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Keystone Cement Company

Keystone Cement Company
Route 329, P.O. Box A
Bath, PA 18014

Phone: (610) 837-1881

Facility Contacts

Karen Livezey, Keystone Environmental
Compliance Manager

Phone (610) 837-1881 Ext 8313
klivezey@gchi.com

Mechella Saba, Keystone Fuel Manager

Phone (610) 837-1881 Ext 8312
msaba@gchi.com

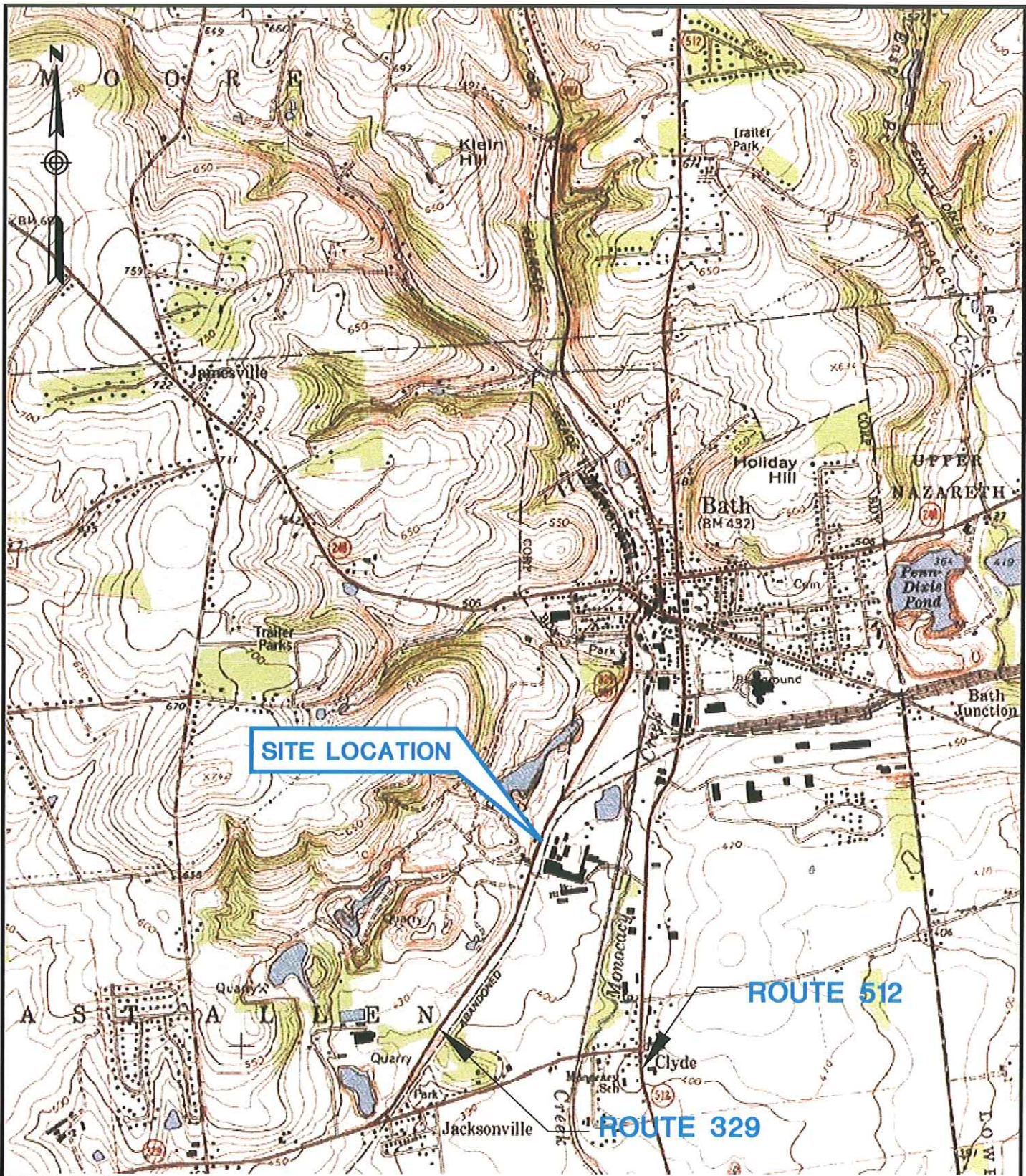
Art Weber, Keystone Business Manager

Phone (610) 390-9835
arweber@gchi.com

Keystone Cement Co. operates a cement manufacturing facility on 850 acres in Bath, PA. Since 1976, Keystone has blended high-BTU liquid hazardous waste into fuel which is used as a supplement to coal in its cement manufacturing process. Keystone was the first cement company in the United States to have an energy recovery program of this type.

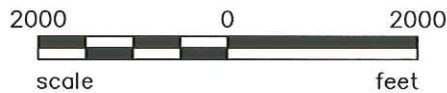
Keystone beneficially uses hazardous waste-derived fuel to replace fossil fuel that would otherwise be required. Fuel blending is accomplished by carefully analyzing incoming bulk liquid wastes and combining them in storage tanks to produce a fuel that is suitable for Keystone's cement production process. Keystone's waste management operation includes four waste fuel storage tanks with a combined capacity of 93,000 gallons. All tanks are above ground, nitrogen blanketed, and agitated. The blended waste fuel is transferred from the storage tanks to Keystone's dry preheater-precalciner kiln as needed.

Keystone completed a \$230 million modernization project in December 2009. The result was an entirely new cement manufacturing operation at the Bath location. The plant is one of the most modern in the United States, producing nearly double the cement of the previous plant. This has enabled Keystone to better serve the growing needs of its customers while at the same time reducing plant emissions.



REFERENCE

1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF CATASAUQUA, PENNSYLVANIA, DATED 1992.



JOB No.:	013-6057	SCALE:	AS SHOWN
CAD BY:	AM	DATE:	08/13/02
CHK BY:		FILE No.:	2PA21-966
REV BY:		DR SUBTITLE:	01

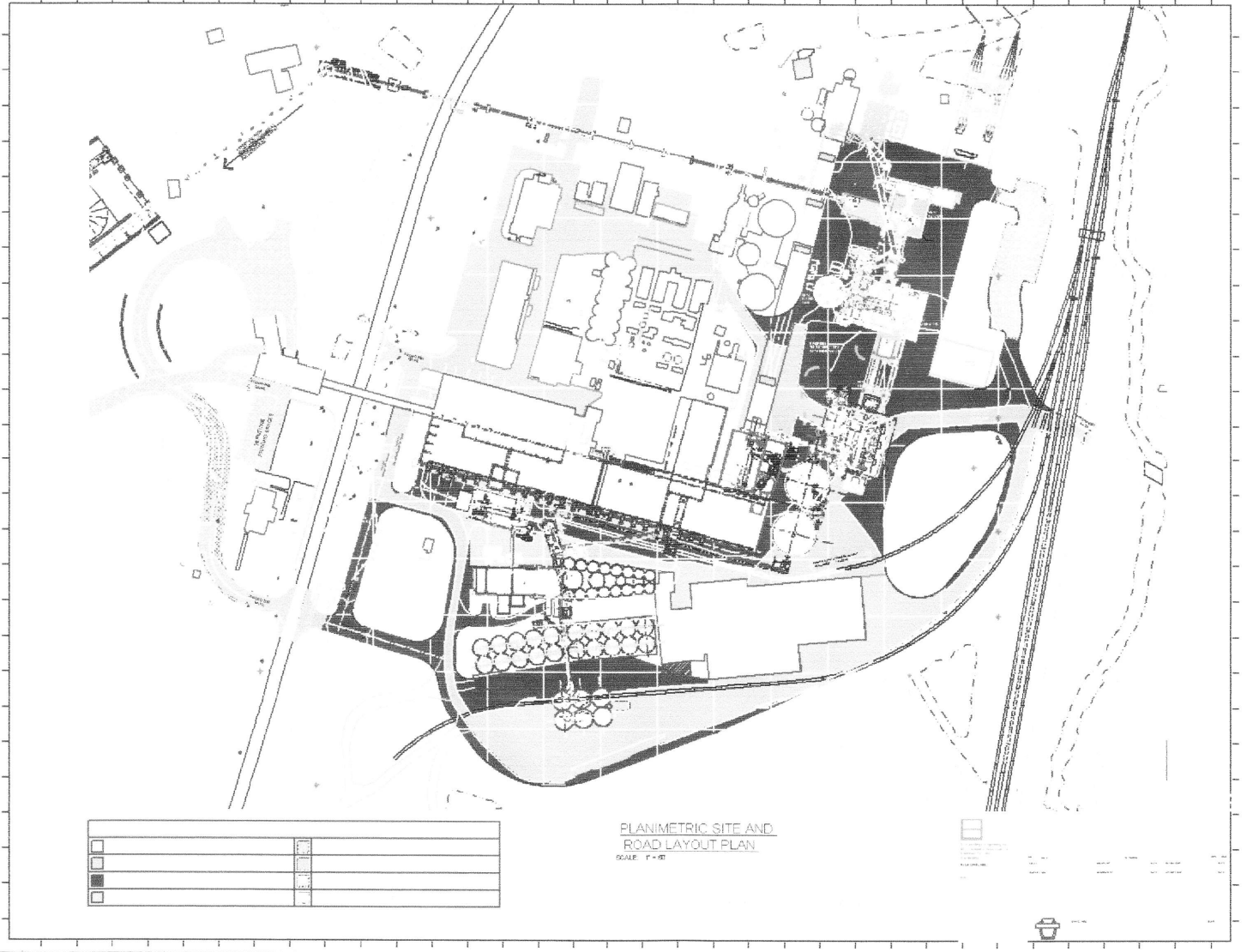
LOCATION MAP

Golder Associates

KEYSTONE CEMENT COMPANY

FIGURE **2**

Keystone Cement/GRR-Keystone Facility Layout and Surroundings





LAND, SURROUNDINGS

History: Keystone began operations at this site in 1928. Prior to 1928, the property was undeveloped land.

