

**SPECIAL CONDITIONS
BENEFICIAL USE PERMIT NO. WMGR003**

1. The approval herein granted is limited to the beneficial use, as construction material, of spent fired, “ceramic” wastes (i.e., colloidal silica) generated from the lost wax casting process by a ferrous metal foundry (Standard Industrial Classification Code 3324). Use of the ceramic waste as a substitute for a commercial product is contingent on its having the same engineering characteristics as the raw material for which it is being substituted. Approval is given to use the ceramic waste as an aggregate, road base material or pipe bedding material provided it meets the physical, chemical, soundness, plasticity, durability and grading requirements of the requirements of the current edition of the applicable American Society for Testing and Materials (ASTM) standard or Pennsylvania Department of Transportation (PennDot) specifications, as set forth in Appendix A, Condition A1.

2. The ceramic wastes shall not be beneficially used as an aggregate, pipe bedding material or otherwise placed directly into the environment if the levels in Table I and Table II are exceeded. The ceramic waste shall not be used as a component or ingredient in concrete, bituminous asphalt or other similar products if the levels in Table III are exceeded in a leaching analysis of the final product.

Constituent	<u>Table I</u> Total (mg/kg)	<u>Table II*</u> Leachable (mg/L)	<u>Table III*</u> Leachable (mg/L)
Boron	1000	3.15	—
Cadmium	20	0.125	0.125
Chromium (Total)	1000	2.5	2.5
Chromium (Hexavalent)	94	—	—
Fluoride	—	4.0	2.0
Iron	—	7.5	7.5
Lead	200	1.25	1.25
Manganese	—	1.25	1.25
Nickel	200	17.5	17.5
pH	5.5 to 9.5	—	—
Zinc	1000	125.0	125.0

* Leachability evaluations, using the Toxicity Characteristic Leaching Procedure (EPA method 1311) or the Synthetic Precipitation Leaching Procedure (EPA method 1312), shall be conducted on a representative sample of the ceramic waste or the construction material to its general use.

The above determinations may be based on the 90 percent upper confidence level for each metal or the 80 percent confidence interval for pH using the Test Methods for Evaluating Solid Waste (EPA SW-846) as guidance for the statistical treatment of data.

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The chemical analysis required in this Condition shall be performed by a laboratory accredited or registered for accreditation under the Pennsylvania Environmental Laboratory Accreditation Act, Act of 2002, No. 25.

3. The permittee shall inform each person who purchases or otherwise obtains any quantity of ceramic waste for use of all the conditions and limitations imposed on the use of the ceramic waste, including identification of the ceramic wastes which are applicable to each use, by the Department of Environmental Resources. This notification shall be by providing a copy of Appendix "A" (Use Restrictions) of this permit. The conditions in Appendix A apply to all permittees and all users of the ceramic waste. The permittee shall record the name, address and type of beneficial use for each person to which this notification is provided and shall include this information in the annual report required in Condition 9.
4. Equipment used for the storage of ceramic waste shall be maintained in good operating condition to prevent wastes from being unintentionally conveyed out of the storage area. Weekly inspections of each storage area and its surrounding environs shall be conducted to determine stability, and for evidence of failure.
5. A plan for the alternative storage of the ceramic waste, during periods of emergencies, shall be developed and retained at the site of waste generation.
6. Upon cessation of operation, the permittee shall remove any remaining ceramic wastes and any other residual wastes or other materials which contain or have been contaminated by the ceramic wastes and shall provide for the disposal of the waste or material in accordance with the Solid Waste Management Act, the environmental protection acts and the regulations promulgated thereunder.
7. The permittee shall immediately notify the Department's Bureau of Land Recycling and Waste Management, Division of Municipal and Residual Waste, P.O. Box 8472, Harrisburg, PA 17105-847, in writing, of any changes in: the name, address, owners, operators, and/or responsible officials of the company; changes in facility location; changes in land ownership or the right to operate on the land occupied; the physical or chemical characteristics of the ceramic waste; the manufacturing process which generates the waste; and any change in the status of any permit issued by the Department or federal government under the environmental protection acts.
8. Records of all analytical evaluations conducted on the ceramic waste shall be retained and made available to the Department on request. Waste analysis information is to be retained for a minimum of 5 years and is to include: the dates on sampling and testing, sampling procedures, person collecting the sample, the volume or weight of the sample, each parameter tested, the results, the laboratory used, sampling procedures and analytical methodologies.

