

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Land Management Administration • Solid Waste Program

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FEB 10 2014

Coal Combustion Byproducts (CCBs) Annual Generator Tonnage Report Instructions for Calendar Year 2013

SOLID WASTE
OPERATIONS DIVISION

The following is general information relating to the requirement for reporting quantities of coal combustion byproducts (CCBs) that were managed in the State of Maryland during calendar year 2013. Please answer the questions on the form provided, attaching additional information and any requested supplemental information to the back of the form. *Note that the form for this year requires both volume and weight of the CCBs produced. If you know one of these parameters but not the others, for example, you have the tonnage produced but not the volume, you may calculate the other parameter; however, please provide the calculations and assumptions that you used in your estimate.* Questions can be directed to the Solid Waste Program at (410) 537-3315 or via email at ed.dexter@maryland.gov.

I. Background. This requirement that generators of CCBs submit an annual report was instituted in the Code of Maryland Regulations COMAR 26.04.10.08, that was promulgated effective December 1, 2008. The regulation requires that any non-residential generator of CCBs submit a report to the Department by March 1 of each year describing the manner in which CCBs generated within the State were managed during the preceding calendar year. Additional information and specific instructions follow. For more detailed information, please refer to COMAR 26.04.10.08.

II. General Information and Applicability.

A. Definitions. CCBs are defined in COMAR 26.04.10.02B as:

“(3) Coal Combustion Byproducts. (a) "Coal combustion byproducts" means the residue generated by or resulting from the burning of coal.

(b) "Coal combustion byproducts" includes fly ash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods.”

A generator of CCBs is defined in COMAR 26.04.10.02B as:

“(9) Generator.

(a) "Generator" means a person whose operations, activities, processes, or actions create coal combustion byproducts.

(b) "Generator" does not include a person who only generates coal combustion byproducts by burning coal at a private residence.”

B. Applicability. If you or your company meets the definition of a generator of CCBs as defined above, you must provide the information as required below. For the purposes of this report, “you” shall hereinafter refer to the generator defined above. Please note that COMAR 26.04.10.08 requires generators of CCBs to submit an annual report to the Department concerning the disposition of the CCBs that they generated the previous year. **THIS INCLUDES CCBs THAT WERE NOT SEPARATELY COLLECTED BUT WERE PRODUCED BY THE BURNING OF COAL AND WERE DIRECTLY CONTRIBUTED TO A PRODUCT, such as cement.** Where the amount cannot be directly measured, estimates based on the amount of coal burned can be used. The method of determining the volume of CCBs produced must be described.

III. Required Information. The following information must be provided to the Department by March 1, 2014:

A. Contact information:

Facility Name: Lehigh Cement Company LLC

Name of Permit Holder: _____

Facility Address: 675 Quaker Hill Road
Street

Facility Address: Union Bridge MD 21791
City State Zip

County: Carroll

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 410-386-1210 Facility Fax No.: 410-386-1296

Contact Name: Kurt W. Deery

Contact Title: Environmental Engineer

Contact Address: Same
Street

Contact Address: SAME
City State Zip

Contact Email: kdeery@lehighcement.com

Contact Telephone No.: 410-386-1229 Contact Fax No.: same

For questions on how to complete this form, please contact the Solid Waste Program at 410-537-3315

B. A description of the process that generates the CCBs, including the type of coal or other raw material that generates the CCBs. If the space provided is insufficient, please attach additional pages:

Lehigh burns coal & dried class A biosolids for the production of cement clinker. All ash generation is incorporated into the clinker

Lehigh utilizes fly ash and bottom ash in the production of clinker

C. The volume and weight of CCBs generated during calendar year 2013, including an identification of the different types of CCBs generated and the volume of each type generated. If the space provided is insufficient, please attach additional pages in a similar format. If converting from volume to weight or weight to volume, please provide your calculations and assumptions. See Attached.