Neighbors: North – Residential (1 mile), Other: Commercial
East – Industrial (adjacent), Other: Commercial, Residential
West – Residential (.5 mile), Other: Mining, Agricultural
South – Residential (.5 mile), Other: Agricultural

There is buffer of varying footage on site between the active portions of the facility and the facility boundaries.

Residential population within 1 mile – 2343

Sensitive Receptors: Church – 1 mile East; School, Park – .75 miles East

Water: The site is not adjacent to any wetlands. All RCRA activities at Keystone are well outside of the 100-year flood plain.

Nearest surface water supply: Monocacy Creek is adjacent to Keystone's property to the east. It is a small surface water used for recreational trout fishing. Keystone also maintains a reservoir supplied with quarry water at the northeast corner of the property for use as process water.

No public water supply within 1 mile, but there are a few private wells located within one mile of Keystone and they are monitored quarterly.

Groundwater Monitoring at cement plant:

1. Active CKD north stockpile- 4 wells
2. Closed CKD south landfill- 4 wells
3. Closed refractory landfill- 2 wells

The monitoring parameters are quarterly sampling for field pH, TDS, and sulfate dissolved metals (calcium, sodium, iron, magnesium, potassium). In addition, MW-1 and 2 at the north CKD are analyzed for ammonia, bicarbonate, COD, chloride, fluoride, manganese, nitrate, specific conductivity, total alkali, TOC and turbidity.

Geology: The basic geology surrounding Keystone is considered to be karst (limestone) topography covered by Washington soil. There is more limestone beneath the soil. The bedrock in the region consists of carbonates and shale. The shallow groundwater aquifer starts at approximately 150' below ground surface (bgs). Deeper aquifers start at a depth of about 300' bgs. Overall flow patterns of surface run-off through and around the permitted area generally drain easterly from the east side of Route 329.



Giant's Resource Recovery Facilities

Keystone Cement Co.
Bath, PA

Blends and burns bulk liquid waste-derived fuel in the manufacture of Keystone cement

GRR – Sumter, Inc.
Sumter, SC

Processes containerized and bulk liquids, solids, and sludges

GRR – Harleyville, Inc.
Harleyville, SC

Blends and burns bulk solid and liquid waste-derived fuel in the manufacture of Giant cement

GRR – Attalla, Inc.
Attalla, AL

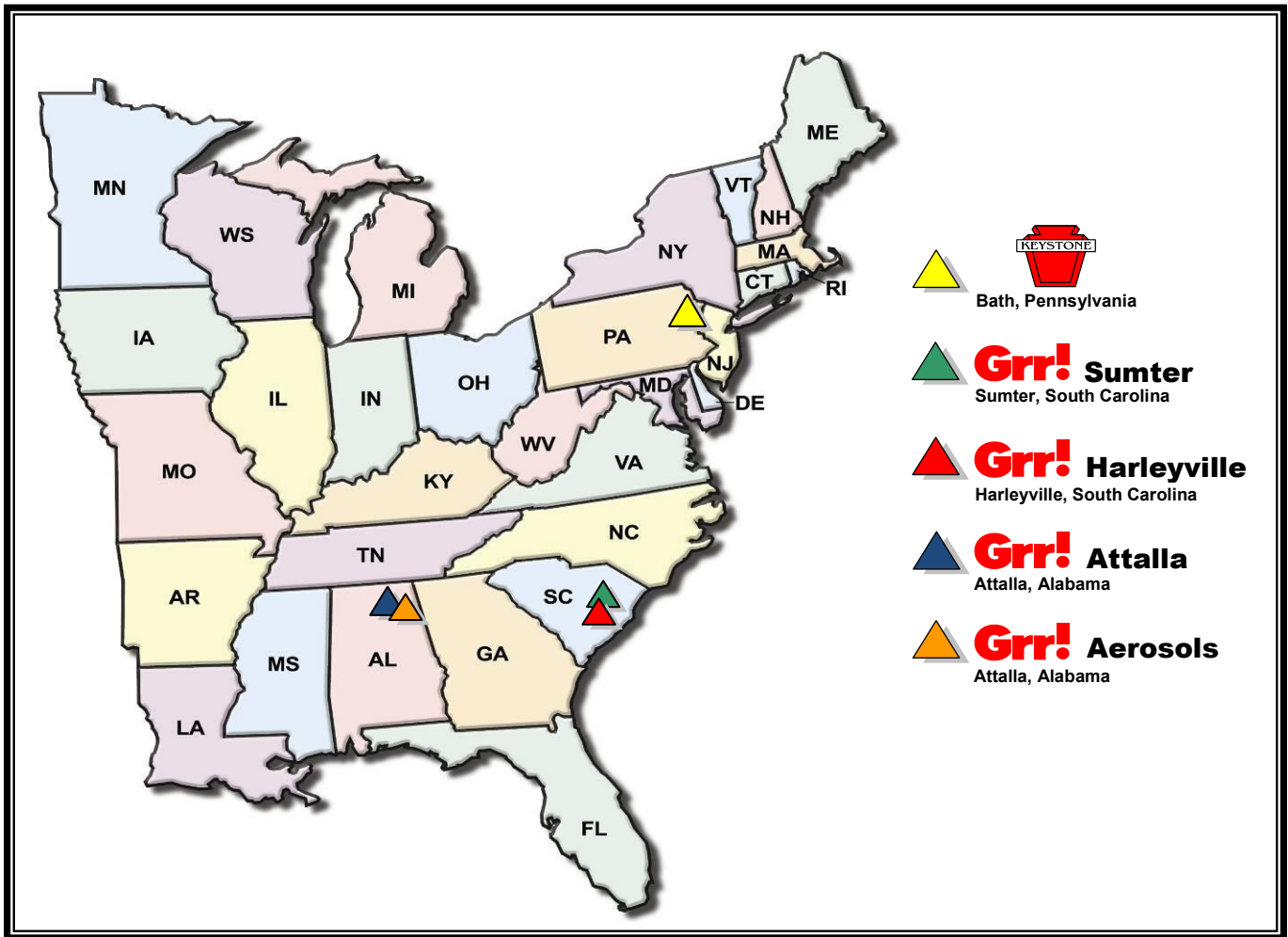
Processes containerized and bulk liquids, solids, and sludges

GRR Aerosols, Inc.
Attalla, AL

Disposes of waste in aerosol cans through 100% recycling; processes steel drums for reconditioning



The **Grr!** Giant Resource Recovery Facilities



Resource Recovery and Energy Reutilization

Safe, Reliable, Permanent



The Giant Family of Companies

A History of Resource Recovery and Energy Reutilization

Giant Cement Holding, Inc., (GCHI) manufactures high quality Portland cement through its subsidiaries **Giant Cement Company** in Harleyville, SC, and **Keystone Cement Company** in Bath, PA. For thirty and forty years respectively, the facilities have carefully blended and beneficially reused hazardous and non-hazardous wastes as supplemental fuel in their cement production processes.

Giant Cement began manufacturing cement at its Harleyville, SC, facility in 1947. It opened **Giant Resource Recovery, Inc.-Harleyville (GRR-Harleyville)**, its waste fuel processing and resource recovery facility, in 1987. Keystone opened its cement production operation in Bath, PA, in 1928. It began processing and burning waste as fuel in 1976 and was purchased by GCHI in 1985. Both the cement production operations and the waste management operation are permitted as and operate as Keystone Cement.

In 1998, Giant furthered its dedication to resource recovery through the addition of M&M Chemical, a waste processing and container management facility located in Attalla, AL. A year later, Giant acquired the Sumter, SC, waste management and solvent recovery operation previously known as Omni-Southeastern Chemical and Solvents. As members of the Giant family, these facilities are now named **GRR-Attalla** and **GRR-Sumter**.

