

**\*This redline version of the Class 3 Permit modification approved June 30, 2010, shows what conditions were modified. Deletions are shown as red strikeouts and additions are in blue and underlined.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
HAZARDOUS WASTE MANAGEMENT PERMIT - PART II  
AUTHORIZATION UNDER THE HAZARDOUS AND  
SOLID WASTE AMENDMENTS OF 1984

Pursuant to Section 227 of the Hazardous and Solid Waste Amendments of 1984 (hereafter referred to as "HSWA"), 18 U.S.C. § 6926, the United States Environmental Protection Agency (hereafter referred to as "EPA") is granted authority to issue or deny permits or those portions of permits affected by the requirements established by HSWA. By this authority and pursuant to Sections 3001(g), 3001(h), 3002(b), 3004(d), and 3005 of the Resource Conservation and Recovery Act ("RCRA") as amended by HSWA, 42 USC §§ 6921(g), 6921(h), 6922(b), 6924(d), and 6925, EPA hereby grants Continental Cement Company, LLC, as the facility owner and operator (hereafter referred to as the "Permittee"), EPA ID Number MOD054018288, permission to perform activities required by HSWA at their facility located at Highway 79, Hannibal, Missouri, north latitude 39°40' 048", west longitude 091°18' 050", in accordance with the conditions of Part II of this Permit.

Part II of this Permit addresses other HSWA requirements as administered and enforced by EPA. Applicable regulations are found in 40 CFR Parts 260 through 264, 266, 268, 270, and 124, as specified in Part II of this Permit.

All regulations cited in Part II of this Permit refer to regulations in effect on the date of Part II of this Permit issuance. With the exception of regulations in existence at the time of Permit issuance and referenced in Part II of this Permit, the only other RCRA regulations applicable to this facility during the life of Part II of this Permit will be self-implementing regulations.

The Regional Administrator of EPA Region 7 has delegated authority to perform all actions necessary to issue, deny, modify, or revoke and reissue Permits for owners and operators of hazardous waste treatment, storage, and disposal facilities pursuant to Section 3005 of RCRA to the Director of Region VII, Air, RCRA, and Toxics Division (hereafter referred to as "Director") or the Director's designated representative, by delegation No. R7-8-6, January 1, 1995, revised September 16, 2007.

Part II of this Permit is based on the assumption that the information applicable to the Permit, in the permit application dated October 22, 1998, and subsequent submittals dated Class 3 permit modification request dated and submitted March 16, 2007, (cement kiln portion), Class 3 permit modification request submitted March 30, 2007, (RCRA facility portion), revised Part A dated October 9, 2008, and June 26, 2009, response to technical comments dated May 13, 2009, and August 11, 2009, are accurate and that the facility will be operated as specified in the application and submittals.

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

Any inaccuracies found in the application or other submitted information may be grounds for the, modification, revocation and re-issuance, or termination of Part II of this Permit in accordance with 40 CFR §§ 270.41, 270.42, and 270.43, or for enforcement action pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928. The Permittee must inform EPA of any deviation from or changes in the application that would affect the Permittee's ability to comply with Part II of this Permit.

Part II of this permit shall be issued at 12:01 AM on October 14, 1999, and shall remain in effect until 12:00 AM on October 14, 2009, unless revoked and reissued, terminated or continued in accordance with 40 CFR §§ 270.41, 270.43, and 270.51. It shall remain in effect even if Part I is terminated or has expired.

Done at Kansas City, Kansas, this 13<sup>th</sup> day of October, 1999.

[Original signed by William A. Spratlin]

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William A. Spratlin  
Director,  
Air, RCRA, and Toxics Division

Modifications to this Part II of the Permit are done and codified herein at Kansas City, Kansas, this ~~25<sup>th</sup>~~ 18<sup>th</sup> day of ~~August~~ July, 2008, and become effective immediately.

[Original signed by John J. Smith for]

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Becky Weber  
Director, Air and Waste Management Division

Modifications to this Part II of the Permit are done and codified herein at Kansas City, Kansas, this 30<sup>th</sup> day of June, 2010, and become effective immediately unless stayed in whole or in part in response to an appeal pursuant to 40 CFR 124.19.

[Original signed by Becky Weber]

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Becky Weber  
Director, Air and Waste Management Division

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## A. DEFINITIONS

For purposes of Part II of this Permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, 266, 268, and 270, unless Part II of this Permit specifically provides otherwise. Where terms are not defined in RCRA, the regulations, the Permit or EPA guidance or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

“Hazardous waste” means any solid waste as defined in 40 CFR § 261.2 which also meets any of the criteria of a hazardous waste as listed in 40 CFR § 261.3.

“Permit application” means the ~~p~~Permit application that was submitted by the Permittee dated October 22, 1998-submitted by Continental Cement Company, LLC, Class 3 permit modification dated and submitted March 16, 2007 (cement kiln portion), Class 3 permit modification submitted March 30, 2007 (RCRA facility portion), revised Part A dated October 9, 2008 and June 26, 2009, response to technical comments dated May 13, 2009 and August 11, 2009, will hereafter be referred to as the “approved Permit application.”

“Permit application for the new kiln” means the permit application dated March 16, 2007, submitted by Continental Cement Company, LLC.

“Permit application for the new storage and treatment units” means the permit application dated March 30, 2007, and subsequent revisions dated May 13, 2009 and August 11, 2009, submitted by Continental Cement Company, LLC.

## B. STANDARD CONDITIONS

### *B.1. Submittal of Permit Requirements*

a. Failure to submit the information required in Part II of this Permit, or falsification of any submitted information, is subject to enforcement and/or termination of II of this Permit by the EPA pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928 and 40 CFR § 270.43.

b. The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Director required in Part II of this Permit are signed and certified in accordance with 40 CFR §§ 270.11 and 270.30(k).

c. Changes to the due dates specified in Part II of this Permit may be granted by the Director in accordance with the Permit modification procedures set forth in 40 CFR § 270.42. The Director may grant certain extensions to due dates in accordance with the regulations and in writing.

d. Unless otherwise specified, two copies of these plans, reports, notifications or other submissions shall be submitted to the EPA and sent by certified mail or hand delivered to:

U.S. EPA, Region 7  
Attn: RCRA Corrective Action and Permits Branch  
Air and Waste Management Division  
901 N. 5th St.  
Kansas City, KS 66101

In addition, ~~one copy~~three copies of these plans, reports, notifications or other submissions shall be submitted to:

Missouri Department of Natural Resources  
Attn: Hazardous Waste Program  
P.O. Box 176  
Jefferson City, MO 65102

## ***B.2. Permit Modification, Revocation and Re-Issuance, and Termination***

a. Part II of this Permit may be modified, revoked and reissued, or terminated for cause, as specified in 40 CFR §§ 270.41, 270.42, and 270.43.

b. If the Director determines that further actions beyond those required in Part II of this Permit, or changes to the requirements set forth herein, are warranted, the Director may modify Part II of this Permit in accordance with 40 CFR § 270.41.

c. Pursuant to the provisions of 40 CFR § 270.42, the Permittee may request a modification of Part II of this Permit at any time.

d. Modifications to Part II of this Permit do not constitute a re-issuance of the Permit. The filing of a request for a Permit modification, revocation and re-issuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any condition in Part II of this Permit.

## ***B.3. Permit Renewal***

a. Part II of this Permit may be renewed as specified in 40 CFR § 270.30(b). Review of any application for a Permit renewal shall consider improvements on the state of control and measurement technology, as well as changes in applicable regulations.

b. If the Permittee wishes or is required to continue an activity regulated by Part II of this Permit after the expiration date of Part II of this Permit, the Permittee shall submit a complete application for a new permit prior to the expiration of Part II of this Permit. Such application must be submitted at least 180 calendar days prior to Permit expiration unless permission for a later submission date has been granted by the Director.

#### ***B.4. Transfer of Permits***

Part II of this Permit is not transferable to any person or entity until such a time as Part II of this Permit has been modified or revoked and reissued to identify the proposed new owner or operator of the facility (hereafter referred to as "New Permittee") and to incorporate such other requirements as may be necessary, all in accordance with the procedures set forth in 40 CFR Part 270, Subpart D. At least 90 calendar days prior to the anticipated date of transfer, the New Permittee shall submit to the Director: 1) a revised Permit application; and 2) a copy of the written agreement between the Permittee and the New Permittee, containing the specific date for transfer of the Permit responsibilities described herein. The Permittee and the New Permittee shall also comply with the financial requirements as more specifically set forth in 40 CFR § 270.40 and

40 CFR Part 264, Subpart H. It shall be the Permittee's responsibility to notify the New Permittee in writing of the requirements of 40 CFR Parts 264 and 270 and Part II of this Permit. In the event that Part II of this Permit is not modified or revoked and reissued to identify the proposed new owner or operator of the facility, the Permittee shall conduct final closure in accordance with the closure plan submitted with the approved permit application prior to transfer of facility ownership or operational control.

#### ***B.5. Severability***

The provisions of Part II of this Permit are severable, and if any provision of Part II of this Permit, or the application of any provision of Part II of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of Part II of this Permit shall not be affected thereby.

#### ***B.6. Appeal of a Permit***

Part II of this Permit may be appealed pursuant to the provisions of 40 CFR §124.19(a), which provides, in pertinent part, as follows:

Within 30 calendar days after a RCRA final Permit decision has been issued under 40 CFR § 124.15, any person who filed comments on that draft Permit or participated in the public hearing may petition the Environmental Appeals Board, in writing, to review any condition of the Permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft Permit may petition for administrative review only to the extent of the changes from the draft to the final Permit decision. The 30-day period within which a person may request

review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous; or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

### ***B.7. Duty to Comply***

The Permittee shall comply with all conditions in Part II of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit (see 40 CFR § 270.61). Any noncompliance with Part II of this Permit, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and Part II of this Permit and is grounds for enforcement action; for Permit modification, revocation and re-issuance, or termination; or for denial of a Permit renewal application.

### ***B.8. Need to Halt or Reduce Activity Not a Defense***

In any enforcement action, it shall not be a defense for the Permittee to establish that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of Part II of this Permit.

### ***B.9. Duty to Mitigate***

In the event of noncompliance with Part II of this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

### ***B.10. Proper Operation and Maintenance***

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of Part II of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of redundant, back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of Part II of this Permit.

### ***B.11. Duty to Provide Information***

The Permittee shall furnish to the Director, within a time specified by the Director, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating Part II of this Permit, or to determine compliance with Part II of this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by Part II of this Permit.

### ***B.12. Inspection and Entry***

Pursuant to 40 CFR § 270.30(i), the Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of Part II of this Permit;
- c. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under Part II of this Permit; and
- d. Sample or monitor, at reasonable times, for the purpose of assuring compliance with Part II of this Permit or as otherwise authorized by RCRA, any substances or parameters at any location.

### ***B.13. Monitoring and Records***

a. The Permittee shall retain all records required by Part II of this Permit, the certification required by 40 CFR § 264.73(b)(9), and records of all data used to complete the application for Part II of this Permit, for a period of at least three years from the date of the sample, measurement, report, record, certification, or application. This period may be extended by request of the Director at any time and is automatically extended during the course of any disputed matter including any unresolved enforcement action (as contemplated by Section 3008 of RCRA, 42 U.S.C. § 6928 and 40 CFR § 270.43) regarding this facility.

In the case where monitoring and records are no longer required by Part II of this Permit due to the Permittee's compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR

§§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements, all previous records are still subject to this Permit Condition.

- b. Pursuant to 40 CFR § 270.30(j)(3), records of monitoring information shall specify:
- (1) The dates, exact place, and times of sampling or measurements;
  - (2) The individuals who performed the sampling or measurements;
  - (3) The dates analyses were performed;
  - (4) The individuals who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.