Table I: Volume and Weight of CCBs Generated for Calendar Year 2013: Please note the change to this table from previous years, to include both the volume and weight of the types of CCBs your facility produces.

SEE ATTACHED TABLES.

| Volume and Weight of CCBs Generated for Calendar Year 2013 | | | |
|---|-------------------------------|-------------------------------|-------------------------------|
| Type of CCB | Type of CCB | Type of CCB | Type of CCB |
| Volume of CCB, in Cubic Yards | Volume of CCB, in Cubic Yards | Volume of CCB, in Cubic Yards | Volume of CCB, in Cubic Yards |
| Weight of CCB, in Tons | Weight of CCB, in Tons | Weight of CCB, in Tons | Weight of CCB, in Tons |

and (b) The different uses by type and volume of CCBs:

See ATTACHED

If the space provided is insufficient, please attach additional pages in a similar format.

G. A description of how you intend to dispose of or use CCBs in the next 5 years, identifying:

(a) The types and volume of CCBs intended to be disposed of or used, the location of intended disposal, mine reclamation and use sites, and the type and volume of CCBs intended to be disposed of or used at each site:

NA

and (b) The different intended uses by type and volume of CCBs.

NA

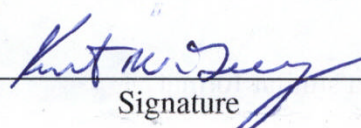
If the space provided is insufficient, please attach additional pages in a similar format.

Facility Name: LEHIGH

CCB Tonnage Report - 2013

IV. Signature and Certification. An authorized official of the generator must sign the annual report, and certify as to the accuracy and completeness of the information contained in the annual report:

This is to certify that, to the best of my knowledge, the information contained in this report and any attached documents are true, accurate, and complete.

| | | |
|--|--|--------|
|  Signature | 410-386-1229 | |
| | KURT W. DEERY, ENVIRON ENRG | 2/7/14 |
| | Name, Title, & Telephone No. (Print or Type) | Date |
| | <u>KDeery@LehighCement.com</u> Your Email Address | |

V: Attachments (please list):

TABLE 1 & TABLE 2 → ASH QUANTITIES

PROCESS DESCRIPTION

Lehigh Cement Company

675 Quaker Hill Road
Union Bridge, MD 21791
Phone (410) 386-1210
Fax (410) 386-1296

Table 1: Fly Ash Totals

| Fly Ash Supplier | Supplier Location | Total Short Tons Delivered to Lehigh | Cubic Feet of Material* | Yards of Material |
|------------------|---------------------|--------------------------------------|-------------------------|-------------------|
| Constellation | Baltimore, MD | 29,244.00 | 1,299,733 | 48,138 |
| PSE&G | Jersey City, NJ | 3,939.00 | 175,067 | 6,484 |
| PSE&G | Mercer, NJ | 47.00 | 2,089 | 77 |
| PSE&G | Bridgeport | 2,074.00 | 92,178 | 3,414 |
| NRG | Dover, DE | 124.00 | 5,511 | 204 |
| PPL | Washingtonville, PA | 9,401.00 | 417,822 | 15,475 |
| Boral Materials | Norfol, VA | 427.00 | 18,978 | 703 |
| Total | | 45,256.00 | 2,011,378 | 74,495.47 |

*Note: Fly ash = 45 lbs/cu. Ft as measured by Lehigh Lab

Table 2: Bottom Ash Totals

| Bottom Ash Supplier | Supplier Location | Total Short Tons Delivered to Lehigh | Cubic Feet of Material* | Yards of Material |
|---------------------|------------------------------|--------------------------------------|-------------------------|-------------------|
| Constellation | Baltimore, MD | 10,599.00 | 302,829 | 11,216 |
| PH Gladfelter | Springrove, PA | 17,759.00 | 507,400 | 18,793 |
| BMI | Fairless Hills, PA | 0.00 | 0 | 0 |
| First Energy | R Paul Smith, Hagerstown, MD | 207,485.00 | 5,928,143 | 219,561 |
| RFI | Ox Paper, WV | 1,312.00 | 37,486 | 1,388 |
| RFI | Rocket | 782.00 | 22,343 | 828 |
| PPL | York Haven, Pa | 4,217.00 | 120,486 | 4,462 |
| UGI | Senew | 977.00 | 27,914 | 1,034 |
| Total | | 243,131.00 | 6,946,600 | 257,281.48 |