GRR grew yet again in early 2002 with the opening of **GRR Aerosols, Inc.**, in Arvonnia, VA. GRR Aerosols offers the unique capability of disposing of wastes in aerosol containers by recycling 100% of the components in an innovative closed-loop system. GRR Aerosols expanded and relocated to Attalla, AL, in late 2007. GRR Aerosols handles a greater volume and more types of aerosol wastes than any company in North America.

Since its inception, Giant has developed significant proprietary technology to efficiently use solid industrial wastes as a reliable fuel source. The Harleyville facility completed an extensive \$130 million expansion in 2005 which maximize the use of solid fuel. The following year, Keystone unveiled a \$230 million modernization project. Complemented by GRR's industry-leading ability to process waste into fuel, Giant Cement and Keystone Cement are two of the most advanced cement plants in the United States.

As its history shows, Giant actively seeks out new technologies and methods of resource recovery and energy reutilization. By combining more than 130 years of experience with a demonstrated commitment to environmental stewardship, the GRR and Keystone family of companies provides generators with an unparalleled range of safe, reliable, and permanent waste management services.



REGULATORY CONTACTS

Pennsylvania Department of Environmental Protection (PADEP)

Jessica Wagoner, Air Quality Specialist	610-861-2070	jwagoner@state.pa.us
Mark Wejkszner, Air Quality Program Manager	570-826-2435	mwejkszner@state.pa.us
Roger Bellas, Waste Program Regional Manager	570-826-2511	rbellas@state.pa.us
Amy Faulch, Solid Waste Specialist	610-861-2158	afaulch@state.pa.us
Scott Confer, Water Quality Specialist	610-861-2135	sconfer@state.pa.us
Christian Kuba, Mining Inspector	570-621-3118	Kuba@state.pa.us
Michael Menghini, District Mining Manager	570-621-3118	mmenghini@state.pa.us

Keystone Cement Permits

EPA ID No. PAD002389559

RCRA Part B Permit for storage; originally issued 12/27/1991; renewed 7/9/2009; expires 7/9/2019; Renewal submitted 08/03/2018; operating under a Permit Shield pending approval

Title V Operating Permit No. 48-0003

Includes all applicable MACT requirements; originally issued 8/31/2001; expired 5/14/2015; Renewal application submitted 2/2015; operating under a Permit Shield pending approval

NPDES Permit No. PA 0011517

Issued 10/9/2002; renewed 1/1/2015; expires 12/31/2019; Renewal application submitted 08/01/2019; operating under a Permit Shield pending approval

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

**Permit
For
Hazardous Waste Treatment, Storage, and/or Disposal Facility**

Permit No.	<u>PAD002389559</u>
Date Issued	<u>July 9, 2009</u>
Date Expired	<u>July 9, 2019</u>

Under the provisions of the Pennsylvania Solid Waste Management Act of July 7, 1980, Act 97, a permit for hazardous waste management facility in East Allen Township in the County of Northampton is granted to:

Keystone Cement Company
Route 329
Bath, PA 18014-0058

This permit is applicable to the facility named as Keystone Cement Company Hazardous Waste Storage & Thermal Treatment (for energy recovery within approved cement kiln industrial furnaces) Facility and described as:

40°42'57.7" Latitude
75°23'55.5" Longitude
Site: 37 Acres

This permit allows for the acceptance and storage of approved hazardous and residual (liquid) wastes in the approved hazardous waste storage tank system followed by their burning for energy recovery within the approved cement kiln industrial furnaces per the Approved Application as superseded by the Hazardous Waste regulations and the conditions and terms of this permit.

All conditions of the attached permit supersede conditions of the original permit and permit modifications issued under this Hazardous Waste Management Permit Number except as specifically noted within this permit. Conditions contained herein that reference "permit" refer to the hereby reissued permit. The Permittee retains liability and responsibility from the original issuance date of December 26, 1991 for the operation, maintenance, pollution, closure, post-closure maintenance, compliance history, and other responsibilities under the Solid Waste Management Act, the Environmental Protection Acts, PA Title 25 Environmental Protection Regulations, and the terms and conditions of the permit.


FOR THE DEPARTMENT OF
ENVIRONMENTAL PROTECTION

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Permit for HW Storage & Thermal Treatment (Energy Recovery within Cement Kilns) Facility**

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Permit No. PAD002389559

Date Issued: July 9, 2009

Date Expires: July 9, 2019

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Permit No. PAD002389559

Date Issued: July 9, 2009

Date Expires: July 9, 2019

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Route 329

Bath, PA 18014-0058

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**FOR THE DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM NO. 13-A
MODIFICATION TO SOLID WASTE DISPOSAL AND/OR PROCESSING PERMIT

Under the provisions of Act 97, the Solid Waste Management Act of July 7, 1980, Solid Waste Permit Number PAD002389559 issued on (date original permit was issued) Dec. 27, 1991 to (permittee) Keystone Cement Company
(address) East Allen Township
 Northampton County

is hereby modified as follows:

1. This permit modification is being issued pursuant to the Pennsylvania Solid Waste Management Act of July 7, Act 97, 35 P.S. Section 6018.101 et seq. (the Act), DEP hazardous waste regulations and Federal hazardous waste regulations.
2. This permit modification is based on information in the application received by the Department on October 19, 2012 entitled "RCRA Permit Modification." The application was prepared by Keystone Cement Company. Supplemental information was received on April 22, 2014. The application included the following documents:
 - a. Part A - Hazardous Waste Permit Application, received October 19, 2012
 - b. Part B - Permit Modification Certification, received October 19, 2012
 - c. GIF – General Information Form, received October 19, 2012
 - d. Waste Analysis Plan, received April 22, 2014
 - e. Standard Operating Procedures (SOPs); Waste Fuel SOP WF-02 received April 22, 2014
 - f. Revised Waste Oil Management Standards and Waste Oil Sampling and Analysis Plan, received October 19, 2012
 - g. New Tank Farm Construction Schedule, received October 19, 2012
 - h. Feedstream Analysis Plan, received October 19, 2012
3. This permit modification provides for the following revisions to the facilities Waste Analysis Plan:
 - a. The minimum waste fuel heat content in the facilities Waste Acceptance Criteria has been lowered to 5,000 BTU/lb.
 - b. Specific gravity, Sulfur and Ash are removed from the facilities Waste Acceptance Criteria.

This modification shall be attached to the existing Solid Waste Permit described above and shall become a part thereof effective on May 7, 2014
(date)

 William Tomayko
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

Form No. 13-A
 Modification to Solid Waste Disposal and/or Processing Permit
 Keystone Cement Company

- c. The metal parameters in the facilities Waste Acceptance Criteria have been grouped based on volatility and metal limits have been revised as shown in Table 1.1 in Condition 7 below.
 - d. Keystone Cement Company will perform periodic metals testing as described in the Waste Analysis Plan.
4. Process code T01 (tank treatment) is added to the RCRA Part A permit. This process code is being added to accommodate the practice of bulking waste fuel from different shipments in burn tanks to provide a homogeneous fuel for kiln operation. No additional equipment or management methods are included with this process code addition.
 5. The permit is modified to allow Keystone Cement Company to store off-spec used oil in an 18,000 gallon above ground storage tank identified as AST-48. Off-spec used oil will be stored in this tank prior to being burned in the kiln.
 6. Permit condition Section IV.A.3 is deleted. The construction schedule for the new tank farm storage facility and rail-unloading system is extended until July 9, 2019.
 7. Table 1 - Waste Acceptance Criteria for On-site Waste Testing in Permit Condition Section IV.B.1 is deleted and replaced with Table 1 and Table 1.1 below.

Table 1
WASTE ACCEPTANCE CRITERIA
FOR ON-SITE WASTE TESTING

parameter	Test Method ¹	Source	Limits	Units
% Chloride	9253 (Mod)	SW846	3.00	%
PCBs Screen	3620B (Mod)/8000B (Mod)/8082 (Mod)	SW846	Not Present ²	ppm
Btu/lb.	5050 (Mod)/ E711 (Mod)	SW846/ASTM	≥5000	Btu/lb.
Peroxide	Manufacturers Specs	EM QUANT or Equivalent	Not Present (<10) ³	ppm
pH	9045C (Mod)	SW846	2.00-12.5	-
Viscosity	Manufacturers Specs	Brookfield Viscometer or equivalent	<7000	cP @ 60°F ± 2°, 4/1-9/30
			<12000	cP @ 35°F ± 2°, 10/1-3/31
Compatibility	D5058 (Mod)	ASTM	Yes	-
Phases ⁴	Visual Inspection	N/A	Consistent with Mod 1 ⁴	Number of Phases
Iodine ⁵	Keystone SOP	KCC Method	<2	%

¹ Changes to the analytical methods may be made via the Part IV Section F (SOP Modification) process. Updated methods will be incorporated consistent with the facility's laboratory accreditation.

² PCBs will be screened at the facility with a maximum detection level of 40 ppm. Waste acceptance at pre-qualification (Module 1) represents "not present" as defined as "quantifiable levels of PCBs" at 40 CFR Part 761.3 (i.e. - 2 ppm).

³ On site screening level.