#### ***B.14. Reporting Planned Changes***

The Permittee shall give notice to the Director as soon as possible of any planned physical alteration or additions to the permitted facility, except for those alterations or additions which require modification of Part 2 of this Permit in which case the notice requirements of Permit Condition B.2. apply.

#### ***B.15. Reporting Noncompliance***

- a. The Permittee shall give 20 calendar days advanced notice to the Director of any planned changes in the Permitted facility or activities required by Part II of this Permit which may result in noncompliance with the requirements of Part II of this Permit.
- b. The Permittee shall report to the Director any noncompliance with Part II of this Permit which may endanger health or the environment.

Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

- (1) Information concerning release of any hazardous waste and/or hazardous constituent that may cause an endangerment to public drinking water supplies; and
- (2) Any information of a release or discharge of hazardous waste and/or a hazardous constituent, or of a fire or explosion from the hazardous waste management facility, which could threaten the environment or human health outside the facility.

- c. The description of the occurrence and its cause shall include:
- (1) Name, address, and telephone number of the owner or operator;
  - (2) Name, address, and telephone number of the facility;
  - (3) Date, time, and type of incident;
  - (4) Name and quantity of materials involved;
  - (5) The extent of injuries, if any;
  - (6) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
  - (7) Estimated quantity and disposition of recovered material that resulted from the incident.
- d. A written notice shall also be provided within five calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and, if not, the time the Permittee anticipates that noncompliance will continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Director may waive the five-day written notice requirement in favor of a written report within 15 calendar days.

### ***B.16. Other Information***

Whenever the Permittee becomes aware of the failure to submit any facts in the Permit application relevant to this Permit or the submittal of incorrect information in the Permit application, or in any report to the Director, the Permittee shall promptly submit such facts or information.

Notwithstanding the above paragraphs B.15(b)-(d), the Permittee shall comply with all reporting requirements of all applicable federal, state, and local laws and regulations.

### ***B.17. Incorporations to the Permit***

Any plans and schedules required by the conditions of Part II of this Permit are, upon approval of the Director, enforceable under Part II of this Permit. Any noncompliance with such approved plans and schedules shall constitute noncompliance with Part II of this Permit.

## **C. FACILITY-SPECIFIC CONDITIONS**

### ***C.1. Land Disposal Restrictions***

a. The Permittee must comply with all regulations implementing the land disposal restrictions required in 40 CFR Part 268. The Permittee also must comply with regulations implementing the land disposal restrictions that are promulgated after the effective date of Part II of this Permit, as these requirements are self-implementing provisions of HSWA. The Permittee is not subject to the land disposal restrictions if the applicable treatment standard is met, the waste is exempt under 40 CFR § 268.1(c), the waste is subject to a variance, or any other exemption if 40 CFR Part 268 applies.

b. If allowed in the State Permit (Part I), the Permittee may store wastes to which the land disposal restriction applies for up to one year unless EPA can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal as provided in 40 CFR § 268.50(b). For storage of hazardous waste to which the land disposal prohibition applies beyond one year, however, the Permittee shall bear the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal as provided in 40 CFR § 268.50(c).

### ***C.2. Reserved***

Table 1 - Reserved

### ***C.3. Limitations of HSWA Hazardous Waste Management***

Part I of this Permit authorizes the management of hazardous wastes identified in the pertinent part of Part A of the application. However, the MDNR has not adopted into its state regulations some of the hazardous wastes identified in the Part A application. MDNR has adopted into its state regulations some of the hazardous wastes identified in the Part A application but has not yet received authorization to regulate these wastes in lieu of EPA.

Part II of this Permit authorizes the management of those hazardous wastes identified in the pertinent part of the Part A application dated October ~~22, 1998~~, 2008 and revisions dated June 26, 2009, which have not yet been adopted by MDNR or have been adopted but for which MDNR has not yet been authorized to regulate in lieu of the EPA. The Permittee shall only manage those wastes as specified in Part I of this Permit issued by MDNR and in accordance with that permit. The Permittee is prohibited from management of hazardous wastes not identified in the pertinent part of the Part A application as described therein except as allowed elsewhere in Part II of this Permit or as allowed in 40 CFR §§ 262.34, 263.12 and 270.1.

## D. INDUSTRIAL FURNACE CONDITIONS EXISTING KILN

The Permittee is no longer authorized to treat hazardous wastes in the industrial furnace described ~~in the permit application subject to the terms, conditions, limits and requirements of Part II of this Permit and 40 CFR Part 266, Subpart H. The Permittee shall cease the treatment of hazardous waste in and begin closure of the existing kiln no later than six months of the first introduction of hazardous waste into the new kiln for combustion. The Permittee shall complete closure in accordance with the closure plan, Permit Attachment E-3~~ as an existing wet-process rotary cement kiln and ancillary feed equipment with an air pollution control system consisting of a four stage electrostatic precipitator (ESP) and an exhaust stack.

### D.1. Description of Industrial Furnace

~~The industrial furnace consists of an existing wet process rotary cement kiln and ancillary feed equipment with an air pollution control system consisting of a four stage electrostatic precipitator (ESP) and an exhaust stack. Both liquid and solid hazardous waste are burned as supplemental fuels in the kiln through feed systems ancillary to the cement kiln.~~

~~Liquid hazardous wastes are pumped from the hazardous waste storage tank through piping and feed rate monitoring and control equipment and into the burning zone of the kiln through an atomizing nozzle. The liquid waste feed pump(s), all piping from the discharge of those pump(s) and its return to the storage tank(s) and all other equipment used to monitor and control the flow of liquid hazardous waste to the burning zone of the cement kiln are considered ancillary to the cement kiln and subject of Part II of this Permit. Modifications to or replacement of that equipment is subject to the requirements for permit modifications in Part II of this Permit.~~

~~Solid hazardous wastes are fed into the primary fuel (coal) feed system where both are conveyed into the burning zone of the kiln with primary combustion air. The systems used to move hazardous wastes from the feed preparation building or hazardous wastes emptied from the solid hazardous waste transfer containers and the systems to monitor and control the addition of solid hazardous wastes to the primary fuel (coal) feed system are considered ancillary to the cement kiln and subject of Part II of this Permit. Modifications to or replacement of that equipment is subject to the requirements for permit modifications in Part II of this Permit.~~ Reserved

### D.2. Limitations of Hazardous Waste Management

~~The limitations in this Permit Condition on burning hazardous wastes in the industrial furnace no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision, which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is~~

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The Permittee may only burn hazardous waste identified in the approved permit application, in the pertinent part of the Part A application dated October 22, 1998, as specified in Part II of this Permit and only under the terms of Part II of this Permit.~~Reserved

### **D.3. Hazardous Waste Analysis**

~~The limitations in this Permit Condition on hazardous waste analysis no longer apply when the Permittee demonstrates compliance with the MACT requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision, which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The Permittee shall conduct sampling and analysis as described in the approved permit application, in the pertinent part of the waste analysis plan, to determine the physical and chemical composition of the hazardous waste, other fuels, and other feed stocks fed into the industrial furnace in order to document compliance with the requirements in Part II of this Permit.~~Reserved

### **D.4. Compliance with Regulations**

~~This Permit Condition will no longer apply when the operating requirements specified in Part II of this Permit no longer apply due to the Permittee's demonstration of compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~For purposes of permit enforcement, compliance with the operating requirements specified in this Permit shall be regarded as compliance with 40 CFR §§ 266.102, 104–107. However, any evidence that indicates that compliance with these permit conditions is insufficient to ensure compliance with those requirements shall constitute “information” which may justify modification or revocation and re-issuance of this Permit under 40 CFR § 270.41.~~ Reserved

### D.5. Emission Standards

~~The emission limits and performance standards in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The Permittee shall maintain the cement kiln, hazardous waste feed systems, and the associated air pollution control equipment, so that, when operated in accordance with the waste feed limitations and operating requirements specified in Part II of this Permit, they will meet the following emission standards:~~

~~a. The cement kiln shall achieve a destruction and removal efficiency (hereafter referred to as DRE) of 99.99 percent for 1,2,4 trichlorobenzene and Tetrachloroethylene for each hazardous waste feed and are the principal organic hazardous constituents (hereafter referred to as POHCs) designated in Part II of this Permit. The DRE shall be determined using the method specified in 40 CFR § 266.104(a)(1).~~

~~b. The industrial furnace shall not emit particulate matter in excess of 0.08 grains per dry standard cubic foot of stack gas when corrected for seven percent by volume of oxygen in the stack gas, in accordance with the formula specified at 40 CFR § 266.105(a).~~

~~c. Pursuant to 40 CFR § 266.102(e)(4)(ii)(A), the emissions from the industrial furnace shall not be in excess of the following limits in Table 2 demonstrated during the trial burn:~~

Table 2 – Metals Emissions Limits

Metal	Emission Limit (lb/hr)
Lead	0.53
Arsenic	0.0028
Beryllium	0.00011
Cadmium	0.090
Chromium	0.0021

~~d. — The Permittee shall control combined hydrogen chloride (hereafter referred to as HCl) and chlorine emissions from the industrial furnace such that the rate of emissions is no greater than 39 pounds per hour of HCl and 0.15 pounds per hour of chlorine, as required by 40 CFR § 266.102(e)(5)(ii)(A).~~

Reserved

## D.6. Operating Requirements

~~The following operating requirements are established to ensure conformance with the emission standards set forth in Part II of this Permit. The Permittee must operate the kiln in accordance with the operating requirements specified in Part II of this Permit at all times when there is hazardous waste in the industrial furnace. Failure to do so is a violation of Part II of this Permit and may be grounds for enforcement action or termination of Part II of this Permit pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928 or 40 CFR § 270.43, respectively.~~

~~Certain operating requirements will no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. Each Permit Condition where this will occur contains language explicitly stating when they will no longer apply.~~

~~Hazardous wastes shall not be introduced into the industrial furnace unless these operating requirements are being met, all of the instruments required to verify compliance with such conditions are functioning properly, and the parameters measured by the instruments are being recorded as required by Part II of this Permit. The Permittee shall cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feed stocks, or changes in the design or operating conditions of the industrial furnace deviate from the limits specified in Part II of this Permit, as required by 40 CFR § 266.102(e)(7)(iii).~~

### a. — Feed Limitations

~~(1) — The limitations on hazardous wastes in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The Permittee may burn only the hazardous wastes identified in the approved permit application, in the pertinent part of the Part A permit application, in accordance with the following feed limitations.~~

~~(2) — The feed rate limits and monitoring requirements in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~Pursuant to 40 CFR § 266.102(e)(4), chlorine and metal feed rates to the kiln shall not exceed the rates, on a hourly rolling average (HRA) basis, as defined at 40 CFR § 266.102(e)(6)(i)(B), in Table 3 expressed as pounds per hour.~~

Table 3— Maximum Chlorine and Metal Feed Rates

Compound	Emission Limit Basis	Total Feedstreams (lb/hr)	Total Hazardous Waste Feed (lb/hr)	Total Pumpable Hazardous Waste Feed (lb/hr)
Antimony	Tier 1A	37.9	NA	NA
Barium	Tier 1A	6322	NA	NA
Mercury	Tier 1A	37.9	NA	NA
Silver	Tier 1A	379	NA	NA
Thallium	Tier 1A	63.2	NA	NA
Lead	Tier 3	73.3	73.1	71.6
Arsenic	Tier 3	11.3	11.2	11.2
Beryllium	Tier 3	0.76	0.72	0.72
Cadmium	Tier 3	13.5	13.5	13.4
Chromium	Tier 3	70.7	70.3	69.6
Chlorine	Tier 3	976	972	972

~~The Permittee shall monitor the feed rate of metals and chlorine/chloride in each feed stream to ensure that the feed rate limits set forth above are not exceeded. Metals and~~