*Note: Bottom Ash = 70 lbs/cu. Ft as measured by lehigh Lab

Total short tons of CCBs used Year 2013 = 288,387.00

Total Yards of CCBs used Year 2013 = 331,777.0

Calculations

(Tons * 2000 lb/ton / lbs/cu ft) = cubic feet of material

Cubic Feet of material * (1 yard/ 3ft)³ = yards of material

Lehigh Cement Company LLC
Process Description
Title V #: 24-013-00012

Lehigh Cement Company
675 Quaker Hill Road
Union Bridge, MD 21791
Phone (410) 386-1210
Fax (410) 386-1296

Raw materials containing oxides of calcium, silicon, aluminum and iron are chemically combined through a 5-stage pyro-processing system creating clinker. Subsequently, the clinker is finish-ground with gypsum and other additives to form cement products.

Pyro-processing is a process in which materials are subjected to high temperatures (typically over 800°C) in order to bring about a chemical or physical change. The Union Bridge plant's pyroprocessing system consists of a 5-stage pre-heater tower and rotary kiln. The preheater tower contains secondary firing and a rotary kiln. Fuel used in the system may consist of coal, dried biosolids and fuel oil. Energy, in the form of fan-power, is required to draw the kiln combustion gases through the string of cyclones. It is also normal to use the warm exhaust gas to dry the raw materials in the raw-mill and operate the coal mill. The air volume will eventually pass through a dust collector vented to the atmosphere.

Environmental controls installed in the pyro-processing line are SNCR for nitrous oxide reduction, Activated Carbon injection for mercury reduction and a fabric filter dust collector for particulate control.

Clinker is the product produced from the pyro-processing system. Clinker is lumps or nodules, usually 3–25 mm in diameter, produced by sintering limestone and alumino-silicate (clay) during the cement kiln stage. Clinker consists of various calcium silicates, including tricalcium silicate (Ca_3SiO_5 , also written $\text{CaO}\cdot\text{Ca}_2\text{SiO}_4$) and dicalcium silicate (Ca_2SiO_4). Tricalcium aluminate and calcium aluminoferrite are other common components. Clinker is made by heating in the pyroprocessing system at high temperature a homogeneous mixture of raw materials. The products of the chemical reaction aggregate together as molten minerals at the sintering temperature. The sintering temperature for modern cements is about 1450 °C.

Clinker will exit the kiln into a clinker cooler. The cooler utilizes fans to force ambient air through the hot clinker bed to cool the clinker. A portion of this air also provides combustion air required in the kiln, known as secondary air. The remaining air is passed through a dust collector and into the atmosphere. The cooled clinker is conveyed to an enclosed clinker storage structure.

The reclaimed clinker from the storage vessel is conveyed by a covered belt into the crane hall where it will be fed to the finish mills. The clinker is ground into cement with other additives by one vertical finish mills and two ball mills. The ground clinker and additives, now cement, is pneumatically transferred from the finish mills to storage silos located in the shipping area.

Figure 1 presents the general process layout of the Union Bridge Plant. The process includes quarried limestone, raw material grinding and storage, kiln feed preparation, pyroprocessing, clinker cooling and storage, clinker grinding and finish product shipping.

The Plant Manager is the responsible official for the Lehigh Cement Plant located at 675 Quaker Hill Road, Union Bridge MD. Currently, the Plant Manager is Kent D. Martin. The Plant Manager can be reached at 410-386-1210.