⁴ The incoming shipment should not indicate a greater number of phases than indicated on the Mod 1 Form. In the event that there are a greater number of phases than indicated on the Mod 1 Form,

Form No. 13-A
 Modification to Solid Waste Disposal and/or Processing Permit
 Keystone Cement Company

the generator will be contacted to ensure that the additional phases do not represent a change in the waste or process generating the waste.

⁵ Applies to waste streams where there is a discrepancy in the number of phases is identified during incoming shipment inspection procedures (i.e.- there are a greater number of phases than identified on the Module 1/Form U). Keystone will determine iodine content for any phase containing 25% or greater of the waste sample by volume and containing 75% or greater water content.

Table 1.1
PERIODIC METALS CONFIRMATION TESTING
SUMMARY OF ANALYTICAL METHODS AND SCREENING LIMITS

Parameter	Test Method	Source	Limits ¹	Units
As	3051(Mod)/6010B (Mod) or 7061A (Mod)	SW846	1120 (combined) ¹	ppm
Be	3051(Mod)/6010B (Mod) or 7090	SW846		ppm
Cr	3051(Mod)/6010B (Mod) or 7190	SW846		ppm
Cd	3051(Mod)/6010B (Mod) or 7130	SW846	3500 (combined) ¹	ppm
Pb	3051(Mod)/6010B (Mod) or 7420	SW846		ppm
Hg	3051(Mod)/3051A (Mod)/7470A (Mod)/ 7471 A (Mod)	SW846	10	ppm

¹ Metals testing is only required to be performed on every tenth shipment of waste from each generator. The periodic testing will be used to confirm that the waste stream metals concentrations remain below the limits detailed above. However, the testing is not required to be performed prior to individual shipment acceptance and unloading.

8. The following documents are updated and attached to this permit modification to reflect the identified changes to the facility and permit:
 - a. Attachment 1 (Waste Analysis Plan)
 - b. Attachment 10 (Standard Operating Procedures (SOPs); Waste Fuel SOP WF-02)
 - c. Revised Waste Oil Management Standards and Waste Oil Sampling and Analysis Plan
 - d. Feedstream Analysis Plan
 - e. Modified Part B Application narrative



AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR INDUSTRIAL WASTEWATER FACILITIES

NPDES PERMIT NO: PA0011517

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

**Keystone Cement Company
Route 329 PO Box A
Bath, PA 18014-0058**

is authorized to discharge from a facility known as **Keystone Cement Plant**, located in **East Allen Township, Northampton County**, to **Monocacy Creek** in Watershed(s) **2-C** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON JANUARY 1, 2015

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON DECEMBER 31, 2019

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.
2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))
3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d)(2))

In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code 92a.7 (b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED December 18, 2014

ISSUED BY 

**Michael J. Brunamonti, P.E.
Clean Water Program Manager
Northeast Regional Office**

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 002, Latitude 40° 43' 5.8584", Longitude 75° 23' 45.7111", River Mile Index 10.9900, Stream Code 3384

Receiving Waters: Monocacy Creek

Type of Effluent: Stormwater overflow from site impoundment

1. The permittee is authorized to discharge during the period from January 1, 2015 through December 31, 2020.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 002

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS
(Continued)**

Additional Requirements

The permittee may not discharge:

1. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code 92a.41(c))
2. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code 92a.47(a)(7) and 95.2(2))
3. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code 93.6(a))
4. Foam or substances that produce an observed change in the color, taste, odor or turbidity of the receiving water, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. (25 Pa Code 92a.41(c))

Footnotes

- (1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.
- (2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

Supplemental Information

The effluent limitations for Outfall 004 were determined using an average effluent discharge rate of 3.7 MGD.

The effluent limitations for IMP 102 were determined using an average effluent discharge rate of 1.1 MGD.

The effluent limitations for Outfalls 002, 003, 005, and 006 were determined using an average effluent discharge rate of (Stormwater) 0.0 MGD.



Keystone, Bath, PA

Keystone submitted a Title V permit renewal application to PA DEP in February 2015. Keystone is operating under a Permit Shield until the new Title V permit is issued.



**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM**

PLAN APPROVAL

Issue Date: October 15, 2014

Effective Date: October 15, 2014

Expiration Date: May 14, 2015

In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to construct, install, modify or reactivate the air emission source(s) more fully described in the site inventory list. This Facility is subject to all terms and conditions specified in this plan approval. Nothing in this plan approval relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

The regulatory or statutory authority for each plan approval condition is set forth in brackets. All terms and conditions in this permit are federally enforceable unless otherwise designated as "State-Only" requirements.

Plan Approval No. 48-00003B

Federal Tax Id - Plant Code: 20-2268581-1

Owner Information

Name: KEYSTONE CEMENT CO

Mailing Address: ROUTE 329

PO BOX A

BATH, PA 18014

Plant Information

Plant: KEYSTONE PORTLAND CEMENT/EAST ALLEN

Location: 48 Northampton County

48915 East Allen Township

SIC Code: 3241 Manufacturing - Cement, Hydraulic

Responsible Official

Name: JOSE DE LA VEGA

Title: PLANT MANAGER

Phone: (610) 837 - 1881 Ext.2231

Plan Approval Contact Person

Name: JEFFERY W SMITH

Title: MANAGER, ENVIRONMENTAL CO

Phone: (610) 837 - 1881 Ext.3213

[Signature] _____

MARK J. WEJKSZNER, NORTHEAST REGION AIR PROGRAM MANAGER



Plan Approval Description

This plan approval supersedes plan approval 48-309-124 (Issued May 22, 2006) in its entirety.

The modernization project at Keystone Cement required that the PADEP Air Quality Program and the Waste Management Program issue permits for the project. As such several Waste Management Permit Conditions (Permit Number PAD002389559) were incorporated into the Air Quality Permit.

On May 7, 2014 the PADEP Waste Management issued a modification to the Waste Management Permit Issued to Keystone Cement. After discussion it was determined that the conditions pertaining to the Waste Management Permit be removed from the Air Quality Permit as they pertain to the WDLF as delivered and the Air Permit for the burning of WDLF is covered under 40 CFR 63 Subpart EEE.

Additionally this plan approval removes the 57,600 gallon per calendar day hazardous waste fuel feed rate as the facility. The purpose of removing this requirement from the previously issued permit is that the facility is required to comply with the most recent 40 CFR Part 63 Subpart EEE N.O. C. (Notification of Compliance) for the kiln and calciner.

Additionally, this plan approval does not change any monitoring, reporting, or recordkeeping conditions previously issued; it only reflects the change noted above and the removal of conditions pertaining to the Waste Management Permit Modification.



SECTION A. Table of Contents

Section A. Facility/Source Identification

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Plan Approval Inventory List

Section B. General Plan Approval Requirements

- #001 Definitions
- #002 Future Adoption of Requirements
- #003 Plan Approval Temporary Operation
- #004 Content of Applications
- #005 Public Records and Confidential Information
- #006 Plan Approval terms and conditions.
- #007 Transfer of Plan Approvals
- #008 Inspection and Entry
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Section C. Site Level Plan Approval Requirements

- C-I: Restrictions
- C-II: Testing Requirements
- C-III: Monitoring Requirements
- C-IV: Recordkeeping Requirements
- C-V: Reporting Requirements
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- C-VII: Additional Requirements
- C-VIII: Compliance Certification
- C-IX: Compliance Schedule

Section D. Source Level Plan Approval Requirements

- D-I: Restrictions
- D-II: Testing Requirements
- D-III: Monitoring Requirements
- D-IV: Recordkeeping Requirements
- D-V: Reporting Requirements
- D-VI: Work Practice Standards
- D-VII: Additional Requirements

Note: These same sub-sections are repeated for each source!