~~chlorine feed stream concentrations shall be determined by implementing the waste analysis plan in the approved permit application.~~

~~(3) — The feed rate limits and monitoring requirements for mercury in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The annual average total feedstream metal feed rates to the kiln shall not exceed the rates in Table 4, which are expressed in pounds per hour:~~

~~Table 4— Annual Average Total Feedstream Metal Feed Rate Limits~~

<del>Compound</del>	<del>Feed Rate Limit (lbs/hr)</del>
<del>Mercury</del>	<del>10.78</del>
<del>Thallium</del>	<del>31.2</del>

~~(4) — The reporting requirements for mercury in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The Permittee shall document and report the annual average total feedstream metal feed rates for each metal in Permit Condition D.6.a.(3), Table 4. Annual averages shall be determined each calendar year. The first year for which documentation must be maintained is 2000, i.e., January 1, 2000–December 31, 2000. The annual average total feedstream metal feed rate limits shall be determined for each metal as follows:~~

$$\begin{array}{l}
 \textit{Annual Average Total} \\
 \textit{Feedstream Metal Feed} \\
 \textit{Rate}
 \end{array}
 =
 \begin{array}{l}
 \textit{Total Mass of Metal Burned} \\
 \textit{While Burning Hazardous} \\
 \textit{Waste}
 \end{array}
 \div
 \begin{array}{l}
 \textit{Total Hours of} \\
 \textit{Hazardous} \\
 \textit{Waste Burning}
 \end{array}$$

~~The Permittee shall submit a report to document the annual average total feedstream metal feed rates by March 1 of the following year, i.e., the first report for 2000 is due on March 1, 2001. This report shall include a summary that identifies the concentrations of mercury and thallium, dates of the feedstream's analysis for mercury and thallium, and the mass of each feedstream fed into the industrial furnace while burning hazardous waste and the hours of waste burning. As an alternative, the Permittee may submit a paper and electronic copy of a spreadsheet used to determine annual average total feedstream metal feed rates.~~

~~In addition, the Permittee shall maintain, and make available for inspection, the running average of these annual average total feedstream metal feed rates. This running average shall be updated on, at minimum, a ninety (90) calendar day basis. Calculation of the running average shall be completed and available for inspection thirty (30) days after the close of each 90 calendar day period.~~

~~b. Automatic Waste Feed Cut-offs (AWFCO)~~

~~(1) The automatic waste feed cut-offs required in this Permit Condition are no longer required when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~While burning hazardous wastes, the industrial furnace shall be operated with the automatic waste feed cut-off system, as described in the approved permit application, functioning so that hazardous waste feed is automatically cut off when any operating condition specified in Part II of this Permit is not met.~~

~~(2) The minimum combustion chamber temperature in this Permit Condition no longer applies when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~The minimum combustion chamber temperature specified in Part II of this Permit shall be maintained at all times while hazardous waste or hazardous waste residues remain in the combustion chamber, as required by 40 CFR § 266.102(e)(7)(ii)(A).~~

~~(3) —The requirements in this Permit Condition, except that the exhaust gases must continue to exit through a properly operating electrostatic precipitator while hazardous waste or hazardous waste residues remain in the industrial furnace, no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~Exhaust gases must exit through the electrostatic precipitator (ESP) which shall be operated in accordance with the requirements specified in Part II of this Permit while hazardous waste or hazardous waste residues remain in the industrial furnace, as required by 40 CFR § 266.102(e)(7)(ii)(B).~~

~~(4) —The operating requirements and limits in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~Notwithstanding the foregoing, the Permittee shall continue to calculate and record the raw material feed rate and total hazardous waste feed rate to the industrial furnace in tons per hour (dry basis) and pounds per minute, respectively. The raw material feed rate shall be calculated from the “kiln feed flow rate” and “kiln feed density” in tons per hour (dry basis) on an hourly rolling average basis and total hazardous waste feed rate shall be calculated from the “pumpable hazardous waste feed rate” and the “solid hazardous waste feed rate” in pounds per minute on an hourly rolling average basis which shall be monitored as specified in Permit Condition D.7. using the definition of hourly rolling average (HRA) in 40 CFR § 266.102(e)(6)(i)(B).~~

~~Both the hourly rolling averages of the parameters in Table 5 and the one minute averages of the parameters in Table 6 in Part II of this Permit shall continue to be monitored during an automatic waste feed cut off, and the hazardous waste feed shall not be restarted until the industrial furnace is operating under all conditions specified Part II of this Permit and hourly rolling averages for all operating limits are within the established limits.~~

~~i. The raw material feed rate to the industrial furnace shall not exceed 140.85 tons per hour (dry basis) on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B). The raw material feed rate shall be calculated from the “kiln feed flow rate” and “kiln feed density” which shall be monitored as specified in Permit Condition D.7.~~

~~ii. The “pumpable hazardous waste feed rate” monitored as specified in Permit Condition D.7 shall not exceed 461.1 pounds per minute on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B).~~

~~iii. The “total hazardous waste feed rate” shall not exceed 539.2 pounds per minute on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B). The total hazardous waste feed rate shall be calculated from the pumpable hazardous waste feed rate and the solid hazardous waste feed rate monitored as specified in Permit Condition D.7.~~

~~iv. The “combustion temperature”, monitored as specified in Permit Condition D.7, shall be used as an indicator of combustion chamber temperature and shall not be less than 2182°F on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B).~~

~~v. The Permittee shall comply with the requirements of 40 CFR § 266.102(e)(7)(i), to prevent fugitive emissions, by ensuring that no hazardous wastes are introduced into the industrial furnace when the difference of the pressure of the kiln hood to atmospheric pressure is greater than 0.1 inches water column as averaged over a period of 60 continuous seconds, measured as specified in Permit Condition D.7.~~

~~vi. The inlet gas temperature of the electrostatic precipitator (ESP), monitored as specified in Permit Condition D.7, shall not exceed 608.3°F on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B).~~

~~vii. The secondary power supplied to the electrostatic precipitator, monitored as specified in Permit Condition D.7., shall not be less than 102.1 kiloVolt-Amperes (kVA), on an hourly rolling average (HRA) basis, as defined in 40 CFR § 266.102(e)(6)(i)(B).~~

~~viii. The hourly rolling average (HRA) concentration, as defined in 40 CFR § 266.102(e)(6)(i)(B), of carbon monoxide, monitored as specified in Permit Condition D.7, shall not exceed 100 parts per million on a volume basis (ppmv); corrected to seven percent oxygen on a dry basis.~~

~~(5) The operating requirements in this Permit Condition no longer apply when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive~~

~~performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR §§ 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee's compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

~~In the event that the operating conditions set out above in Permit Conditions D.6.b.(4).i.–D.6.b.(4).viii. are not met at any time when hazardous waste is present in the industrial furnace, an automatic waste feed cut-off shall be activated immediately, and the Permittee shall cease burning hazardous waste in the industrial furnace until such time as the operating conditions specified for the industrial furnace are again being met. Table 5 is a listing of the automatic waste feed cut-offs required by Permit Conditions D.6.b.(4).i.–D.6.b.(4).viii., describing the parameters and limits that shall activate the automatic hazardous waste feed cut-off mechanism as described in the approved permit application.~~

~~Table 5—Automatic Waste Feed Cut-off Limits~~

<del>OPERATING PARAMETER</del>	<del>CUT-OFF LIMIT</del>	<del>LOCATION OF MONITORING DEVICE</del>
<del>Maximum Raw Material Feed</del>	<del>140.85 (dry basis) tons per hour (HRA)</del>	<del>Slurry line to kiln</del>
<del>Maximum Pumpable Hazardous Waste Feed</del>	<del>461.1 pounds per minute (HRA)</del>	<del>Liquid hazardous waste feed line on burner floor</del>
<del>Maximum Total Hazardous Waste Feed</del>	<del>539.2 pounds per minute (HRA)</del>	<del>Solid hazardous waste feed conveyor on burner floor</del>
<del>Minimum “Combustion Temperature”</del>	<del>2182°F (HRA)</del>	<del>Optical pyrometer at kiln hood</del>
<del>Maximum Kiln Hood Pressure</del>	<del>-0.1 inch water column gauge (one minute average)</del>	<del>Burner hood</del>
<del>Maximum Main ESP Inlet Temperature</del>	<del>608.3°F (HRA)</del>	<del>ESP inlet</del>
<del>Minimum Secondary ESP Power</del>	<del>102.1 kVA (HRA)</del>	<del>ESP power room</del>
<del>Minimum Carbon Monoxide (CO) Concentration</del>	<del>0 ppmv (one minute average)</del>	<del>Stack</del>

OPERATING PARAMETER	CUT-OFF LIMIT	LOCATION OF MONITORING DEVICE
Maximum CO Concentration	100 ppmv (HRA, 7% O <sub>2</sub> -Dry Basis)	Stack

~~The Permittee shall submit to the Director a quarterly report which describes the number of automatic waste feed cut-offs and their causes within the current reporting period. For the purposes of Part II of this Permit, a reportable automatic waste feed cut-off is one where a condition or limit is exceeded or continues to be exceeded within one minute of the cut-off. Each Quarterly Automatic Waste Feed Cut-Off Report shall be due thirty (30) calendar days after the last day of each calendar quarter, i.e., April 30, July 30, October 30 and January 30. The first quarter for which a report is due is the first quarter in which Part II of this Permit becomes effective. These reports shall be made available for public viewing in an information repository established at the Hannibal Free Public Library, pursuant to 40 CFR § 270.30(m).~~[Reserved](#)

#### D.7. Monitoring, Recording and Inspection

~~The requirements in this Permit Condition no longer apply, except all the requirements and definitions of this Permit Condition shall continue to apply to the monitoring, recording and inspection of “kiln feed flow rate,” “kiln feed density,” “pumpable hazardous waste feed rate,” and “solid hazardous waste feed rate,” regardless of the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, when the Permittee demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR Part 63, Subpart EEE, by conducting a comprehensive performance test and submitting to the Director a copy of the Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d) submitted to the Administrator documenting compliance with those requirements. This provision which limits applicability of this Permit Condition upon the Permittee’s compliance with 40 CFR Part 63, Subpart EEE, is effective upon the date the Notification of Compliance submitted to the Administrator is postmarked.~~

a. ~~The Permittee shall maintain, calibrate, and operate continuous monitors which monitor and record the parameters used to verify compliance with the operating conditions specified in Part II of this Permit. The Permittee shall monitor all the parameters in Table 6 of Part II of this Permit using the instruments specified therein. For each parameter listed, the Permittee shall verify, at least once per quarter, that the calibrated range of the instrument has not drifted outside the specified range. The Permittee shall follow the manufacturers recommendations when conducting calibration checks of the required instrumentation or may conduct such other testing or inspection that will verify the operability of the instruments and the accuracy of the monitored parameters. Notwithstanding the foregoing, the Permittee shall conduct daily calibration checks, quarterly and annual testing of the carbon monoxide and oxygen CEMS in accordance with 40 CFR Part 266, Appendix IX. All one minute averages used to perform calculations shall be recorded in the operating record. The Permittee shall perform such calculations as are~~

~~necessary to the monitored parameters in order to determine compliance with the operating requirements in Permit Condition D.6 of Part II of this Permit and record the results in the operating record.~~

~~b. For purposes of Part II of this Permit, the following terms shall have the meanings stated herein.~~

~~A continuous monitor shall be defined as one which continuously samples the regulated parameter without interruption, evaluates the detector response at least once every 15 seconds, computes and records a one minute average value for the parameter, and, where required by Part II of this Permit, uses the one minute average values to calculate an hourly rolling average for the parameter. For carbon monoxide, the one minute average value parameter shall be corrected to 7% oxygen on a dry basis using the formulas listed below.~~

$$\text{CO}_{\text{corr}} = \text{CO}_{\text{actual}} \times 14 \text{ divided by } 21 - \text{O}_2$$