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9. All permittees shall submit to the Department's Bureau of Land Recycling and Waste (See address in Condition 7) and the appropriate Department Regional Office, an annual report which contains the information outlined in Condition 3 and 7, and summarizes the weight or volume of the ceramic waste to be used for beneficial purposes. The annual report, due on the anniversary date that the permit became applicable to a permittee, must also include one of the following:
- a. For each source of ceramic waste, an analysis performed within the last year that has been conducted on a representative sample of the ceramic waste for all the parameters listed in Table I and Table II of Condition 2;
 - b. For each source of ceramic waste, a copy of the ceramic waste generator's analysis that includes the parameters listed in Table I and Table II of Condition 2, and that is not more than one year old;
 - c. For each source of ceramic waste that has previously been analyzed by the generator of the waste for the parameters listed in Table I and Table II of Condition 2, a signed certification that is not more than one year old and states that the physical and chemical properties of the waste have not changed.

In addition to the above reporting requirements, for any construction materials that use the ceramic waste as a component or ingredient and that were not included in the submission of the previous annual report, a copy of the analysis results, performed within the last year, required in Table III of Condition 2.

10. The permittee shall comply with the fugitive emissions regulations under Title 25 Pa. Code, Chapter 123 (Standards for Contaminants) issued under the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, 35 P.S. §4005 and shall comply with all the applicable provisions of 25 Pa. Code §§123.1 and 123.2 (relating to fugitive emissions).
11. Nothing in this permit shall be construed to supersede, amend, or authorize a violation of any of the provisions of any valid and applicable local law, ordinance, or regulation, providing that said local law, ordinance, or regulation is not preempted by the Pennsylvania Solid Waste Management Act, 35 P.S. §6018.101 et seq. or the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988, 53 P.S. §4000.101 et seq.
12. The activities authorized by this permit shall not harm or present a threat of harm to the health, safety or welfare of the people or environment of this Commonwealth. The Department may modify, suspend, revoke and reissue the authorization granted in this permit if it deems necessary to prevent harm or the threat of harm to the public health, or the environment.

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13. The permittee shall comply with the terms and conditions of this general permit and with the environmental protection acts to the same extent as if the activities were covered by an individual permit. The Department may require an individual permit be obtained if the permittee does not comply with the conditions of this general permit or is conducting an activity that harms or presents a threat of harm to the health, safety or welfare of the people or the environment.
14. Persons or municipalities which propose to operate under the terms and conditions of this general permit, after the date of permit issuance, must obtain a "Determination of Applicability" from the Department's Bureau of Land Recycling and Waste Management (See address in Condition 7). No activities shall commence unless specifically authorized by the Department in writing.

As a minimum, the following information must be provided on forms available from the Department's Bureau of Land Recycling and Waste Management (See address in Condition 7):

- a. Name and street address of applicant.
- b. A chemical and physical analysis, description of the waste which fully characterizes its composition and properties; the waste generation process; and a plan for screening, managing and rejecting incoming waste. The chemical analysis required in this Condition shall be performed by a laboratory accredited or registered for accreditation under the Pennsylvania Environmental Laboratory Accreditation Act, Act of 2002, No. 25.
- c. Name and location of the generator of the waste.
- d. Description of method of processing and/or beneficial use.
- e. Number and title of general permit.
- f. Proof that the waste and waste management activities are consistent with the general permit.
- g. Signed and notarized statement by the person, who seeks authorization to operate under the terms and conditions of this permit, which states that the person accepts all conditions of this general permit.
- h. An application fee in the amount as specified in the residual waste regulations, payable to the "Commonwealth of Pennsylvania".