Section E. Source Group Restrictions

- E-I: Restrictions
- E-II: Testing Requirements
- E-III: Monitoring Requirements
- E-IV: Recordkeeping Requirements
- E-V: Reporting Requirements
- E-VI: Work Practice Standards
- E-VII: Additional Requirements

Section F. Alternative Operating Scenario(s)

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SECTION A. Table of Contents

- F-IV: Recordkeeping Requirements
- F-V: Reporting Requirements
- F-VI: Work Practice Standards
- F-VII: Additional Requirements


Section G. Emission Restriction Summary

Section H. Miscellaneous

Keystone Cement Compliance January 2022

EPA Enforcement & Compliance History Online Report

Facility Summary



KEYSTONE CEMENT CO
 RTE. 329, BATH, PA 18014
 ERS ID: 110000584332
 EPA Region: 03
 Latitude: 40.7159
 Longitude: -75.3985
 Locational Data Source: EIS
 Industries: Nonmetallic Mineral Product Manufacturing
 Indian Country: N

Related Reports

- [Enforcement Case Report](#)
- [Air Pollutant Report](#)
- [CWA Pollutant Loading Report](#)
- [CWA Effluent Charts](#)
- [EPA Facility Documents](#)
- [CWA Effluent Limit Exceedances Report](#)
- [View Envirofacts Reports](#)

Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs with NC (of 12)	Qtrs with Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CAA	2	05/04/2021	High Priority Violation	12	7	6	2	\$180,236	--	--
CWA	6	07/06/2021	Violation Identified	4	1	1	1	\$4,225	--	--
RCRA	4	09/20/2018	No Violation Identified	0	0	--	--	--	--	--

Regulatory Information

Clean Air Act (CAA): Operating Major (PA000478429)
 Clean Water Act (CWA): Minor, Permit Expired (PA0011517)
 Resource Conservation and Recovery Act (RCRA): Active LQG, Operating TSDF (PAD002389559), Inactive Other (PAD002290948)
 Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): 6582211
 Greenhouse Gas Emissions (eGGRT): No Information
 Toxic Releases (TRI): 18014KYSTNRT329
 Compliance and Emissions Data Reporting Interface (CEDRI): [CEDRI10064879](#)

[Go To Enforcement/Compliance Details](#)

[Known Data Problems](#)

Early in 2019 Keystone Cement addressed two Consent Assessment of Civil Penalties (CACPs)

The two Consent Assessment and Civil Penalties (CACPs) captured minor violations identified during an air inspection (i.e., fugitive dusting and a malfunctioning dust collector), a failed stack test for particulate matter (PM), and exceedances of short-term emissions standards for NOx, CO, SO2, and Particulate Matter (opacity/dust) accumulated over a four-year period.

Keystone self-reported these emissions standards exceedances quarterly to the Pennsylvania Department of Environmental Protection (PADEP).

The preponderance of the assessed penalties was related to exceedances of an obsolete short-term (i.e., hourly) NOx limit that could have been avoided with the timely issuance of a new Title V permit (to remove the short-term NOx limit no longer applicable) and Plan Approval for a NOx control system (i.e., Selective Non-Catalytic Reduction (SNCR)). Upon startup of the SNCR system in 2018, Keystone met both the obsolete NOx emissions limit (until its removal with the issuance of the Title V in 2019) and the RACT 2 emissions standard, and it continues to meet all of its emissions standards with minimal exceedances.

All cases have been resolved

NOV \$103,584
 NOV \$ 76,652
 Total Fine \$180,236 listed in EPA ECHO report



Permitted Waste Codes

Primary Waste Codes:

D001	F001	K014	K036	U001	U115
D018	F002	K015	K048	U002	U117
D035	F003	K016	K049	U004	U140
	F004	K017	K050	U009	U153
	F005	K018	K051	U012	U154
	K019	K052	U019	U159	
		K020	K083	U031	U161
		K022	K086 - solvent	U051	U169
		K023	washing only	U052	U171
		K025	K087	U055	U188
		K026	K156	U056	U194
		K028	K169	U057	U220
		K035	K170	U112	U239
				U113	

The following secondary waste codes are permitted when they are applicable due to the mixture or derived-from rule and are not substantial constituents of the waste:

D004	D014	D025	D036	U003	U162
D005	D015	D026	D037	U037	U165
D006	D016	D027	D038	U043	U196
D007	D017	D028	D039	U044	U210
D008	D019	D029	D040	U070	U211
D009	D020	D030	D041	U077	U213
D010	D021	D031	D042	U080	U226
D011	D022	D032	D043	U118	U227
D012	D023	D033		U121	U228
D013	D024	D034		U122	U359



Waste Acceptance Criteria

GRR-Keystone accepts hazardous waste liquids in bulk tankers only. The waste must meet the specifications below upon receipt.

Heat Content:	$\geq 5,000$ Btu/lb.
Total Halogens:	$< 3.0\%$
PCB's:	Not present
pH:	2.0 – 12.5
Specific Gravity:	0.6 – 1.2 @ 60° F
Viscosity:	$< 1,500$ cps @ 60° F $< 1,000$ cps @ 35° F
Organic Peroxide:	Not present
Ash:	20%
Compatibility:	Must pass compatibility test
Phases:	Consistent with Mod 1 Approval
Iodine:	$< 2\%$
Metals:	Arsenic (As) + Beryllium (Be) + Chromium (Cr) $\leq 1,120$ ppm (combined) Cadmium (Cd) + Lead (Pb) $< 3,500$ ppm (combined) Mercury (Hg) ≤ 10 ppm



WASTE ANALYSIS

Waste Analysis Plan

The Waste Analysis Plan contained in Keystone's RCRA Permit specifies the analyses that are to be performed on all incoming and outgoing materials. This ensures that incoming wastes are as profiled and are processed appropriately and with the necessary precautions. It also ensures that any outgoing materials are processed and packaged in such a way that they can be safely and effectively handled by the facilities to which they are being shipped. Keystone's lab is staffed with personnel highly and specifically trained in the analysis and handling of hazardous materials. Equipment used in the on-site lab includes a viscometer, pH meter, titrator, GC, iCAP, bomb calorimeter, mercury analyzer, and microwaves. The lab maintains detailed analytical records.

Prequalification Analysis

Waste streams under consideration are reviewed and approved by Keystone's Environmental Compliance and Health and Safety staff and by PADEP Module I. Prequalification analyses include the following: physical state, ignitability, corrosivity, reactivity, TCLP, halogens, density, heat content, pH, viscosity, unburnable residue, total metals, PCBs, total TCLP organics, total constituents by GC/MS, total organic halides, total solids, total volatile solids, settleable solids, vapor pressure, % water, organic peroxide, phases, and compatibility. These analyses are conducted by an outside lab.

Pre-Acceptance Analysis

Upon arrival of all shipments, the manifest and accompanying paperwork are reviewed for completeness, correctness, and consistency with previously submitted and approved waste profiles. Prior to acceptance and unloading, all shipments, both hazardous and non-hazardous, are analyzed in Keystone's on-site lab. 100% of incoming tankers are sampled using a modified COLIWASA technique to obtain a cross-sectional core sample. The truck waits at the unloading pad typically within secondary containment while the analysis is conducted. The analyses performed on each shipment include the following: physical state, density, viscosity, heat content, unburnable residue, pH, halogens, sulfur, total metals, PCBs, specific gravity, organic peroxide, phases, compatibility. Wastes may also be analyzed for iodine, arsenic, beryllium, chromium, cadmium, and lead. Once it has been verified that the material is as previously characterized and is appropriate for use as fuel in Keystone's cement production process, the shipment is accepted.

KILN FUELS WASTE MATERIAL PROFILE FORM (Continued)

Waste Profile Number _____

G. ADDITIONAL PROPERTIES

1. Is this waste a pumpable liquid? Yes No
2. Describe Viscosity: Low (Solvent) Medium (No. 2 Oil) High (No. 6 Oil)
3. Can this waste be heated to improve flow? Yes No
4. Is this waste soluble in water? Yes No
5. Particle Size: Will the solid portion of this waste pass through a 1/8 inch screen Yes No

H. TRANSPORTATION INFORMATION

1. Is this a DOT Hazardous Material? Yes No
2. Anticipated Annual Volume/Units _____
3. Proper Shipping Name: _____
4. Additional Description: (_____) _____
5. Hazard Class: _____
6. Packaging Group: _____
7. I.D. # _____
8. Method of shipment: Bulk truck Bulk Rail Car Other: _____
9. CERCLA Reportable Quantity (RQ): _____
10. RQ Units (lb./kg): _____
11. USEPA Hazardous Waste? Yes No
12. USEPA Hazardous Waste Number(s): _____
13. State Hazardous Waste? Yes No
14. State Hazardous Waste Number(s): _____

15. The following lists are approved hazardous waste code numbers that Keystone Cement Company is permitted to store and use as fuel. Circle which of the hazardous waste code numbers describes the waste detailed on this and all attached documents. A description of hazardous waste code numbers can be found in 25 Pa. Code 261a and 40 CFR Part 261.

Primary Hazardous Waste Code Numbers:

<u>D001</u>	<u>D018</u>	<u>D035</u>	<u>F001</u>	<u>F002</u>	<u>F003</u>
<u>F004</u>	<u>F005</u>	<u>K014</u>	<u>K015</u>	<u>K016</u>	<u>K017</u>
<u>K018</u>	<u>K019</u>	<u>K020</u>	<u>K022</u>	<u>K023</u>	<u>K025</u>
<u>K026</u>	<u>K028</u>	<u>K035</u>	<u>K036</u>	<u>K048</u>	<u>K049</u>
<u>K050</u>	<u>K051</u>	<u>K052</u>	<u>K083</u>	<u>K086</u> (Solvent washings only)	
<u>K087</u>	<u>K156</u>	<u>K169</u>	<u>K170</u>	<u>U001</u>	<u>U002</u>
<u>U004</u>	<u>U009</u>	<u>U012</u>	<u>U019</u>	<u>U031</u>	<u>U051</u>
<u>U052</u>	<u>U055</u>	<u>U056</u>	<u>U057</u>	<u>U112</u>	<u>U113</u>
<u>U115</u>	<u>U117</u>	<u>U140</u>	<u>U153</u>	<u>U154</u>	<u>U169</u>
<u>U161</u>	<u>U169</u>	<u>U171</u>	<u>U188</u>	<u>U194</u>	<u>U220</u>
<u>U239</u>					

Each primary hazardous waste code listed above may exhibit the following secondary hazardous waste code(s) for characteristics or commercial chemical products, manufacturing chemical intermediates, or off-specification commercial products.