~~Where  $\text{O}_{\text{corr}}$  = Carbon monoxide concentration corrected to 7% oxygen,~~

~~$\text{CO}_{\text{actual}}$  = One minute average Carbon monoxide value from a minimum of four detector responses, and~~

~~$\text{O}_2$  = Actual one minute average Oxygen value from a minimum of four detector responses.~~

~~A one minute average value shall be defined as the arithmetic mean of a minimum of four valid detector response values obtained within a 60 second period, and corrected where required by using the formulas listed above.~~

~~An hourly rolling average shall be defined as the arithmetic mean of the 60 most recent one minute average values recorded by the continuous monitoring system.~~

~~Instantaneous AWFCO limits shall trigger a fuel cut off when the one minute average for the specified parameter exceeds the limit listed in Table 5 of Part II of this Permit.~~

~~Except during instrument calibration periods as specified below, the Permittee shall continuously record all one minute averages monitored by the instruments described in Table 6 of Part II of this Permit. For the purposes of Part II of this Permit, "continuously record" shall mean that at least 95% of the one minute averages of each parameter required to be monitored and recorded by Part II of this Permit, i.e., those in Table 6, in any 60 minute period, excluding calibration periods, during which hazardous waste is introduced into the industrial furnace, are accurately recorded in the Permittee's operating record. In the event that more than 5% of the values of any one of the monitoring parameters are not accurately recorded in the operating record, or are recorded as missing or invalid data in the operating record, the Permittee shall immediately initiate an automatic waste feed cut off, and shall cease burning hazardous waste in the industrial furnace. All hourly rolling averages calculated and one minute averages used as instantaneous~~

~~limits used to demonstrate compliance with the operating conditions set out in Part II of this Permit shall be in units corresponding to those limits.~~

~~e. Hazardous waste may continue to be introduced into the industrial furnace during daily continuous emission monitor system (CEMS) calibration check periods as described the approved permit application, provided the calibration check period is no longer than 20 minutes. The CEMS shall be maintained according to the following schedule: (1) at least daily, a calibration check of the instrument; (2) at least daily, a system audit; (3) at least quarterly, a calibration error test; and, (4) at least annually, a performance specification test.~~

~~For purposes of compliance with Part II of this Permit, quarterly shall refer to calendar quarters. In addition, successive quarterly calibration error tests must be at least thirty (30) days apart.~~

~~For purposes of compliance with Part II of this Permit, annual performance specification testing must occur within  $\pm$  ninety (90) days of the anniversary of the previous year's test. However, for subsequent performance specification tests, the anniversary date shall be the date of the original performance specification testing.~~

~~d. Proper operation of the automatic waste feed cut off mechanisms shall be verified at least once every seven (7) days by simulating an exceedance of the operating limit for each operating parameter listed in Table 5 of Part II of this Permit as described in the approved permit application. The results of verification of proper operation of the automatic waste feed cut off mechanisms shall be recorded and placed in the operating log. In the case of any malfunction of the automatic waste feed cut off system, the Permittee shall immediately cease feeding hazardous waste to the industrial furnace and shall not restart hazardous waste feed until the malfunction of the automatic waste feed cut off system is located and corrected.~~

~~e. Carbon monoxide and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in 40 CFR Part 266, Appendix IX, Section 2.1. The Permittee shall initiate an automatic waste feed cut off any time the one minute average concentration of carbon monoxide is below the value of zero (0) parts per million by volume.~~

~~In the event of replacement or reconfiguration of the following components of the carbon monoxide or oxygen CEMS, the Permittee shall complete "Performance Specification Test Procedures" on the CEMS in question within forty five (45) days of such replacement or reconfiguration:~~

~~(1) Gas Collection System; and~~

~~(2) Carbon monoxide infrared photometer analyzer or oxygen paramagnetic sensor.~~

~~f. For purposes of Part II of this Permit, "like for like" replacement of a CEMS component shall mean that the component has been replaced with a component of the same~~

~~make/model/version, a component of identical or superior performance specifications or another component recommended by the manufacturer. Like for like replacements will not require permit modification so long as adequate records of such replacements are maintained to demonstrate the like for like nature of the component.~~

~~For the purposes of Part II of this Permit, "reconfiguration" of the CEM system is a substantive change in the structure or design of the system.~~

~~g. For CEM system hardware/software utilized for collection, reduction and recording of compliance data, any replacement or reconfiguration shall require a daily calibration check, system audit and data audit to verify the new or reconfigured components are operating properly. None of these actions shall require a permit modification.~~

~~h. For CEM system gas collection system (including the conditioning system), any replacement or reconfiguration shall require a daily calibration check, system audit and data audit to verify that the new or reconfigured components are operating properly. In addition, any reconfiguration or replacement that is not like for like shall require a performance specification test required in 40 CFR § 266, Appendix IX be completed within forty five (45) days to demonstrate total system integrity. The Permittee may request by Class 1 permit modification requiring approval of the Director (in accordance with 40 CFR § 270.42(a)) an alternative performance specification testing.~~

~~All reconfiguration or replacement that is not like for like shall require a class 1 permit modification in accordance with 40 CFR § 270.42(a) within 7 days of implementing the change.~~

~~i. For the CEM analyzer/detector/sensor, any replacement or reconfiguration shall require a daily calibration check, system audit and data audit to verify that the new or reconfigured components are operating properly. In addition, any reconfiguration or replacement that is not like for like shall require a performance specification test required in 40 CFR § 266, Appendix IX be completed within forty five (45) days to demonstrate total system integrity. The Permittee may request by Class 1 permit modification requiring approval of the Director (in accordance with 40 CFR § 270.42(a)) an alternative performance specification testing.~~

~~All reconfiguration or replacement that is not like for like shall require a class 1 permit modification in accordance with 40 CFR § 270.42(a) within 7 days of implementing the change.~~

Table 6—Process Monitoring Instrumentation

Parameter	Instrument	Type	Range	Accuracy
Kiln Feed Flow Rate (feet per second)	Flow meter	magnetic	0-31	± 2% of range
Kiln Feed Density (specific gravity)	Density meter	nuclear	1-1.8	± 0.5% of range
Pumpable Hazardous Waste Feed (pounds per minute)	Flow meter	mass	0-500	± 0.4% of range
Solid Hazardous waste Feed (pounds per minute)	Weight belt	load cell	0-400	± 0.5% of range
Combustion Temperature (°F)	Optical Pyrometer	infrared	2000-2900	± 1% of value
Kiln Hood Pressure (inches water column)	Differential Pressure Tap on Hood with one side open to atmosphere	differential pressure transmitter	0-10	± 0.1% of range
ESP Inlet Temperature (°F)	Thermocouple	Type-K	32-2300	± 4°F
ESP Secondary [DC] Power (kilovolt-amperes)	Automatic High Voltage Control Management System	micro-processor controller	0-75	± 5% of range
Carbon Monoxide (parts per million by volume)	Extractive Carbon Monoxide analyzer	Non-dispersive Infrared (NDIR)	0-200 0-3000	<0.5% each range

Parameter	Instrument	Type	Range	Accuracy
Oxygen (percent by volume)	Extractive Oxygen Analyzer	One System with a Zirconium Oxide Sensor	0-25	<0.5% of range
		One System with a Paramagnetic Sensor		

~~j. The industrial furnace and associated equipment (pumps, valves, pipes, etc.) shall be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering, as specified in the inspection schedule.~~

~~k. Pursuant to 40 CFR § 266.102(e)(8)(i)(C), the Permittee shall upon request of the Director, conduct sampling and analysis of the hazardous waste (and other fuels and industrial furnace feedstocks as appropriate), residues, and exhaust emissions to verify that the operating requirements established in Part II of this Permit achieve the applicable standards of 40 CFR §§ 266.104, 266.105, 266.106 and 266.107.~~

[Reserved](#)

**D.8. Direct Transfer of Hazardous Waste**

~~The Permittee shall comply with the standards of 40 CFR § 266.111 when transferring hazardous waste directly from a transport vehicle to the industrial furnace without use of a storage unit.~~ [Reserved](#)

**D.9. Regulation of Residues**

~~a. The Permittee shall sample and analyze cement kiln dust as described in waste analysis plan.~~

~~b. Records sufficient to document compliance with the provisions of Section D.9 of Part II of this Permit shall be retained until closure of the industrial furnace as a hazardous waste burner. At a minimum, the following shall be recorded:~~

- ~~(1) The date and time of sampling;~~
- ~~(2) The individual(s) who performed the sampling;~~
- ~~(3) The date(s) analyses were performed;~~
- ~~(4) The individual(s) who performed the sampling; and~~

~~(5) Results of sample analyses.~~

Reserved

### **D.10. Record Keeping**

The Permittee shall record and maintain in the operating record of the facility all information and data required by or used to demonstrate compliance with 40 CFR §§ 266.102, 104-107, 111 and 112 until closure of the facility.

### **D.11. Closure**

~~The Permittee shall complete closure of the industrial furnace and its associated systems including its ancillary equipment and air pollution control devices as described in the permit application, in the pertinent part of the closure plan, and remove all hazardous waste and hazardous waste residues from the industrial furnace and associated systems. If any portion of the industrial furnace or its associated systems are removed from service prior to final closure of the facility, the Permittee shall implement the partial closure procedures described in the permit application, in the pertinent part of the closure plan.~~ Reserved

### **D.12. Cost Estimate for Closure of the Industrial Furnace**

~~The Permittee shall maintain an estimate of the cost to complete closure of the industrial furnace and its associated systems as required by 40 CFR § 264.142. The Permittee shall adjust annually, as required by 40 CFR § 264.142(b), or within 30 days, as required by 40 CFR § 264.142(c), if a modification to the closure plan affecting the cost estimate is approved by the Director, for closure of the industrial furnace and its associated equipment.~~ Reserved

### **D.13. Financial Assurance and Liability Requirements**

#### ~~a. Facility Closure~~

~~The Permittee shall demonstrate continuous compliance with 40 CFR § 264.143 by providing documentation of financial assurance, as required by 40 CFR § 264.151 in at least the amount of the estimated cost to close the industrial furnace and its associated systems. Changes in financial assurance mechanisms must be approved by the Director pursuant to 40 CFR § 264.143.~~

#### ~~b. Liability Requirements~~

~~The Permittee shall demonstrate continuous compliance with the requirement of 40 CFR § 264.147(a) to have and maintain liability coverage for sudden and accidental occurrences in the amount of at least \$1 million per occurrence, with an annual aggregate of at least \$2 million, exclusive of legal defense cost.~~ Reserved

## **E. INDUSTRIAL FURNACE CONDITIONS NEW KILN**

The Permittee is authorized to treat hazardous wastes in the industrial furnace described in the permit application for the new kiln subject to the terms, conditions, limits and requirements of Part II of this Permit and 40 CFR § 266, Subpart H.

### ***E.1. Description of Industrial Furnace***

The industrial furnace consists of a new pre-heater/pre-calciner rotary cement kiln and ancillary hazardous waste feed equipment with an air pollution control system consisting of a membrane filter baghouse for the raw mill and a membrane filter baghouse for the alkali by-pass system. Both liquid and solid hazardous waste are burned as supplemental fuels in the cement kiln through feed systems ancillary to the rotary cement kiln and the pre-calciner.

Liquid hazardous wastes are pumped from the hazardous waste storage tank through piping and feed rate monitoring and control equipment and into the burning zone of the kiln and/or into the burning zone of the pre-calciner through an atomizing nozzle. Solid hazardous wastes are fed into the primary fuel (coal) feed system where both are conveyed into the burning zone of the kiln and/or into the burning zone of the pre-calciner with primary combustion air.

