

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

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**FEB - 7 2012**

Mr. Paul Schell  
Environmental Engineer  
Lone Star Industries, Inc., dba/Buzzi Unicem USA  
P.O. Box 520  
Cape Girardeau, MO 63702

RE: New Source Review Temporary Permit Application  
Installation ID: 031-0021, Expiration Date: January 1, 2013  
Temporary Permit Number: **022012-004**

Dear Mr. Schell:

The Missouri Department of Natural Resources' Air Pollution Control Program has completed a review of your December 8, 2011 request to conduct a study involving the use of liquid hazardous waste in the calciner as an alternative fuel. The Air Pollution Control Program is hereby granting your request to conduct this temporary activity according to Missouri State Rule 10 CSR 10-6.060(3), *Temporary Installations and Pilot Plants Permits*. Operation of the calciner alternative fuel study shall not go beyond January 1, 2013.

Lone Star Industries, Incorporated dba/Buzzi Unicem USA (Buzzi) operates a cement manufacturing process located at 2524 South Sprigg Street, Cape Girardeau, Missouri in Cape Girardeau County. Buzzi is a major source with emissions of particulate matter, nitrogen oxides, sulfur dioxide, carbon monoxide, volatile organic compounds, and greenhouse gases all exceeding 100 tons per year. Buzzi has requested the authority to install a feed system to deliver liquid hazardous waste to the calciner as an alternative fuel. The purpose of the study is to evaluate the viability of liquid hazardous waste as a substitute for coal. This capability would lead to lower fuel costs because the suppliers of liquid hazardous waste pay Buzzi for the proper disposal of their waste.

Buzzi currently uses liquid hazardous waste as an alternative to coal in the kiln section which is downstream of the calciner in the cement manufacturing process. As a result, the existing process is considered a hazardous waste cement kiln and is already subject to 40 CFR Part 63, Subpart EEE, *National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors*. This standard allows for the burning of hazardous waste for the purposes of testing or pretesting for no more than 720 hours. For this reason, this temporary permit restricts the calciner alternative fuel study to 720 hours of operation.

According to 10 CSR 10-6.060(3), temporary permits may be issued for projects that have the potential to emit less than 100 tons per year for each pollutant. Table 1 below compares the emission factors for each pollutant. Although the emission factor for carbon monoxide (CO) is slightly higher, the increase in CO is expected to be less than 3 tons for the entire 720 hours allowed for the study. Emissions of all other pollutants are expected to be the same or less.

Table 1: Emission Factor Comparison for the Calciner Alternative Fuel Study

Pollutant	Coal (lb pollutant per mmBtu)	Liquid Hazardous Waste (lb pollutant per mmBtu)
PM	3.31	0.16
PM <sub>10</sub>	0.77	0.14
PM <sub>2.5</sub>	0.20	0.083
SO <sub>x</sub>	3.30	1.87
NO <sub>x</sub>	0.62	0.51
VOC	0.003	0.003
CO	0.021	0.054

Given that the potential emissions are expected to be below 100 tons for each pollutant, the request was made prior to the installation of the liquid waste feed system, and the ambient air quality standards are expected to be maintained; the proposed temporary permit is granted according to the provisions of Missouri State Rule 10 CSR 10-6.060(3). Subsequent notification should be made to the Air Pollution Control Program once the liquid waste feed system has been removed or disabled. The following conditions apply to this temporary activity:

1. The cumulative hours of operation of the calciner alternative fuel study (sum of all trials) shall not exceed 720 hours.
2. No later than 90 days following the expiration of this permit, Buzzi shall submit a project report to the Air Pollution Control Program. This report shall include:
  - a. A copy of the analytical data for each batch of liquid hazardous waste material used during any trial.
  - b. The start date, start time, and duration of each trial.
  - c. The quantity in gallons, the density in pounds per gallon, and the Btu content of the liquid hazardous waste material used for each trial.
  - d. A table of emission factors developed for all regulated pollutants (including all criteria pollutants, greenhouse gases, and hazardous air pollutants).
  - e. The emission factors shall be reported in units of pounds pollutant per million BTU's and pounds pollutant per 1000 gallons liquid waste.
  - f. A comparison of the emission factors developed for the liquid hazardous waste and the emission factors for coal.
  - g. A summary and discussion of the methods used to develop the emission factors.
  - h. Conclusions reached concerning the long term feasibility of using liquid hazardous waste as a coal substitute in the calciner.
3. No later than 90 days following the expiration of this permit, Buzzi shall either permanently remove or physically disable (e.g. lock out) the liquid hazardous waste feed system and fuel storage equipment installed for this temporary activity.

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Although stack testing is not required for this temporary activity, Buzzi should be aware that stack test results would be helpful if Buzzi should decide to pursue further permitting under 10 CSR 10-6.060, *Construction Permits Required*.

Buzzi should also be aware that burning liquid hazardous waste in the calciner beyond the expiration of this permit or for purposes other than evaluating feasibility may be considered a change in the method of operation and subject to Prevention of Significant Deterioration (PSD) review.

This temporary permit does not give Buzzi the authority to exclude any emissions associated with this temporary activity from any applicable emission limit. Additionally, Buzzi is still obligated to meet all other applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you shall not violate:

- 10 CSR 10-6.165, *Restriction of Emission of Odors*
- 10 CSR 10-6.170, *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*
- 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*
- 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter From Industrial Processes*

A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this permit, please contact Kathi Jantz with the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

  
Kyra L. Moore  
Director

KLM:kjl

c: Southeast Regional Office  
PAMS File: 2011-11-035