Secondary Hazardous Waste Code Numbers:

<u>D004</u>	<u>D005</u>	<u>D006</u>	<u>D007</u>	<u>D008</u>	<u>D009</u>
<u>D010</u>	<u>D011</u>	<u>D019</u>	<u>D021</u>	<u>D022</u>	<u>D023</u>
<u>D024</u>	<u>D025</u>	<u>D026</u>	<u>D027</u>	<u>D028</u>	<u>D029</u>
<u>D030</u>	<u>D032</u>	<u>D033</u>	<u>D034</u>	<u>D036</u>	<u>D038</u>
<u>D039</u>	<u>D040</u>	<u>D043</u>	<u>U003</u>	<u>U037</u>	<u>U043</u>
<u>U044</u>	<u>U070</u>	<u>U077</u>	<u>U080</u>	<u>U118</u>	<u>U121</u>
<u>U122</u>	<u>U162</u>	<u>U165</u>	<u>U196</u>	<u>U210</u>	<u>U211</u>
<u>U213</u>	<u>U226</u>	<u>U227</u>	<u>U228</u>	<u>U359</u>	

These secondary U-coded wastes may only be accepted in accordance with the waste acceptance limit for chlorides found in Section J.

In addition to the secondary hazardous waste code numbers listed above, Keystone Cement Company is also permitted to store and use waste as fuel exhibiting the following Herbicide and Pesticide hazardous waste code numbers. Please note that a prolonged Module 1 application process and additional on-site waste screening will apply for wastes exhibiting any of the herbicide and pesticide hazardous waste code numbers listed below.

Secondary Herbicide and Pesticide Waste Code Numbers:*

<u>D012</u>	<u>D013</u>	<u>D014</u>	<u>D015</u>	<u>D016</u>	<u>D017</u>
<u>D020</u>	<u>D031</u>	<u>D037</u>	<u>D041</u>	<u>D042</u>	

*If the waste derived fuel does not contain any of the listed herbicide and pesticide hazardous waste code numbers, the herbicide and pesticide certification must be completed in section K.

KILN FUELS WASTE MATERIAL PROFILE FORM (Continued)

Waste Profile Number _____

I. SPECIAL HANDLING INFORMATION

Additional Page(s) Attached

J. KEYSTONE CEMENT COMPANY - WASTE DERIVED LIQUID FUEL ACCEPTANCE CRITERIA CERTIFICATION

Parameter	Acceptance Limit	Test Method	Test Method #
Arsenic (As)	≤100 ppm	SW846	3051/6010B
Beryllium (Be)	≤20 ppm	SW846	3051/6010B
Cadmium (Cd)	≤1,000 ppm	SW846	3051/6010B
Chromium (Cr)	≤1,000 ppm	SW846	3051/6010B
Nickel (Ni)	≤1,000 ppm	SW846	3051/6010B
Lead (Pb)	≤2,500 ppm	SW846	3051/6010B
Sulfur (S)	≤22,000 ppm	SW846	3051/6010B
Mercury (Hg)	≤10 ppm	SW846	3051/7470A
% Chloride (Cl)	≤3.00%	SW846	9253 (MOD)
PCB's	Not Present	SW846	3620B/8082
Heat Content	> 8,000 Btu/Lb	ASTM	E711 (MOD)
Peroxide	Not Present	Manufacturer Specs	EM Quant. Strips
pH	2.0 to 12.5 pH	SW846	9045C
Viscosity (CPS)	< 7,000 cps @ 60° F < 12,000 cps @ 35° F	Manufacturer Specs	Brookfield Viscometers
Specific Gravity	0.6 to 1.2 @ 60° F	ASTM	D5057 (MOD)
Compatibility	YES	ASTM	5058 (MOD)
Ash	< 20%	ASTM	3711 (MOD)
Iodine *	< 2%	--	--

* For any phase containing 25% or greater of the waste sample by volume and containing 75% or greater water content.

K. GENERATOR'S CERTIFICATION

I hereby certify that the information submitted in this and all attached documents provide a true and accurate description of this waste and satisfies all regulatory requirements. Any sample submitted is representative of the waste and has been obtained by a method defined in 40 CFR 261, Appendix I or by an equivalent method. All relevant information in my possession regarding known or suspected hazards has been disclosed. I certify waste derived liquid fuel shipped to Keystone Cement Company does not contain materials contaminated with PCBs, peroxides, and dioxin/furans, nor does it exhibit any hazardous waste code numbers not included in Section H. Furthermore, I have reviewed the waste derived fuel acceptance criteria for Keystone Cement Company, located in Section J, and I understand materials which do not meet the permit limits defined will not be accepted.

SIGNATURE

Printed (or typed) name and title

Date

I certify the waste derived liquid fuel shipped to Keystone Cement Company does not contain herbicides or pesticides identified as follows:

D012 – Endrin
D013 – Lindane
D014 – Methoxychlor
D015 – Toxaphene
D016 – 2,4 D
D017 – 2,4,5 TP Silvex

D020 - Chlorodane
D031 - Heptachlor
D037 - Pentachlorophenol
D041 – 2,4,5 Trichlorophenol
D042 – 2,4,6 Trichlorophenol

SIGNATURE

Printed (or typed) name and title

Date



ENVIRONMENTAL MANAGEMENT

Keystone has a comprehensive Environmental Management System tailored after ISO-14001. The system includes an environmental calendar, training, and an audit system. Keystone also operates under a RCRA Hazardous Waste Permit, National Pollutant Discharge Elimination System (NPDES) Permit, and an Air Permit. The RCRA Permit includes such components as a Waste Analysis Plan, a Training Plan, an Inspection Plan, and a Preparedness, Prevention, and Contingency (PPC) Plan. Keystone strictly adheres to these permits which establish guidelines for the safe and compliant management of the facility. The permits are revised and approved by regulatory personnel whenever there is a significant change in equipment, operations, or procedures.

Keystone is staffed with highly trained Environmental Compliance, Operations, and Health and Safety personnel who oversee compliance with the facility's permits and policies and safe operations at the site. These teams include on-site personnel and personnel based at the GCHI corporate Environmental Compliance department in Harleyville, SC, and GCHI corporate headquarters in Alexandria, VA.

The Environmental Policy for GCHI and its subsidiaries is on the following page. It summarizes the corporate goal of providing a workplace that protects the health and safety of our employees, the surrounding community, and the users of our services. In support of this policy, GRR has a number of individual policies in place that address specific issues such as:

Accident and Injury Investigation and Reporting
Behavior-based Safety (under development)
Confined Space Training and Safety
Drug and Alcohol Testing
Electrical Safety
Emergency Response
Employee Safety Orientation and Training
First Aid
Flammable and Combustible Liquids

General Plant Safety
Hazard Communication program
Job Safety Analysis
Lockout/Tagout Procedures
Medical Monitoring
Personal Protection Equipment
Root Cause Analysis
Safety Guidelines for Contractors
Substance Abuse
Vehicle Safety



SAFETY

Preparedness, Prevention, Contingency

The Preparedness, Prevention, and Contingency (PPC) Plan is a comprehensive explanation of the precautions and actions that are to be taken to minimize hazards to human health and the environment from fire, explosion, or any releases of hazardous waste or its constituents to the air, soil, or surface water. Areas covered in the Plan include the designations and responsibilities of Emergency Coordinators, a detailed description of when the Plan should be implemented, and specific emergency response procedures. All personnel receive training on the PPC Plan.

Keystone's PPC Plan stipulates the measures that are to be followed to prevent and respond to emergencies. The facility maintains emergency response equipment such as communication devices, spill control and decontamination equipment, and fire control equipment. The PPC Plan gives specific guidance on evaluating an emergency and determining the appropriate response, notifying on-site personnel of the nature of the emergency, contacting appropriate off-site emergency response personnel with whom Keystone has emergency response agreements, and notifying the appropriate outside agencies.

Keystone has an FM 200 system in the Control Room and a fire suppression system in all hazardous waste fuel areas, a sprinkler system in the carpenter shop, repair shop and oil house, and fire extinguishers throughout the plant according to NFPA and NEC regulations. All personnel are trained in the use of extinguishers annually. The East Allen Fire Company is the main responder to all emergencies with a response time of 12 minutes.

Keystone has informed the local police department, the East Allen fire department, and PA State Police of the conditions at the facility. Muhlenberg Hospital Center and St. Luke's Hospital have been familiarized with the facility. All of these groups have entered into emergency response agreements with Keystone. Their phone numbers are programmed into a special automatic dialing telephoning circuit.