### ***E.2. Limitations of Hazardous Waste Management***

The Permittee may only burn hazardous waste identified in the approved permit application, in the pertinent part of the Part A application dated October ~~22, 1998~~9, 2008 and revisions dated June 26, 2009, as specified in Part II of this Permit and only under the terms of Part II of this Permit.

### ***E.3. Hazardous Waste Analysis***

Reserved

### ***E.4. Emission Standards***

Reserved

### ***E.5. Compliance with Regulations***

Reserved

### ***E.6. Operating Requirements***

Reserved

### **E.7. Monitoring, Recording and Inspection**

The industrial furnace and associated equipment (pumps, valves, pipes, etc.) shall be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering, as specified ~~in the Inspection Schedule~~, [Permit Attachment E-1, Inspection Schedule](#).

### **E.8. Direct Transfer of Hazardous Waste**

The Permittee shall comply with the standards of 40 CFR § 266.111 when transferring hazardous waste directly from a transport vehicle to the industrial furnace without use of a storage unit.

### **E.9. Regulation of Residues**

a. The Permittee shall sample and analyze cement kiln dust as described in ~~the Waste Analysis Plan~~, [Permit Attachment E-2, Waste Analysis Plan](#).

b. Records sufficient to document compliance with the provisions of Section E.9 of Part II of this Permit shall be retained until closure of the industrial furnace as a hazardous waste burner. At a minimum, the following shall be recorded:

- (1) The date and time of sampling;
- (2) The individual(s) who performed the sampling;
- (3) The date(s) analyses were performed;
- (4) The individual(s) who performed the sampling; and
- (5) Results of sample analyses.

### **E.10. Record Keeping**

The Permittee shall record and maintain in the operating record of the facility all information and data required by or used to demonstrate compliance with 40 CFR §§ 266.111 and 112 until closure of the facility.

### **E.11. Closure**

The Permittee shall complete closure of the industrial furnace and its associated systems including its ancillary equipment and air pollution control devices as described in the permit application, in the pertinent part of the closure plan, and remove all hazardous waste and hazardous waste residues from the industrial furnace and associated systems. If any portion of

the industrial furnace or its associated systems are removed from service prior to final closure of the facility, the Permittee shall implement the partial closure procedures described in the permit application, in the pertinent part of the ~~e~~Closure ~~p~~Plan, Permit Attachment E-3, Closure Plan.

### ***E.12. Cost Estimate for Closure of the Industrial Furnace***

The Permittee shall maintain an estimate of the cost to complete closure of the industrial furnace and its associated systems as required by 40 CFR § 264.142. The Permittee shall adjust annually, as required by 40 § CFR 264.142(b), or within 30 days, as required by 40 CFR § 264.142(c), if a modification to the closure plan affecting the cost estimate is approved by the Director, the Closure Cost Estimate, Part II Attachment E-4, Closure Cost Estimate, for closure of the industrial furnace and its associated equipment.

### ***E.13. Financial Assurance and Liability Requirements***

#### **a. Facility Closure**

The Permittee shall demonstrate continuous compliance with 40 CFR § 264.143 by providing documentation to the Director of financial assurance, as required by 40 CFR § 264.151 in at least the amount of the estimated cost to close the industrial furnace and its associated systems. Changes in financial assurance mechanisms must be approved by the Director pursuant to 40 CFR § 264.143.

#### **b. Liability Requirements**

The Permittee shall demonstrate continuous compliance with the requirement of 40 CFR § 264.147(a) to have and maintain liability coverage for sudden and accidental occurrences in the amount of at least \$1 million per occurrence, with an annual aggregate of at least \$2 million, exclusive of legal defense cost.

## **F. FACILITY SUBMISSION SUMMARY**

The following is a summary of possible reporting requirements pursuant to Part II of this Permit.

Table 7 - Summary of possible reporting requirements pursuant to Part II of this Permit

CONDITIONAL REQUIREMENTS	DUE DATE	PERMIT CONDITION
Permit Renewal	180 calendar days prior to Part II Permit expiration	B.3.b
Provisions for Part II Permit Transfer	90 calendar days prior to date of Part II Permit transfer	B.4
Report Planned Changes	20 calendar days prior to making any physical alterations to any portion of the facility subject to Part II of this Permit, except when notice is required by the State Part I Permit	B.14
Report Noncompliance	20 calendar days prior to making any changes which will result in noncompliance with Part II of this Permit	B.15.a.
Oral Notice of Noncompliance	Within 24 hours of Permittee's awareness of the circumstance	B.15.b.
Written Notice of Noncompliance	Within 5 calendar days of Permittee's awareness of the circumstance	B.15.d.

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~Part II Attachment E-1~~  
~~Inspection Schedule~~

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~RESERVED~~

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~Part II Attachment E-2~~  
~~Waste Analysis Plan~~

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~RESERVED~~

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
Class 3 Modification

~~Part II Attachment E-3~~  
~~Closure Plan~~

# CLOSURE PLAN

*for*

*Continental Cement Company, LLC*

*Hannibal, Missouri*

*Revision March 16, 2007*

## **SECTION 7: CLOSURE PLAN**

This Plan is developed to meet the U.S. EPA closure requirements of 40 CFR 270.14(b)(13) and 264 Subpart G, and the Missouri Department of Natural Resources (MDNR) requirements in 10 CSR 25-7.264(2)(G).

The purpose of the Closure Plan is to establish the necessary guidelines required for the safe and complete closure of any individual hazardous waste unit at the facility at any point during its intended operating life, and to completely close the facility at the end of its intended operating life.

Each hazardous waste unit or the entire facility will be closed in a manner that effectively minimizes the need for further maintenance and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or waste decomposition products to the ground, surface waters or to the atmosphere.

### **7.0 FACILITY CLOSURE NOTIFICATIONS**

The owner or operator will provide the following notifications or requests:

- The owner or operator will notify the MDNR Director of its intent to close the facility at least 45 days prior to initiating any closure operations.
- Within 90 days after receiving the final volume of hazardous wastes, or within 90 days after approval of the Closure Plan, whichever is later, the owner or operator will treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved Closure Plan.
- The owner or operator will complete final closure within 180 days after receiving the final volume of hazardous wastes, or within 180 days after receiving closure approval, whichever is later.
- Changes in the Closure Plan will be provided to the MDNR Director within 60 days prior to any planned closure date. Notification to the MDNR Director will be made within 60 days if approved closure plan is affected by any unexpected event. If any unexpected event occurs during the closure activities, notification to the MDNR will be made within 30 days from the occurrence of the unexpected event.
- Within 60 days after completing final closure of the facility the MDNR Director will receive a certification of closure, prepared and certified by an outside independent,

Missouri registered professional engineer and the facility owner or operator by registered mail.

**7.1 AMENDMENTS TO THE CLOSURE PLAN**

Continental Cement will submit an amended closure plan to the MDNR whenever:

- Facility design or operations are changed which would affect the closure plan;
- The expected closure year changes; or
- Unexpected events occur during closure activities, which require a closure modification.

Written notification of the amended closure plan will be submitted at least sixty (60) days prior to a proposed change in facility design or operation, or within sixty (60) days after an unexpected event that affects closure. If the event occurs during closure activities, written notification will be submitted within thirty (30) days of the event.

MDNR may request modifications to the closure plan under the conditions described in 40 CFR 264.112(c)(2). Continental Cement will submit the revised closure plan within sixty (60) days of the MDNR request, or within thirty (30) days if the change occurs during closure activities.

**7.2 HAZARDOUS WASTE FACILITIES**

**7.2.1 Maximum Inventory [40 CFR 264.112(b)(3)]**

The final closure of the facility is not expected within the next 30 years. During the active life of the facility, the maximum inventory of hazardous wastes expected is as follows:

	<b>Units</b>	<b>Capacity</b>
a.	Six 25,000-gallon liquid fuel blend tanks (Tanks 1-6), Three 75,000-gallon burn tanks (Tanks 8-9 & 13) and One 5000-gallon storage tank. (Tank 7)	380,000 gallons
b.	Containment Building (Feed Prep #1)	1,000 CY
c.	Containment Building (Feed Prep #2)	545 CY=110,000 Gallons

d.	Container Storage Area #1	36,000 Gallons
e.	Container Storage Area #2	72,000 Gallons
f.	Container Storage Area #3 (Railcar Facility)	360,000 Gallons
g.	Container Storage Area #4	262,500 Gallons

These units are shown on Drawing SL-202. In addition to the above storage units, the following treatment processes are included in the Part A for the facility:

	<b>Units</b>	<b>Capacity</b>
a.	One cement kiln w/ Pre-calciner	16.32 TPH
b.	Grinding, shredding, and milling systems in two enclosed feed prep buildings	1200 TPD (each area)
c.	One mechanical solid feed system in an enclosure to the pre-calciner	10 TPH
d.	One mill blending system in an enclosed building	75 TPH
e.	Blending in Tanks	450,000 GPD
f.	Truck/Rail Cleanout	240,000 GPD
g.	Two Drum Decanting Units	1200 TPD

**7.2.2 Closure Procedures [40 CFR 264.111-112(b)(1)(4)]**

Liquid Fuel Storage Tanks

At the time of closure, all hazardous waste fuel in the ten liquid fuel storage tanks (i.e., six @ 25,000 gallons, two burn tanks @ 75,000 gallons, one liquid fuel storage tank @ 75,000 gallons and the 5,000 gallon tank) will be utilized in the on-site cement kiln as fuel. In case the cement kiln

is not operational at the time of this closure, the fuel stored in the tanks will be transferred into bulk transportation units for off-site shipment to an approved facility. No sludges are expected to be in the tanks at the bottom after the removal of the waste fuels since each tank is equipped with a mixer. However, if sludges do remain after the waste is removed, the sludges will be removed and placed in containers for use in the on-site cement kiln or for disposal off-site in an approved facility.

After the liquid fuel and/or sludge is removed, each tank will be steam cleaned on the inside. In addition, the containment system and the piping (including the transfer pipe to the kiln), valves and pump systems will be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. Sampling of rinsate from inside surfaces of each tank and the transfer piping will be undertaken after the cleaning is completed. After steam cleaning, one rinsate sample will be collected from each separate concrete containment area for laboratory analyses. Individual concrete samples will be collected from the tank containment units. A total of four samples will be collected from areas that are stained or cracked. If the concrete samples fail to meet clean closure standards, soil samples will be taken below the containment unit. Individual soil samples will be collected from the locations under the containment area that initially fail clean closure. The samples will be collected and analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

#### Containment Building (Feed Prep #1)

At the time of closure of this unit, the solids will be processed through the on-site facility or shipped off-site in bulk transport vehicles to an approved facility. The solids storage area will then be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. Since waste was in contact with the concrete floor, four discrete samples of the concrete floor will be collected for laboratory analyses. A PVC liner, at a depth of approximately 3', underlies the Feed Prep #1 building. This PVC liner is setting on shale. If liquid is present, a sample will be taken of any liquid trapped in this liner. The sand above the liner will also be sampled for laboratory analyses. Individual sand samples will be taken from at least four locations under the Feed Prep #1 building containment floor. If the sand fails to meet clean closure standards, the soil below the PVC liner will be sampled at four locations. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document. In the event that the sand (or

any trapped liquid) does not meet clean closure, the floor will be excavated and the sand (and liquid) removed for disposal at a licensed facility.

Containment Building (Feed Prep #2)

At the time of closure of this unit, the solids will be processed through the on-site facility or shipped off-site in bulk transport vehicles to an approved facility. The solids storage area will then be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. After steam cleaning, four discrete samples from the concrete floor will be collected for laboratory analyses. A PVC liner at a depth of approximately 3' underlies the Feed Prep #2 building. This PVC liner is setting on shale. If the concrete samples fail to meet clean closure standards, the sand above the liner will also be sampled for laboratory analyses. Individual samples will be taken from at least four locations under the Feed Prep #2 building floor. If the sand fails to meet clean closure, the soil below the PVC liner will be sampled at four locations. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document. In the event that the sand does not meet clean closure, the floor will be excavated and the sand removed for disposal at a licensed facility.

