled by Dust Collectors

EP-ID	Dust Collector ID	Description
EP-221	DC-391	Controls BC-390 to BC-392
EP-222	DC-393	Controls BC-392 to BC-394
EP-223	DC-395	Controls BC-394 to BC-396
EP-224	DC-397	Controls BC-396 to BC-398
EP-225	DC-399	Controls BC-398 to BC-367
EP-226	DC-368	Controls BC-367 to fines stockpile
EP-227	DC-364	Controls BC-363 to BC-365
EP-228	DC-366	Controls BC-365 to BC-367 and BC-367 to coarse limestone stockpile
EP-229	DC-379	Controls BF-375 to BC-379
EP-230	DC-382	Controls BC-381 to BC-535
EP-237	DC-380	Controls BC-379 to BC-381
EP-238	DC-376	Controls BF-373 to BC-379
EP-239	DC-377	Controls BF-374 to BC-379

Page No.	4
Permit No.	
Project No.	2010-05-003

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. The dust collectors shall be operated and maintained in accordance with the manufacturer's specifications. The dust collectors shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resource employees may easily observe them.
 - C. Replacement filters for the dust collectors shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. On the days when the equipment is running, Chemical Lime Company of Missouri, Inc. shall conduct a daily examination on all dust collectors. This shall be completed during the daily workplace examinations. During the examination, the person completing the workplace exam shall visually inspect and record that all emission control devices are working as per manufacturer's guidelines.
 - E. Chemical Lime Company of Missouri, Inc. shall monitor and record the operating pressure drop across the dust collectors at least once per week. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - F. Chemical Lime Company of Missouri, Inc. shall maintain an operating and maintenance log for the dust collectors which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
3. Documented Haul Road Watering of Vehicular Activity Areas
- A. Chemical Lime Company of Missouri, Inc. shall control dust from the vehicular area associated with the temporary coarse limestone storage pile at this site using water or surfactant spray consistently and correctly at all times to prevent visible fugitive emissions from entering the ambient air beyond the property boundary. The following conditions apply to haul road watering:
 - 1) The water application rate shall be 100 gallons per 1000 square feet at least once every day.

Page No.	5
Permit No.	
Project No.	2010-05-003

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 2) A quarter inch or more rainfall during the preceding 24 hours shall substitute for one daily water application
 - 3) Water/surfactant application shall not be required when the ground is frozen or when there will be no traffic on the roads.
- B. Chemical Lime Company of Missouri, Inc. shall keep the following records on file and available for inspection:
- 1) A daily log initialed by the responsible facility operator of the vehicular areas watered and quantity of water/chemical application used, or notation that there was a quarter inch or greater rainfall within the past 24 hours or that the facility was not in operation.
 - 2) Water tank size, total area of roads to be watered, and the resultant number of fills necessary to accomplish the required application rate.
 - 3) Records of watering equipment breakdowns and repairs.
4. Record Keeping and Reporting Requirements
- A. Chemical Lime Company of Missouri, Inc. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
- B. Chemical Lime Company of Missouri, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2010-05-003
Installation ID Number: 186-0035
Permit Number:

Chemical Lime Company of Missouri, Inc.
20947 White Sands Rd
Ste. Genevieve, MO 63670

Complete: May 3, 2010

Parent Company:
Chemical Lime Company
P.O. Box 985004
Ft. Worth, TX 76185

Ste. Genevieve County, S17, T38N, R9W

REVIEW SUMMARY

- Chemical Lime Company of Missouri, Inc. has applied for authority to to construct a new storage building and associated handling equipment for handling up to 1.2 million tons annually of limestone.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. 40 CFR Part 60, Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants* does not apply since Chemical Lime receives its stone from Tower Rock Stone which is then stored on-site and fed into the Rotary Kiln. Stone is not quarried nor crushed on site. Therefore, the equipment that is used to transfer, screen or store limestone is not subject to the NSPS Subpart OOO.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart AAAAA, *National Emission Standards for Lime Manufacturing Plants* applies to the installation.
- Dust collectors are being used to control particulate emissions from numerous transfer points. Documented watering is being used to control particulate emissions from the vehicular areas of the temporary coarse limestone storage pile.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of particulate matter less than 10 microns in diameter (PM₁₀) and 2.5 microns in diameter (PM_{2.5}) are below de minimis levels.
- This installation is located in Ste. Genevieve County, an attainment area for all criteria pollutants.

- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Additional emissions testing is not required for the equipment associated with this project.
- An amendment to your Part 70 Operating Permit is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Chemical Lime Company operates a 2,700 ton per day lime manufacturing plant near Ste. Genevieve. Raw limestone is transported to the site from a nearby quarry (Tower Rock Stone). The limestone is calcined in two solid fuel fired (supplemented with natural gas) rotary preheater kilns. Product lime is then transported to customers by barge, rail, and truck. Fuel in the form of coal and coke arrives at the plant via barge, rail, or truck and is stored in covered bins.

Chemical Lime is considered a major source under construction permits and a Part 70 source under operating permits. A Part 70 operating permit was issued February 5 of 2010 (OP2010-016). Table 2 lists the construction permits that have been issued to Chemical Lime Company from the Air Pollution Control Program.

Table 2: Construction Permit History

Permit Number	Description
1294-004	Lime kiln
1298-023	Temporary Permit for transfer of iron ore
012000-021	Temporary Permit for coal hopper
012001-004	Temporary Permit for coal hopper
092001-005	Installation of emergency reject bin, modification of BN-809 system and increase feeding rate on BN-411 weigh feeder.

PROJECT DESCRIPTION

Chemical Lime is seeking authority to construct a new storage building and associated handling equipment to handle up to 1.2 million tons annually of limestone. The building will contain two stockpiles, one for limestone fines (consisting of fines, ag and chat limestone) and the other for coarse limestone. This project provides Chemical Lime the ability to store the limestone inside a building to reduce the introduction of excess moisture. Ultimately, the purpose of the project is to provide beneficial reuse and sale of the fines material that is mostly wasted and used for backfill material in the quarry.

This project will occur in two phases. Information relating to both phases are described below. In summary, during Phase I of the project, the fines, ag, and chat limestone from the storage bins will be hauled to the new enclosed storage building via Tower Rock Stone's (TRS) haul roads and coarse limestone will be hauled from Phase II or Phase IV areas via TRS haul roads. During Phase II of the project, Chemical Lime will add a new conveying system to transport the fines and ag limestone from the bins to the new storage building rather than hauling the material by truck. Chat limestone will continue to be hauled by truck from the bins to the new storage building. Since this project is considered phased construction, the potential emissions of both phases are combined for permit type determination.

Phase I:

Initially, fines and ag limestone from TRS Phase IV fines bin and ag lime bin will be the primary feedstock being sent to the new building. The fines and ag limestone will be hauled by truck to a dump hopper. Coarse limestone will be hauled from either TRS Phase II or TRS Phase VI to an outdoor temporary coarse limestone storage pile located next to the 100 ton dump hopper, and then loaded via a loader to the same dump hopper as used for the fines. From the dump hopper, the limestone will be transported via a system of new conveyors to the fines limestone stockpile or the coarse limestone stockpile located inside the new enclosed storage building. All transfer points prior to the conveyor leading into the limestone building are uncontrolled. All truck haulage to the dump hopper is via haul roads that exist within the TRS permit (Permit No. 052001-013A), or will be rerouted for new haul routes as allowed within the TRS's permit as the quarry expands and reclamation occurs.

Five vibrating feeders located underneath the stockpiles in the new enclosed storage building will blend the coarse and fines limestone from the piles and transport the blended limestone to a new belt conveyor (BC-379). Emissions from the feeders will be controlled by three dust collections (DC-367, DC-377 and DC-378). The blended limestone from BC-379 will be transported to conveyor BC-381, and then to series of existing conveyors (BC-535, BC-538) before being loaded out onto a barge. The transfer of material from existing conveyor B-535 to BC-538 is controlled by existing dust collectors, DC-537 and DC-537C. The load out of limestone from BC-538 to the barge is controlled by an existing dust collector DC-542. The throughputs of the existing belt conveyors BC-535 and BC-538 will increase as a result of this project. A potentials-minus-actuals calculation was performed on these emission points. The potential emissions for these dust collectors (DC-537, DC-537C and DC-542) are based on grain loadings and exhaust flow rates. Since the dust collectors have operated continuously over the past 2 years, the net increase in emissions is zero.

Phase II:

In Phase II, Chemical Lime will add a new conveying system to transport the fines and ag limestone from the existing bins to the new storage building in lieu of hauling. All of the transfer and overland conveyors will be controlled by dust collectors. Chat will continue to be hauled from the storage bins to the 100 ton dump hopper as described in Phase I.

The following table lists all of the new emission units associated with both Phases of this project.