PPE, Handling

Keystone's Part B Permit specifies the precautions to be taken in order to prevent exposure. The corporate Safety Officer determines the appropriate PPE for personnel based on the level of hazard present for each job title and associated duties, and in compliance with Keystone's Part B Permit, Keystone's Health and Safety Plan, and MSHA. In addition, as part of the pre-approval/prequalification screening process, the chemical constituents of each waste stream are reviewed and appropriate handling and required PPE are determined. Available PPE include chemical resistant gloves, Tyvek suits, respirators, safety-toe shoes, hard hats, safety glasses, hearing protection, and face shields.

Security

Keystone has an 8-ft fence around the RCRA-permitted storage facility with a locked entrance gate, video surveillance of entrance and tank farm, surveillance by supervisory personnel 24/7, warning signs at entrance and other locations. Visitors must be escorted by Keystone personnel.



Overview

Mine Information

Mine ID	: 3600125	Mined Material	: Cement
Mine Name	: Keystone Cement Company	Type of Mine	: Facility
Mine Status	: Active	Location	: Northampton, PENNSYLVANIA
Operator	: Keystone Cement Company	Address of Record	: 6507 Nor-Bath Blvd. Bath PA 18014

Fatals, NFDL Injuries and Injury Rates - Closed Years Data

Year	Mine ID	Fatal Operator Injuries	NFDL Operator Injuries	Fatal Contractor Injuries	NFDL Contractor Injuries	Operator Hours Worked	Operator Fatal Incidence Rate*	Operator NFDL Incidence Rate*	Mine Type National Fatal Incidence Rate*	Mine Type National NFDL Incidence Rate*
2020	3600125		1			270,044	0.00	0.74	0.0080	1.61
2019	3600125		2			275,939	0.00	1.45	0.0000	1.87
2018	3600125		1			272,501	0.00	0.73	0.0074	1.54
2017	3600125		1			265,588	0.00	0.75	0.0073	1.69
2016	3600125		2			243,244	0.00	1.64	0.0072	1.92
2015	3600125		2			253,119	0.00	1.58	0.0000	1.97
2014	3600125		1			259,892	0.00	0.77	0.0000	2.23
2013	3600125					194,439	0.00	0.00	0.0075	1.98
2012	3600125		1			248,704	0.00	0.80	0.0228	2.39
2011	3600125		1			288,550	0.00	0.69	0.0075	2.13
2010	3600125		3			265,972	0.00	2.26	0.0146	2.38
2009	3600125		4		3	335,612	0.00	2.38	0.0070	2.70
2008	3600125		2		7	396,245	0.00	1.01	0.0117	2.54

Note: Hours worked and accidents & injuries include office hours and accidents (Subunit 99). Quarterly employment, production and injury rate information will be available no earlier than 30 days after quarter closing.

Citations, Orders and Safeguards

Year	Mine ID	Operator	103(k)	104(a)	104(b)	104(d) (1)	104(d) (2)	104(g) (1)	107(a)	103(j)	314(b)	Proposed Penalties (\$)	Current Penalties (\$)	Amount Paid to Date (\$)
2021	3600125	Keystone Cement Company	0	14	0	0	0	0	0	0	0	2,661	2,661	1,680
2020	3600125	Keystone Cement Company	0	42	0	0	0	0	0	0	0	6,434	6,434	6,434
2019	3600125	Keystone Cement Company	0	16	0	0	0	0	0	0	0	9,857	9,857	9,857
2018	3600125	Keystone Cement Company	0	25	0	0	0	0	0	0	0	5,575	5,575	5,575
2017	3600125	Keystone Cement Company	0	54	0	0	0	0	1	0	0	48,456	45,925	45,925
2016	3600125	Keystone Cement Company	0	62	0	0	0	0	0	0	0	10,697	10,697	10,697
2015	3600125	Keystone Cement Company	0	5	0	0	0	0	0	0	0	500	500	500
2014	3600125	Keystone Cement Company	0	16	0	0	0	0	0	0	0	2,183	2,183	2,183
2013	3600125	Keystone Cement Company	0	37	0	0	0	1	0	0	0	11,424	11,056	11,056
2012	3600125	Keystone Cement Company	0	37	0	0	0	0	0	0	0	26,963	24,773	24,773
2011	3600125	Keystone Cement Company	0	10	0	0	0	0	0	0	0	3,736	3,736	3,736
2010	3600125	Keystone Cement Company	0	20	0	0	0	0	0	0	0	6,220	6,220	6,220
2009	3600125	Keystone Cement Company	0	70	0	0	0	0	2	0	0	82,671	75,955	75,955
2008	3600125	Keystone Cement Company	0	4	0	0	0	0	0	0	0	427	427	427
2007	3600125	Keystone Cement Company	0	12	0	0	0	0	0	0	0	3,371	3,371	3,371

Note: Quarterly employment, production and injury rate information will be available no earlier than 30 days after quarter closing

The information provided by the Mine Data Retrieval System (MDRS) is based on data gathered from various MSHA systems. There is a delay of 30 days for the data shown on this page. Vacated Citations are not included in any reports on the MDRS.



TRAINING

Keystone's training program complies with MSHA and with Keystone's RCRA Part B Permit. All Keystone personnel receive training in both safety and manufacturing. The RCRA permit includes a Training Plan which describes how employees are prepared to operate and maintain the facility in a safe manner and in accordance with applicable law and regulation and to respond to emergencies effectively. The training program includes both introductory and continuing training. In addition, safety meetings are held monthly. Keystone maintains complete documentation of all training.

Prior to full unsupervised assumption of job duties, each new employee must complete the initial training program. The comprehensive training program is designed to be completed within six months of employment or assignment to the facility. Employees who work with hazardous waste are trained in accordance with the OSHA HAZWOPER program, receiving 40 hours of initial training and 8 hours of refresher training annually. Though not regulated by OSHA, Keystone follows the OSHA program for hazardous waste workers since MSHA does not have a similar program. Other Keystone employees who do not work with hazardous waste complete 24 hours of MSHA New Miner Training initially followed by 8 hours of refresher training annually.

All facility personnel are trained in areas critical to their job. Some of the training topics are facility orientation, RCRA overview, contingency plan implementation, HAZCOM, hazardous properties of waste, security, container management, protective equipment, facility inspections, recordkeeping, leak detection and repair, waste sampling and analysis, and aerosol/non-aerosol equipment operation. Refresher training is conducted annually and more frequently as needed to address new regulations, safety issues, process changes, etc.



Storage, Operations

Loading/Unloading Areas

The waste unloading areas are within secondary containment consisting of curbed concrete flooring with a chemical resistant coating. The containment volumes of the unloading areas have been designed to provide sufficient containment of any accidental spill or leak and contain the contents of an entire tanker truck.

Storage and Processing Areas

Storage tanks are located within sealed secondary containment consisting of coated concrete floor with a sealed secondary containment wall capable of holding the entire contents of the largest tank plus the collected rainfall from a 25-year, 24-hour storm event. All tanks are above ground and located within sealed secondary containment. Tanks are nitrogen-blanketed and agitated. Residual waste drums are also stored in secondary containment.

Rainwater

Any rainwater that accumulates in the containment area is pumped to a water storage silo within 24 hours. Rainwater from multiple events is added to the silo until it is close to full. At that point, the water is analyzed for waste constituents and the entire tank of water is deemed non-hazardous or hazardous. Non-hazardous water is pumped into the process water system for use in the raw slurry. Hazardous water is disposed of off-site. All containment areas are sloped to sumps to facilitate the collection and removal of any spilled materials and rainwater.

Residuals Management

Unblendable residue and tank bottoms are drummed, stored in secondary containment, and sent off-site for further processing, fuel blending, and/or solvent reclamation. Spent carbon is drummed and shipped off-site for carbon reclamation. Cement kiln dust is recycled back into the product.



INSPECTIONS

Daily, weekly, monthly, and annual inspections are conducted by on-site personnel in compliance with the Inspection Plan contained in Keystone's RCRA permit. With regard to the tank farm, the following are performed: leak detection inspections in compliance with Subpart BB, tank controls inspections in compliance with Subpart CC, and annual tank thickness inspections in compliance with the RCRA permit. Fire equipment is inspected monthly per the Fire Code and in accordance with the facility's RCRA permit. In addition, monthly, quarterly, and semi-annual inspections are performed by corporate health and safety, industrial hygiene, and environmental compliance personnel.

Keystone participates in regular as well as unannounced environmental compliance audits by state and federal regulatory authorities responsible for RCRA compliance, air quality, and NPDES monitoring. Outside consultants are also contracted to inspect the facility from time to time. GRR's insurance carriers may also perform inspections.

All inspections and follow-up are documented.