Drum Decanting Systems

At the time of closure of these two units, any remaining solids in the decanting systems will be processed on-site, shipped off-site to an approved facility or returned to storage. The closed system of each unit includes an auger, liquid receiver tank, pump, in-line grinder and associated piping. The decanting systems will be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. After cleaning, rinsate samples will be collected and analyzed according to the outline in Section 7.2.3 of this section.

Container Storage Area #1

At the time of closure of this unit, the remaining containers in this storage area will be processed through the on-site facility or shipped off-site in bulk transport vehicles to an approved facility. After removal of the containers, the area will be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. After steam cleaning, a rinsate sample from the concrete floor will be collected for laboratory analyses. Concrete samples will be collected from at least two locations in the CSA #1 area and two locations in the Ball Mill room. If the

concrete samples fail to meet clean closure, the soil below the concrete will be sampled in the affected area. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Container Storage Area #2

This unit is schedule for partial closure as soon as Container Storage Area #4 is constructed. At the time of closure of this unit, all containers will be moved to the new Container Storage Area #4. The solids storage area will then be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. Closure and sampling of Container Storage Area #2 is further described in Section 7.3 (Partial Closure).

Container Storage Area #3 (Railcar Facility)

At the time of closure, the contents of all containers including roll-offs and railcars in this storage area will be processed as fuel on-site at the facility or will be shipped off-site to an approved facility. The containment area will then be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. After steam cleaning, a rinsate sample will be taken from the concrete containment at both the container storage area and the railcar unloading area for laboratory analyses. Individual soil samples will be collected from at least four locations under the concrete containment area. The samples will be analyzed according to the sampling plan outlined in Section 7.2.3 of this document.

Container Storage Area #4

At the time of closure, the materials in the storage area will be processed as fuel on-site or will be shipped off-site to an approved facility. The storage area will then be steam cleaned. The rinsate will be shipped to an approved facility or used on-site as fuel. After steam cleaning, a rinsate sample from the concrete floor will be collected for laboratory analysis. Individual concrete samples will be collected from at least four locations in the concrete containment area. If these samples fail to meet clean closure, soil samples will be taken below the concrete floor in the affected areas. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Cement Kiln

After shutting off the final amount of hazardous waste fuel to the rotary cement kiln, the cement kiln will be operated using coal as a fuel and will be allowed to bake-out at temperatures in excess of 2000 degrees F to decontaminate the inside surfaces. After cool down, both coating samples and brick samples will be collected at three locations: (1) 50 feet from the hot end; (2) at mid kiln; and (3) 50 feet from the kiln entrance. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Pre-Heater/Pre-Calciner

Following final shutoff of the solid hazardous waste feed system, coal will be utilized as a fuel in the calciner to reach bake-out temperatures of 1800°F for a minimum of 2 hours. Sampling of the calciner refractory will be conducted after cool down. Two refractory samples will be taken – one within 50 feet of the bottom of the calciner and the other within 50 feet of the top of the calciner. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Mechanical Treatment and Solid Feed Systems

At the time of closure, any remaining quantity of solids in the treatment equipment and feed systems will be utilized as fuel in the on-site cement kiln. If on-site use is not feasible, residues will be shipped off-site to an approved facility. The treatment equipment and feed systems include the grinding, shredding, milling and conveying systems. All machinery (screens, grinder, shredder, etc.) and transfer equipment (belt conveyor, feed barn bucket elevators, and feeders etc.) will be visually inspected for accumulated solid waste material. Any accumulated material will be scraped into containers for use on-site or disposal off-site. All equipment will then be steam cleaned. Equipment to be salvaged will be rinsed and a sample taken of the rinsate. Equipment to be recycled, as scrap metal, will not be sampled. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Ball Mill Blending System

At the time of closure, any remaining waste in the ball mill will be processed or returned to storage. The rinsate will be shipped to an approved facility or used on-site as fuel. Then, the ball mill and the enclosed room, as well as transfer piping to and from the liquid storage tanks, will be steam cleaned. The rinsate will be shipped off-site to an approved facility. Rinsate from the concrete containment area as well as from any equipment to be salvaged will be sampled. Equipment to be recycled as scrap metal will not be sampled. The samples will be analyzed according to the sampling and analysis plan outline in Section 7.2.3 of this document

Air Pollution Control System

After the bake-out period in the rotary kiln and pre-heater/pre-calciner, the air pollution control system (APCS) will be sampled. A CKD sample will be collected from the main baghouse discharge hopper and from the bypass baghouse discharge hopper. Each CKD sample will be analyzed. Filter bags will be removed and CKD samples meeting specifications for the Beville Amendment will represent clean status for all bags and may be disposed of in appropriately. If the filter bags do not meet the Beville Amendment requirements, they will be disposed of as hazardous waste.

Airlock/Decon Building

At the time of closure of this unit, any residues will be processed or moved to storage. The unit will then be steam cleaned and the rinsate will be shipped to an approved facility. After steam cleaning, a rinsate sample from the concrete floor will be collected for laboratory analyses. Individual soil samples will be collected from at least two locations under the floor of the airlock/decon the building. The samples will be taken at the sub-base soil interface and at 12" below the interface. The samples will be analyzed according to the sampling and analysis plan outlined in Section 7.2.3 of this document.

Alternate Method of Cleaning

Alternates to steam cleaning could be sandblasting, high pressure washing, or other suitable methods.

### **7.2.3 Sampling & Analysis Plan [40 CFR 264.112(b)(4)]**

This section is a sampling and analysis plan for the various samples that will be collected and analyzed during closure. The sampling is expected to be performed in Level D protection, except in the case where confined space entry is necessary, in which case Level C will be employed. Tank cleaning and sampling will be conducted in accordance with the facility Health & Safety Procedures for Confined Space Entry. However, the personnel protection level will be upgraded if actual project conditions require it.

Each sample container will be labeled identifying the sample location, collector, date of collection and time of collection. The samples will be forwarded to an independent laboratory whose quality assurance/quality control (QA/QC) procedures will be in accordance with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, EPA. A chain-of-custody form will accompany the samples to the laboratory.

#### Rinsate Sampling

The rinsate sampling procedure will utilize pre-cleaned containers. The rinsate will be collected at the sump or low spot in the concrete area. The rinsate will be placed directly into the container.

#### Concrete Sampling

During closure, concrete sampling will be conducted in each Feed Prep building area and designated containment areas. Sample locations will be selected on a random basis using a grid system. A minimum of four samples will be obtained per hazardous waste management unit. Preference will be given to areas with cracks or stains when selecting sampling locations within each grid unit.

The concrete samples will be collected by using a concrete cutter approximately 2 inches in diameter. The core concrete sample will be collected to a depth of 1.5 inches. The cutter will be decontaminated with soap and water solution before using it at each different sampling location. Discrete concrete samples will be collected without compositing and submitted for analysis.

#### Soil Sampling

During closure, soil sampling will be conducted below the containment unit of the hazardous waste management units if concrete samples fail to meet clean closure levels. Sample locations will be selected on a random basis using a grid system. Four samples will be obtained per hazardous waste management unit or building complex.

The soil samples will be collected using hand-driven or powered augers or other sampling devices. Sampling intervals will include the soil/subbase interface and at 12 inches below that interface. The sampler will be decontaminated with soap and water solution before using it at each different sampling location. Discrete soil samples will be collected without compositing and submitted for analysis. The sample taken at 12" below the sub-base will only be tested if the upper sample fails the clean closure criteria. Additional 12" interval samples will be taken if needed to define the extent of contamination.

As described in Section 7.2.4, a detailed, site-specific sampling plan will be submitted for determining the horizontal and vertical extent of soil contamination at any hazardous waste management unit that does not meet clean closure levels.

#### Analytical Parameters and Methods

The sample types and analytical parameters are summarized in Table 7-2. The analytical methods are summarized in Table 7-3. The analytical parameter list for specific analyses may be modified to correspond with the expected constituents of concern. Soils and solid wastes will be analyzed for TCLP metals if they are potentially hazardous and, if hazardous, will be hauled for off-site disposal or disposed of in the kiln system. The analytical methods will be in accordance with the methods specified in SW-846.

#### **7.2.4 Closure Criteria**

All hazardous waste generated during closure, such as rinsate water, will be shipped to an approved facility or used on-site as fuel. Concrete containment areas that cannot meet the closure criteria will be removed and disposed at a licensed facility. If any portion of the facility is closed with waste left in place, CCC will be required to close the area as a landfill. It is CCC's intention to clean close the facility.

The decontamination procedures for closure of the structures and equipment will be deemed adequate if: (1) the analyses of the rinsate samples indicate no detection above background or the practical quantitation limits for the analytical parameters; (2) the analyses of concrete samples indicate no detection above background or the practical quantitation limits (PQLs) for the organic parameters; and (3) the analyses of concrete samples indicate no increase in metal concentrations when compared to uncontaminated concrete. Blank samples will be used as background for organics. Otherwise, further decontamination of the facility may be required. Concrete must be removed if it exceeds the closure criteria.

Clean closure of the kiln and APCS will be confirmed if the analysis of samples indicate analyses of samples indicate that the TCLP concentration of metals is less than the regulatory level for characteristic hazardous waste.

Clean closure of the soils at the hazardous waste management units will be confirmed if the analyses of soil samples indicate: (1) no detection of organics above the average background soil sample concentrations; (2) no increase in metal constituent concentrations when compared to background soil concentrations; and (3) the analyses of soil samples by the TCLP indicates that metal concentrations are less than the regulatory limits for a characteristic hazardous waste. TCLP analyses of soils samples and other potentially hazardous solid wastes will be completed only if the clean closure criteria are not met and the material will be shipped to an approved facility or used on-site as fuel-fuel.

For establishing clean closure, the analytical results for each discrete soil or concrete sample that is analyzed during closure will be compared with the upper limit of the background data ( $\mu + 2\sigma$ ) for each metal. Re-sampling at a hazardous waste management unit will be allowed if: (1) metal concentrations in only one sample exceed the upper limits of the background concentrations, or (2) the concentration of only one metal exceeds the upper limit of the background concentration in multiple samples.

#### Background Metal Concentrations in Concrete and Soil

Background metal concentrations in soil will be established by analyzing soil samples for the metals listed in Table 7-3. Samples will be collected from areas that were never exposed to hazardous waste operations. The samples will be collected at least 50 feet from any affected area and 50 feet from each other. A minimum of six discrete samples will be analyzed to obtain

statistically significant background concentrations. Background metal concentrations in the vicinity of Container Storage Area #2 will be established by analyzing soil samples from a separate area on-site where clinker has been placed on the soil, for the metals listed in Table 7.3. For years, clinker has been stored adjacent to Container Storage Area #2. Soil samples will be impacted significantly by the clinker storage.

Background metal concentrations in concrete will be established by analyzing uncontaminated concrete samples for the metals listed in Table 7-3. Samples will be collected from areas that were never exposed to hazardous waste operations. A minimum of six discrete samples will be analyzed to obtain statistically significant background concentrations.

The distribution of the background data will be characterized as either normal or lognormal. The upper limit of what constitutes background will be the mean background concentration ( $\mu$ ) plus two standard deviations ( $2\sigma$ ). For lognormally distributed data, the mean and standard deviation will be calculated for the log-transformed data.