Table 3: New Emission Units

EP ID	Transfer Point From	Transfer Point To	Annual Throughput (tpy)	Materials Handled	Control
Phase I					
EP-226	BC-367	Fines Limestone stockpile	700,000	Fines	DC-368
EP-227	BC-363	BC-365	1,200,000	Fines/Coarse	DC-364
EP-228	BC-365	BC-367	1,200,000	Fines/Coarse	DC-366
	BC-367	Coarse Limestone Stock pile	500,000	Coarse	
EP-229	BF-375	BC-379	1,200,000	Fines/Coarse	DC-379
EP-230	BC-381	BC-535	1,200,000	Fines/Coarse	DC-382
EP-233a	Ag, Fines and Chat Limestone Bins	100 Ton Dump Hopper	700,000	Fines	None
EP-233b	Temporary Coarse Storage Pile	100 Ton Dump Hopper	500,000	Coarse	None
EP-234	Phase II & Phase VI Storage Area	Temporary Coarse Storage Pile	500,000	Coarse	None
EP-235a	100 Ton Dump Hopper (fines limestone)	Conveyor BC-363	700,000	Fines	None
EP-235b	100 Ton Dump Hopper (coarse limestone)	Conveyor BC-363	500,000	Coarse	None
EP-236	Temporary Storage Pile – Wind Activity		0.07 acres	Coarse	None
EP-237	Conveyor BC-379	Conveyor BC-381	1,200,000	Fines/Coarse	DC-380
EP-238	Conveyor BF-373	Conveyor BC-379	1,200,000	Fines/Coarse	DC-376
EP-239	Conveyor BC-374	Conveyor BC-379	1,200,000	Fines/Coarse	DC-405
Phase II					
EP-221	Conveyor BC-390	Conveyor BC-392	1,200,000	Fines/Coarse	DC-391
EP-222	Conveyor BC-392	Conveyor BC-394	1,200,000	Fines/Coarse	DC-393
EP-223	Conveyor BC-394	Conveyor BC-396	1,200,000	Fines/Coarse	DC-395
EP-224	Conveyor BC-396	Conveyor BC-398	1,200,000	Fines/Coarse	DC-397
EP-225	Conveyor BC-398	Conveyor BC-367	1,200,000	Fines/Coarse	DC-399
EP-231	TRS Transfer Fines Limestone Bin	Conveyor BC-392	700,000	Fines	None
EP-232	TRS Trsnfer Ag Limestone Bin	Conveyor BC-390	700,000	Fines	None

EMISSIONS/CONTROLS EVALUATION

The project's potential emissions are primarily PM₁₀ and PM_{2.5} that are associated with the limestone handling. A description of the emission factors sources and calculation methods are described as follows.

- The following emission points were calculated using the predictive equation (Eqtn 1) from the United States Environmental Protection Agency (EPA) document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Section 13.2.4, Aggregate Handling and Storage Piles* (November 2006).

- Load-in to the 100 ton dump hopper (EP-233a, 233b) from haul trucks
- Load-out of the 100 ton dump hopper (EP-235a, EP-235b) to the feeder belt conveyor (BC-363)
- Load-in (EP-234) to the coarse limestone storage pile located next to the 100 ton dump hopper from haul trucks
- The emissions from sources controlled by dust collectors were based on a grain loadout of 0.005 grains per dry standard cubic feet (gr/dscf). Estimated air flow through each dust collector is equal to 2,000 dry standard cubic feet per minute (dscfm) for the new dust collectors associated with Phase I and 1,500 dscfm for the dust collectors associated with Phase II.
- Wind erosion emissions associated with the temporary coarse storage pile (EP-236) were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."
- Emissions from vehicular activity areas associated with EP-236 were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 90% control efficiency is applied to the emission calculations for the use of documented watering.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2009 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	Major	137.04	7.75	N/A
PM _{2.5}	10.0	Major	60.42	4.91	N/A
SO _x	40.0	Major	128.61	N/A	N/A
NO _x	40.0	Major	1,427.69	N/A	N/A
VOC	40.0	Major	8.61	N/A	N/A
CO	100.0	Major	28.37	N/A	N/A
HAPs	10.0/25.0	Major	15.93	N/A	N/A

N/A = Not Applicable

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ and PM_{2.5} are below de minimis levels.

APPLICABLE REQUIREMENTS

Chemical Lime Company of Missouri, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits, 10 CSR 10-6.065*
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-3.090*

SPECIFIC REQUIREMENTS

- *Maximum Achievable Control Technology (MACT) Regulations, 10 CSR 10-6.075, National Emission Standards for Lime Manufacturing Plants, 40 CFR Part 63, Subpart AAAAA*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 29, 2010, received May 3, 2010, designating Chemical Lime Company as the owner and operator of the installation.
- Revision 1.0 of the Application for Authority to Construct emailed July 15, 2010.
- Revision 2.0 of the Application for Authority to Construct emailed July 21, 2010.
- Revision .0 of the Application for Authority to Construct emailed August 16, 2010.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated May 26, 2010.