CLOSURE PLAN

In accordance with RCRA, Keystone's permit contains a Closure Plan that addresses the applicable requirements for the types of waste processing and storage and treatment facilities at this location. This includes:

- 1) Removal and/or processing and disposing of wastes from storage areas and the BIF facility
- 2) Decontamination of plant equipment and processing facility
- 3) Inspection of tanks/containers and processing and storage facilities for any hazardous residue
- 4) Certification of completion of Closure by Keystone and by an independent registered professional engineer



KEYSTONE CEMENT COMPANY

ROUTE 329, P.O. BOX A, BATH, PA 18014-0058 TELEPHONE (610) 837-1881 / (800) 523-5442

VIA OVERNIGHT MAIL

January 23, 2017

Ms. Tammy Jefferson
Bonding Section
Division of Contracts, Procurement & Bonding
PA Department of Environmental Protection
15th Floor, 400 Market Street
Harrisburg, PA 17105

**RE: Keystone Cement Company
Bureau of Waste Management
Permit No. PAD 002 389 559
Collateral Bond Forms**

Dear Ms. Jefferson:

Please find attached the completed and executed Collateral Bond forms for Keystone's Letter of Credit (LOC) #IS0269219U in the amount of **\$713,132.00** from Wells Fargo Bank. The original Letter of Credit has been sent to the Department by Wells Fargo Bank via Federal Express, tracking number 785311197444.

If there are questions, please contact me at (803) 496-2282.

Sincerely,

Alicia Lee, Technical Assistant
GCHI Corporate Environmental Department

cc: w/attachments: Stephen Holt
Beth Lipka
Scott McGoldrick
Fernando Robledo
Carlos Ramos



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared

I.D. Number

1/23/2017

PAD 002 389 559

COLLATERAL BOND
For a Waste Management Facility

To be completed by Permittee/Operator:

Name of Facility: Keystone Cement Company

Address: P.O. Box A

Bath, PA 18014

Municipality: East Allen Township

County: Northampton

Department Use Only:

Solid Waste Permit No.: _____

Date of Permit Issuance: _____

Permit Acreage: _____

Type of Facility: Check one:

- Hazardous
- Municipal
- Residual
- Other (describe) _____
(Describe facility type/activity)

Purpose: Check one:

- (1) Operation and Closure of a Waste Management Facility
 - (a) Initial Bond
 - (b) Repermit of Existing Facility
 - (c) Additional Bond
 - (d) Replacement Bond
 - (e) Change of Ownership
 - (f) Application for Mobile Processing facility permit
- (2) Closure of a Waste Management Facility

WHEREAS, Keystone Cement Company, (1) Corporation,
(Name of Permittee, or Operator)

incorporated under the Laws in the State of Pennsylvania

or (2) _____, with its principal place of
(Individual, Limited Liability Company, Limited/General Partnership, Registered Fictitious Name Business)

business at Route #329, Bath, PA 18014,
(Address)

or (3) _____ has (1) filed application for permit(s); or (2) executed
(municipality or municipal authority)

a _____ (hereinafter "agreement") dated _____
(Consent agreement/consent decree/consent adjudication) (date of agreement)

with the Commonwealth of Pennsylvania, Department of Environmental Protection (hereinafter referred to as the "Department"), or (3) has been ordered by the Department, under the provisions of the "Pennsylvania Solid Waste Management Act", Act of July 7, 1980, No. 97, as amended (hereinafter "Act 97") for the purpose, as indicated above of either (1) the operation and closure or (2) closure of a waste management facility which will affect 10
(Acreage to be Under Permit or as Referenced by Order/Agreement, etc)

acres of land owned by Keystone Cement Company _____ in
(Name of Landowner)

East Allen Township _____
(Name of Municipality)

Northampton _____ County, Pennsylvania (hereinafter referred to as "facility").
(Name of County)

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS that the, Keystone Cement Company _____
Name of Permittee/Operator)

_____, (hereinafter "Operator"), and intending to be legally bound hereby, is held and firmly bound unto the Department, in the just and full sum of Seven Hundred Thirteen Thousand, One Hundred, Thirty-two Dollars and 00/100
(Written Dollar Amount)

(\$ 713,132.00) Dollars, to the payment whereof, well and truly to be made, the Operator does hereby bind
(Numerical Dollar Amount)

Its _____ heirs, executors, administrators, assigns and successors, firmly by these presents:
(his, her or its)

NOW THE CONDITION OF THIS OBLIGATION is such that if the operator shall faithfully perform all of the requirements of (1) the Act of Assembly approved July 7, 1980, P.L. 380, known as the "Solid Waste Management Act"; (2) the Act of Assembly approved June 22, 1937, P.L. 1987, as amended, known as "The Clean Streams Law"; (3) the Act of Assembly approved January 8, 1960, P.L. 2119, as amended, known as the "Air Pollution Control Act"; (4) the applicable provisions of the Act of Assembly approved November 26, 1978, P.L. 1375, as amended known as the "Dam Safety and Encroachments Act"; (5) the applicable provisions of the Act of Assembly approved May 31, 1945, P.L. 1198, as amended, known as the "Surface Mining Conservation and Reclamation Act"; (6) the Act of Assembly approved July 28, 1988, P.L. 556, known as the "Municipal Waste Planning, Recycling and Waste Reduction Act."; (7) the rules and regulations promulgated thereunder; (8) the provisions and conditions of the permits issued thereunder and designated in this bond; (9) any agreement with or order of the Department; and, (10) such amendments or additions to the acts, regulations, terms and conditions of the permits, and orders of the Department as may hereinafter be lawfully made (all of

ACKNOWLEDGEMENT

COMMONWEALTH / STATE OF Pennsylvania :
COUNTY OF Northampton : SS

[Operator – please complete only A. or B. and this document must be notarized]

A. TO BE USED BY AN OPERATOR THAT IS A CORPORATION, PARTNERSHIP OR LIMITED LIABILITY COMPANY

On January 23, 2017 (Date), Stephen P. Holt (Name) [and]

Fernando Robledo, personally appeared before me, and identified (Name) (himself, and/or herself or themselves – **please CIRCLE what is accurate**) as the

Vice President [and Treasurer, respectively,] (Title) (Title)

of Keystone Cement Company (Name of Operator – must be identical to Operator identified in Bond)

Each affiant stated that, in accordance with (1) [the bylaws of the corporation] [the partnership agreement] [the Operating Agreement of the LLC or the LLP] (please **CIRCLE ONE AND ONLY ONE**) and (2) any other documents applicable to authority to sign the attached Bond, the affiant was authorized to sign the attached Bond on behalf of the Operator.

B. TO BE USED BY AN OPERATOR THAT IS AN INDIVIDUAL

On _____ (Date), _____ (Name)

personally appeared before me, and acknowledged that he or she executed the attached Bond for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

(SEAL)  Alicia Lee (Notary Public Signature)

My Commission Expires: September 22, 2024 (Date)

Wells Fargo Bank, N.A.
U.S. Trade Services
Standby Letters of Credit
401 N. Research Pkwy, 1st Floor
MAC D4004-017,
Winston-Salem, NC 27101-4157
Phone: 1(800) 776-3862 Option 2
E-Mail: sbic-new@wellsfargo.com

**Amendment To
Irrevocable Standby Letter Of Credit**

Number : IS0269219U
Amendment Number : 003
Amend Date : January 13, 2017

BENEFICIARY

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT, BONDING
SECTION - 15TH FLOOR
RACHEL CARSON, STATE OFFICE BUILDING
400 MARKET STREET
HARRISBURG, PENNSYLVANIA 17105

APPLICANT

KEYSTONE CEMENT COMPANY
1600 DUKE STREET, SUITE 400
ALEXANDRIA, VIRGINIA 22314

LADIES AND GENTLEMEN:

AT THE REQUEST AND FOR THE ACCOUNT OF THE ABOVE REFERENCED APPLICANT, WE HEREBY AMEND OUR IRREVOCABLE STANDBY LETTER OF CREDIT (THE "WELLS CREDIT") IN YOUR FAVOR AS FOLLOWS:

THE CURRENT AVAILABLE AMOUNT IS INCREASED BY USD 10,194.00 TO USD 713,132.00 .

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

THIS AMENDMENT IS TO BE ATTACHED TO THE ORIGINAL WELLS CREDIT AND IS AN INTEGRAL PART THEREOF.

Very Truly Yours,

WELLS FARGO BANK, N.A.

By: _____
Authorized Signature

The original of the Letter of Credit contains an embossed seal over the Authorized Signature.



Giant Resource Recovery, Inc.

Keystone Cement Company / Route 329, P.O. Box A, Bath, PA 18014
(610) 837-1881 / Fax (610) 837-2313 / 888-Grr-GCHI /
www.giantresourcerecovery.com

RE: INSURANCE COVERAGE – Giant Resource Recovery-Keystone Cement Company (GRR)

To Whom it May Concern:

Please be advised that Keystone Cement Company works with insurance brokers to maintain a comprehensive property and casualty insurance program utilizing insurance markets in the United States. We maintain coverage for general, automobile, worker's compensation, environmental sites, excess and damage to our property. Our limits and retentions are consistent with a company of GRR's relative size.

Questions pertaining to this letter of insurance coverage can be directed to my attention.

Sincerely,

Art Weber
Keystone Sales Manager
arweber@gchi.com