#### Additional Soil Sampling and Closure Requirements

A detailed, site-specific sampling plan will be submitted for determining the horizontal and vertical extent of soil contamination at any hazardous waste management unit that does not meet clean closure levels. This will allow a specific plan to be approved or modified at a later date if it is needed. It is CCC's intention to clean close the site. In the event that constituents are above background and below health-based limits at a particular unit, CCC will determine if it is feasible to clean close the unit or if CCC will conduct a risk-based closure in accordance with the regulations. If a risk-based closure is necessary, CCC will submit a site-specific closure plan that describes the derivation of risk-based closure criteria.

Risk-based closure will consider the various exposure scenarios and establish closure requirements that are based on discrete sample constituent concentrations in soil. The closure criteria would be based on background soil concentrations or would be derived using accepted risk assessment methods. If the closure requirements are based on background soil concentrations, any given sample could exceed the  $\mu + 2\sigma$  background limit, but the discrete sample concentrations in remaining soil would not be allowed to exceed the mean background soil concentrations. An ANOVA or similar method would be used to compare mean concentrations.

**7.2.5 Closure Schedule [40 CFR 264.112(b)(6)]**

The expected time schedule for closure activities is as shown in Table 7-1.

**Table 7-1: Closure Schedule**

	Activity	Time for Activity	# of Days from Start of Closure
1.	Removal of the hazardous waste inventory from the HW management units	45 days	45 days
2.	Cleaning of the units and disposal of rinsate	55 days	100 days
3.	Collection of samples	15 days	115 days
4.	Procuring sample analysis results	25 days	140 days
5.	Further cleaning & re-sampling (if necessary)	15 days	155 days
6.	Removal of rinsate	15 days	170 days
7.	Certification of closure	10 days	180 days

Total estimated time for closure is 180 days from the closure start-up.

**7.2.6 Closure Cost Estimate**

The closure cost estimate is based upon each storage unit being at maximum capacity at the time of closure. The actual amount of material in storage at a given time is less than the maximum capacity. Therefore, the closure cost estimate is overly conservative.

In accordance with 40 CFR 264.142(b), the closure cost estimate will be adjusted annually to account for inflation. The adjusted closure cost estimate will be corrected within sixty (60) days of the anniversary date of the established Letter of Credit. The renewed Letter of Credit will reflect the adjusted closure cost estimate. Following in Appendix E is the Closure Cost Estimate.

**7.2.7 Criteria Used For Closure Cost Estimate**

The closure cost estimate was prepared based upon industry standard criteria such as volume of rinsate generated per length of pipe or area being cleaned. A complete listing of the criteria used in developing the closure cost estimate is included in Appendix F.

#### **7.2.8 Financial Assurance and Liability Insurance**

Financial assurance requirements are satisfied through the use of a letter of credit in accordance with 40 CFR 264.143(d). The financial assurance documentation is provided in Appendix B. The letter of credit is sufficient to cover complete closure for all existing facilities. As the proposed facilities are approved for use, the letter of credit will be amended to reflect the adjusted closure costs. In order to meet the requirements of the Letter of Credit, Continental has established a standby trust fund to meet the requirements of 40 CFR 264.143(d)(3). The existing Letter of Credit will be updated for the revised closure cost estimate as the construction of the proposed facilities is completed.

Liability requirements of 40 CFR 264.147 are satisfied through liability insurance. The liability insurance documentation is provided in Appendix C. Continental will notify MDNR in writing within thirty (30) days whenever a claim is filed or if the amount of liability coverage changes.

#### **7.3 PARTIAL CLOSURE**

Continental Cement Company will be replacing the old wet, rotary cement kiln with a new state-of-the-art pre-heater/pre-calciner kiln system. The new pre-heater/pre-calciner kiln system will require closure of the existing wet rotary kiln and associated waste fuel feed mechanisms. Partial closure of these facilities is described herein.

Throughout the life of the permit, additional units will undergo closure as new technologies are developed or the waste market changes. Partial closure procedures as described for these units, such as steam cleaning, rinsing and sending metal to the scrap dealer for recycling, will also be used for future partial closure. If equipment and units are to be clean closed, sampling and testing will be performed with the clean closure criteria being utilized.

##### **7.3.1 Closure Procedures [40 CFR 264.111-112(b)(1)(4)]**

###### **Feed Barn**

The Feed Barn System currently used to supply dry solid fuels to the kiln will be closed after the wet process rotary kiln is shut down. The feed barn equipment will be removed, steam cleaned, and rinsed. The equipment will be sent to a scrap metal company for recycling, and the

rinsate will be utilized as fuel or shipped to an approved facility. The metal building enclosure will also be removed, steam cleaned, rinsed and sent to the scrap metal dealer for recycling. No sampling or testing will be performed on the feed barn equipment or building.

Solid Fuel Feed Equipment to the Existing Rotary Kiln

The weigh belt eductor and associated piping for the solid fuel feed to the existing wet rotary cement kiln will be removed, steam-cleaned and rinsed. The rinsate will be shipped to an approved facility or used on-site as fuel. All equipment will be recycled as scrap metal.

Alternate Method of Cleaning

Alternates to steam cleaning could be sandblasting, high pressure washing, or other suitable methods.

Liquid Fuel Feeding System to the Wet Rotary Cement Kiln

A portion of the liquid fuel metering and valving may be relocated to the new rotary cement kiln feed system. All other piping will be removed, steam-cleaned and rinsed. The equipment will be sent to a scrap metal company for recycling, and the rinsate will be utilized as a fuel or shipped to an approved facility. No sampling or testing will be performed on the liquid fuel feed equipment.

Wet Cement Kiln

The cement kiln will be allowed to bake out at temperatures in excess of 2000F to decontaminate the inside surface for two hours. Sampling of the inside of the kiln will be performed after cool-down. Both coating samples and brick samples will be collected at three locations: 1) 50 feet from the hot-inend, 2) at mid-kiln, and 3) near the chain section. The samples will be analyzed according to the Sampling and Analysis Plan outlined in Section 7.2.3 of this document.

Electrostatic Precipitator

After the bake-out period in the rotary cement kiln, the electrostatic precipitator CKD will be sampled. CKD from the ESP will be sampled at the discharge of each hopper from the four

fields. The four CKD samples will be analyzed according to the Sampling and Analysis Plan outlined in Section 7.2.3 of this document. CKD meeting specifications for the Beville Amendment will represent clean status for all metal surfaces of the ESP and no further cleaning or testing will be required.

Container Storage Area No. 2

After the Part B permit is approved, a new Container Storage Area #4 will be constructed to replace the existing Container Storage Area #2. Container Storage Area #2 is located adjacent to the Mill building and in an area where excess clinker production is temporarily stored. Container Storage Area #2 is needed for clinker storage and will be closed under the Part B permit. The closure plan for this storage area is as follows.

Only containerized waste is stored in this area. All containers will be moved to the new storage area upon completion. The entire concrete pad will be pressure washed using a high-pressure washer. Following washing, the pad will be rinsed with water. A sample of this rinse water will be collected at the sump in the northeast corner of the concrete storage pad. This sample will be tested for the parameters as described in Section 7.2.3 of this plan. Clean closure will be obtained by meeting the levels described in Section 7.2.4.

In addition to testing rinse water from within the storage pad area, four samples will be taken of the concrete floor of the containment area. One sample will be taken within five feet from the west wall of the container storage area at a crack or stained area. Additional samples will be taken five feet from the south edge of the container storage area and five feet from the east wall of the container storage area. The final sample will be taken in the sump located in the northeast corner of the container storage area. If any of these samples fails to meet clean closure, soil samples will be taken below the concrete at each affected location. These samples will be taken at the soil/subbase interface and at 12 inches below the interface in order to determine if leakage has occurred through the container storage pad unit. The samples will be tested in accordance with the requirements as described in Section 7.2.3. Given the existence of clinker in these areas, a background sample of soil will be obtained from a separate location on-site where clinker has been placed on the ground. The samples will be taken for use in comparison of total metals. The clinker will significantly influence the samples taken from the storage area.

Solid Fuel Storage Tank

The solid fuel storage tank located on the burner floor will be closed under these partial closure provisions. The tank was previously used for storage and conveying of dry hazardous waste powder material into the kiln. No hazardous waste has been placed in this tank for over five years. However, Continental Cement has utilized non-hazardous process chemicals in this system that were fed to the kiln to control ring formation.

Given the abrasiveness of the process chemicals, all hazardous waste residues within the interior of the tank and the feeding mechanisms at the discharge of the tank have been removed. The system is visually clean. No additional cleaning will be performed prior to rinsing the unit and testing the rinsate. There was a small baghouse on top of this tank in which all of the filter bags was removed and disposed of as hazardous wastes. These bags were placed in the feed prep area for treatment and reuse as a fuel material.

The rinsate sample taken from the tank will be tested in accordance with the requirements of Section 7.2.3. Clean closure will be achieved if the requirements of Section 7.2.4 are met.

Pneumatic Solid Fuel Feed System

The Pneumatic Solid Fuel Feed System previously utilized with the solid fuel storage tank will also be closed under these partial closure provisions. The pneumatic unloading equipment will be removed, steam cleaned, and rinsed. The equipment will be sent to a scrap metal company for recycling and the rinsate will be utilized as fuel or shipped to an approved facility. No sampling or testing will be performed on the unloading equipment.

Feed Barn

The Feed Barn System currently used to supply dry solid fuels to the long wet kiln will be closed after the enclosed overhead conveyor is installed from the Feed Prep #2 area to the burner floor. The feed barn equipment will be removed, steam cleaned, and rinsed. The equipment will be sent to a scrap metal company for recycling and the rinsate will be utilized as fuel or shipped to an approved facility. The metal building enclosure will also be removed, steam cleaned, rinsed and sent to the scrap metal dealer for recycling. No sampling or testing will be performed on the unloading equipment.

**7.3.2 Maximum Inventory and Cost [40 CFR 264.112(b)(3)]**

The maximum inventory of hazardous wastes expected in facilities that will be closed during partial closure is 72,000 gallons in Container Storage Area #2. The cost of closure of all partial closure units has been included in the facility closure cost estimate. Once clean closure is achieved, the cost estimates will be revised to reflect actual remaining closure cost and release from financial assurance for each unit may be requested.

**Table 7-2: Sample Types, Analytical Parameters and Clean Closure Criteria**

Sample Type	Analytical Parameters	Clean Closure Criteria
Background Concrete and Clinker Samples	Total metals	Used to establish clean closure criteria
Background Soil Samples	Total metals	Used to establish clean closure criteria
	Total VOCs	
	Total SVOCs	
Concrete Core Samples for Closure	Total metals	Comparison to background levels
	Total VOCs	Less than the practical quantitation limits
	Total SVOCs	
Kiln Coating, APCS and Brick Samples	TCLP metals	Comparison to regulatory limits for a characteristic hazardous waste
Soil Samples for Closure	Total metals	Comparison to background levels
	Total VOCs	
	Total SVOCs	
	TCLP metals	Less than the regulatory limits for a characteristic hazardous waste
Rinsate Samples **	Total metals	Less than the practical quantitation limits
	Total VOCs	
	Total SVOCs	

\*\* Field blanks and decon blanks will be utilized to verify the quality of the water used for rinsing and the field sampling techniques. Should background levels of organics be present in the rinse water, comparison for clean closure will include rinse water background levels.