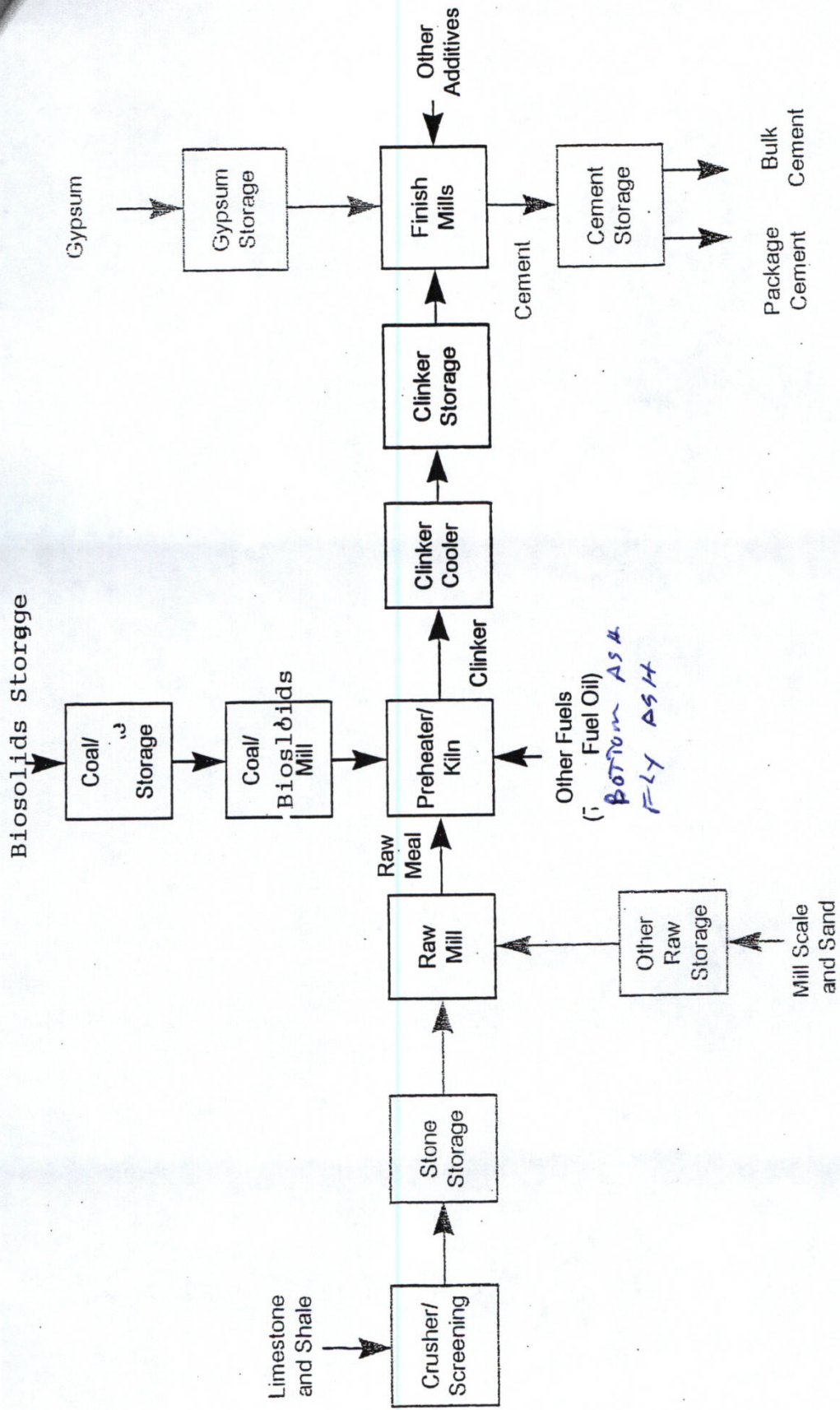


Figure .1. Union Bridge Plant general process flow diagram