**Table 7-3: Analytical Parameters and Methods**

Analytical Parameters	Analytical Methods
Total Metals	7040 (Flame AA) or 6010A (ICP)
Antimony	7060A (GFAA) or Flame AA or 6010A (ICP)
Arsenic	7080 (Flame AA) or 6010A (ICP)
Barium	6010A (ICP)
Beryllium	7130 (Flame AA) or 6010A (ICP)
Cadmium	7191 (Flame AA) or 6010A (ICP)
Chromium	7420 (Flame AA) or 6010A (ICP)
Lead	7471 (CVAA) or 6010A (ICP)
Mercury	7740 (GFAA) or Flame AA or 6010A (ICP)
Selenium	7760A (Flame AA) or 6010A (ICP)
Silver	6010A (ICP)
Thallium	6010A (ICP)
Total Volatile Organic Compounds (VOCs)	EPA Method 8260A
Total Semivolatile Organic Compounds (SVOCs)	EPA Method 8270B
TCLP Metals	EPA Method 1311 followed by analytical methods listed for total metals analysis
Arsenic	
Barium	
Cadmium	
Chromium	
Mercury	
Lead	
Selenium	
Silver	

GFAA: graphite furnace atomic absorption spectroscopy  
Flame: AA: direct aspiration atomic absorption spectroscopy  
CVAA: cold vapor atomic absorption spectroscopy  
ICP: inductively coupled plasma spectroscopy

Continental Cement Company, LLC  
Hannibal, Missouri  
RCRA ID# MOD054018288

~~Class 3 Modification~~  
Part II of the Permit  
[Class 3 Modification](#)

~~Part II Attachment E-4~~  
~~Closure Cost Estimate~~

Closure Cost Estimate

**Continental Cement Company**  
Summary  
3/16/2007

Total Disposal Cost For Maximum Inventory of Hazardous Waste	=	\$1,234,945
Total Facility Decontamination Cost	=	\$111,960
Total Sampling and Analyses Cost for Existing Facilities	=	\$140,240
Total Closure Certification Cost	=	\$45,696
<b>Total Closure Cost =</b>		<b>\$1,532,841</b>

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**Disposal Cost for Storage Items**

<b>A. Liquid Fuel Disposal From Storage/Burn and Treatment Tanks</b>						
380000 gallons	X	\$0.18	/gallon	=		\$69,160
<b>B. Containment Building (Feed Prep #1)</b>						
1000 CY	X	\$225	/CY	=		\$225,000
<b>C. Containment Building (Feed Prep #2)</b>						
545 CY	X	\$225	/CY	=		\$122,625
<b>D. Container Storage Area #1</b>						
36000 gallons	X	\$1.12	/gallon	=		\$40,320
<b>E. Container Storage Area #2</b>						
72000 gallons	X	\$1.12	/gallon	=		\$80,640
<b>F. Container Storage Area #3 (Rail Car Area)</b>						
360,000 gallons	X	\$1.12	/gallon	=		\$403,200
<b>G. Container Storage Area #4</b>						
262500 gallons	X	\$1.12	/gallon	=		\$294,000
<b>Total Disposal Cost for Maximum Inventory of Hazardous Waste =</b>						<b><u>\$1,234,945</u></b>

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Decontamination Cost

<u>Liquid Fuel Tanks, Containment Area &amp; Truck Unloading Area</u>							
Disposal of Sludge							
5320 gallons	X	8.33 lbs/gal	X	1 ton/	2000 lbs	X	\$253 /ton = \$5,606
Disposal of steam cleaning rinsate							
19000 gallons	X	\$1.00 /gallon		tanks		=	\$19,000
262.132 gallons	X	\$1.00 /gallon		containment		=	\$262
8500 gallons	X	\$1.00 /gallon		pipng		=	\$8,500
Labor							
5 people	X	16 days	X	8 hours/day	X	\$30 /hour	= \$19,200
						Subtotal	= \$52,568
<u>Containment Building (Feed Prep #1)</u>							
Disposal of steam cleaning rinsate							
146.52 gallons	X	\$1.00 /gallon		containment		=	\$147
100 gallons	X	\$1.00 /gallon		pipng		=	\$100
400 gallons	X	\$1.00 /gallon		equipment		=	\$400
Labor							
5 people	X	2 days	X	8 hours/day	X	\$30 /hour	= \$2,400
						Subtotal	= \$3,047
<u>Containment Building (Feed Prep #2)</u>							
Disposal of steam cleaning rinsate							
224.48 gallons	X	\$1.00 /gallon		containment		=	\$224
1800 gallons	X	\$1.00 /gallon		pipng		=	\$1,800
Labor							
5 people	X	2 days	X	8 hours/day	X	\$30 /hour	= \$2,400
						Subtotal	= \$4,424
<u>Container Storage Area #1</u>							
Disposal of steam cleaning rinsate							
33.2 gallons	X	\$1.00 /gallon		containment		=	\$33
Labor							
2 people	X	1 days	X	4 hours/day	X	\$30 /hour	= \$240
						Subtotal	= \$273
<u>Container Storage Area #2</u>							
Disposal of steam cleaning rinsate							
132 gallons	X	\$1.00 /gallon		containment		=	\$132
Labor							
2 people	X	1 days	X	8 hours/day	X	\$30 /hour	= \$480
						Subtotal	= \$612

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<u>Container Storage Area #3</u>							
Disposal of steam cleaning rinsate							
342.4 gallons	X	\$1.00 /gallon		containment	=	\$342	
1250 gallons	X	\$1.00 /gallon		piping	=	\$1,250	
Labor							
5 people	X		5 days	X	8 hours/day	X	\$30 /hour = \$6,000
						Subtotal	= \$7,592
<u>Drum Decanting Systems</u>							
Disposal of steam cleaning rinsate							
1800 gallons	X	\$1.00 /gallon		piping	=	\$1,800	
100 gallons	X	\$1.00 /gallon		tank	=	\$100	
2100 gallons	X	\$1.00 /gallon		equipment	=	\$2,100	
Labor							
8 people	X		5 days	X	8 hours/day	X	\$30 /hour = \$9,600
						Subtotal	= \$13,600
<u>Ball Mill Blending System (including transfer piping)</u>							
Disposal of steam cleaning rinsate							
83.2 gallons	X	\$1.00 /gallon		containment	=	\$83	
2000 gallons	X	\$1.00 /gallon		piping	=	\$2,000	
3100 gallons	X	\$1.00 /gallon		mill/equipment	=	\$3,100	
Labor							
5 people	X		4 days	X	8 hours/day	X	\$30 /hour = \$4,800
						Subtotal	= \$9,983
<u>Container Storage Area #4</u>							
Disposal of steam cleaning rinsate							
588 gallons	X	\$1.00 /gallon		containment	=	\$588	
Labor							
5 people	X		4 days	X	8 hours/day	X	\$30 /hour = \$4,800
						Subtotal	= \$5,388
<u>Railcar Unloading Piping to Storage</u>							
Disposal of steam cleaning rinsate							
5200 gallons	X	\$1.00 /gallon		piping	=	\$5,200	
Labor							
5 people	X		4 days	X	8 hours/day	X	\$30 /hour = \$4,800
						Subtotal	= \$10,000

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<u>Airlock/Decon Area</u>						
Disposal of steam cleaning rinsate						
88 gallons	X	\$1.00 /gallon	containment	=		\$88
44 gallons	X	\$1.00 /gallon	equipment	=		\$44
Labor						
3 people	X	2 days	X	8 hours/day	X	\$30 /hour
					=	\$1,440
						Subtotal
					=	<u>\$1,572</u>
<u>Burner Floor Equipment &amp; Kiln System Area</u>						
Disposal of steam cleaning rinsate						
500 gallons	X	\$1.00 /gallon		=		\$500
Kiln bake out (kiln will be in operation producing clinker)						
				=		\$0
Labor						
5 people	X	2 days	X	8 hours/day	X	\$30 /hour
					=	\$2,400
						Subtotal
					=	<u>\$2,900</u>
<b>Total Facility Decontamination Cost =</b>						<b><u>\$111,960</u></b>

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Sample Collection & Analyses Costs

Rinsate Samples	
<u>Unit(s)</u>	<u># of Rinsate Samples</u>
Tank Area	20
Container Storage Areas	8
Feed Prep/Ball Mill Complex/Drum Decanting Systems	16
Kiln System	3
Partial Closure Areas	3
<b>Total Rinsate Samples</b>	<b>50</b>

Kiln Coating and Brick Samples	
<u>Unit(s)</u>	<u># of Kiln Samples</u>
Cement Kiln Brick	3
Cement Kiln Coating	4
Calciner	2
APCS Dust	4
Partial Closure (Old Kiln)	11
<b>Total kiln system samples</b>	<b>24</b>

Concrete Core Samples	
<u>Unit(s)</u>	<u># of Core Samples</u>
Containment Storage Building (Feed Prep #1)	4
Containment Storage Building (Feed Prep #2)	4
Tank Area	4
Container Storage Area	10
Ball Mill Complex	2
Partial Closure Areas	4
<b>Total concrete samples</b>	<b>28</b>

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— Soil Samples (worst case)

Unit(s)	# of Soil Samples
Tank Area	8
Container Storage Areas	16
Feed Prep Areas & Ball Mill Complex	30
Kiln System	0
Partial Closure Areas	4
<b>Total Soil Samples</b>	<b>58</b>

Background/QA Samples

Unit(s)	# of Samples
Background Soil	6
Background Concrete	6
Background Clinker	6
Trip Blanks	10
Field Blanks	10
Decon Blanks	10
<b>Total Background/QA Samples</b>	<b>48</b>

Laboratory Analysis Cost  
208 Samples X \$650 /sample = \$135,200

Sample collection cost for existing units

2 people X 10.5 days X  
8 hours/day X \$30 /hour = \$5,040

**Total Sample Collection &  
Analyses Cost for Existing  
Facilities = \$140,240**

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**APPENDIX F**  
**CRITERIA USED FOR CLOSURE COST ESTIMATE**

**Criteria Used for Closure Cost Estimate**

1. Steam cleaner used will generate one gallon of rinsate per 50 square feet of containment surface cleaned and one gallon of rinsate per linear foot of piping.

The following are the dimensions of various containment areas and associated piping lengths.

Unit	Containment Dimensions (ft)			Area (ft <sup>2</sup> )
Six 25,000-gallon Fuel Tanks	62	x	40.3	2499
Two 75,000-gallon Tanks	75	x	60	4500
One 75,000-gallon Tank	74	x	34	2516
One 5,000-gallon Storage Tank	20	x	20	400
Two Liquid Truck Unloading Areas	76	x	42	3192
Container Storage Area #1	41.5	x	40	1660
Container Storage Area #2	132	x	50	6600
Container Storage Area #3	112	x	60	6720
Container Storage Area #4				
Building #1	196	x	75	14700
Building #2	196	x	75	14700
Railcar Unloading Area	260	x	40	10400
Airlock/Decon Area	110	x	40	4400
Ball Mill Area	104	x	40	4160
Feed Prep				
#1	111	x	66	7326
#2	122	x	92	11224

**Total Area = 94997**

Unit(s)	Piping Length (ft)
Liquid Fuel Tanks	8500
Rail Car Unloading Piping	5200
Feed Prep Building #1	100
Feed Prep #2 Piping	1800
Drum Decant System	1800
Container Storage Area #3 (Railcar Area)	1250
Ball Mill Facility (Piping to and from Tank Farm)	2000

**Total Piping Length = 20650**

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2. The following TSDs are examples of those that are utilized for off-site shipments. Agreements for disposal of inventories are in place for the indicated estimated costs. Copies of the agreements are included in Appendix D.
    - A. Energy recovery at Giant Resource Recovery, Harleyville, South Carolina \$225.00 per CY or \$1.12 per gallon
    - B. Energy recovery at Holcim, Clarksville, Missouri - \$0.18 per gal.
    - C. Steam cleaning rinsate at Heritage Environmental, Indianapolis, Indiana- \$1.00 per gallon
  3. The amount of rinsate generated from tanks and ball mill cleaning will be 5% of the unit capacity.
  4. Note that the closure cost estimate is based on worst case scenario that all wastes will be disposed of off-site. Actual closure for on-site disposal would be much less.
  5. Closure cost estimate assumes that 8 gallons of sludge will need to be disposed of per 1,000 gallons of tank capacity for liquid fuel tanks.

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