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- i. Proof that copies of the application have been submitted to each municipality, county, county planning agency and county health department in which beneficial use activities are or will be located.
 - j. Proof that the applicant has legal right to enter the land and operate the facilities approved under this permit.
 - k. An irrevocable written consent from the landowner giving the Department permission to enter upon land where the applicant will be conducting waste management activities.
 - l. Information which identifies the applicant (i.e., individual, corporation, partnership, government agency, association, etc.), including the names and addresses of every officer who has a beneficial interest in or otherwise controls the operation of the company.
 - m. A list of all previous permits or licenses issued by the Department or Federal government under the environmental protection acts; the dates issued, status and compliance history concerning environmental protection acts.
15. Any independent contractors or agents retained by the permittee in the completion of activities authorized under this general permit shall be subject to compliance history review by the Department prior to performance as specified by the Solid Waste Management Act of 1980, as amended.
16. Failure of measures herein approved to perform as intended, or as designed, or in compliance with the applicable laws, rules, and regulations and terms and conditions of this general permit, for any reason, shall be grounds for the revocation or suspension of the permittee's approval to operate under this general permit.
17. All activities conducted under the authorization granted in this general permit shall be managed in accordance with the permittee's application. Except to the extent the permit states otherwise, the permittee shall operate as described in the permit application.
18. This general permit does not authorize and shall not be construed as an approval to discharge any industrial wastes or wastewater to the waters of the Commonwealth. Any treatment of leachate and wash water, or other wastewater shall be managed at a treatment facility that is operated and in compliance with the Clean Streams Law and the regulations promulgated hereunder.
19. As a condition of this permit and of the permittee's authority to conduct the activities authorized by this permit, the permittee and persons beneficially using the ceramic waste hereby authorize and consent to allow authorized employees or agents of the Department, without advance notice or search warrant, upon presentation of appropriate credentials and

without delay, to have access to and to inspect all areas on which solid waste management activities are being, will be, or have been conducted. This authorization and consent shall include consent to collect samples of waste, soils, water, or gases; to take photographs; to perform measurements, surveys, and other tests; inspect any monitoring equipment; to inspect the methods of operation; and to inspect and/or copy documents, books, and papers required by the Department to be maintained or produced [See §§608 and 610 (7) of the Solid Waste Management Act, 35 P.S. §6018.610 (7)]. This condition in no way limits any other powers granted to the Department under the Solid Waste Management Act.

**APPENDIX “A”
USE RESTRICTITONS
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The following restrictions apply to the beneficial use of the ceramic waste (i.e., colloidal silica) generated from the lost wax casting process by a ferrous metal foundry (Standard Industrial Classification Code 3324) for use as an aggregate, road base material, or pipe bedding material. Persons storing and/or using the ceramic waste for beneficial use purposes shall comply with the following requirements:

ACCEPTABLE USES:

A1. Approval is limited to use of the ceramic waste as an aggregate, road bed material, or pipe bedding material provided its use satisfies the following standards:

I. As an aggregate:

For general use:

- a. Pennsylvania Department of Transportation (PennDot), Publication 408 (Specifications), Section 703 (Aggregates).

As a component or ingredient:

- a. American Society of Testing and Materials Standards (ASTM):
- (a) C 33 - Specification for Concrete Aggregate.
 - (b) C 144 - Specification for Aggregate for Masonry Mortar.
 - (c) C 331 - Specification for Lightweight Aggregates for Concrete Masonry Units.
 - (d) C 332 - Specification for Lightweight Aggregates for Insulating Concrete.

II. As a roadbed material:

- a. Pennsylvania Department of Transportation, Publication 408 (Specifications), Sections:

210 (Subgrade)
300 (Base Courses)
400 (Flexible Pavements)
500 (Rigid Pavements)

III. As a pipe bedding material:

- a. Pennsylvania Department of Transportation, Publication 408 (Specifications), Section 610 (Pipe Undergrain and pavement base drain), Subsection (b) (Aggregates).

APPENDIX "A"
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A2. The use of ceramic waste for these practices is limited to an amount that is customarily and commonly appropriate in practice.

Use Restrictions:

A3. The ceramic waste shall not be used as a valley fill material, to fill open pits from coal or other fills, or to level an area or bring an area to grade where a construction activity is not completed promptly after the placement of the solid waste. Ceramic wastes shall not be used as aggregate in any mixture used to close boreholes or seal water wells which penetrate into waters of the Commonwealth. The ceramic waste material is not to be used in any construction activity within 100 feet of a perennial stream, 300 feet of an exceptional value wetland, or 300 feet of a private or public water source.

A4. The ceramic wastes shall not be mixed with other solid waste including: hazardous waste, municipal waste, municipal special handling waste, and other residual waste.

A5. The ceramic wastes shall not be stored for more than one (1) year unless specifically approved by the Department in writing.

A6. The storage, transportation or use of the ceramic wastes shall be in a manner which will not create a nuisance or be harmful to the public health, safety or the environment.

A7. Ceramic wastes may not be stored or placed in direct contact with groundwater or surface water.

A8. Runoff from the ceramic waste storage areas shall not cause surface water pollution or groundwater degradation and shall be managed in accordance with The Clean Streams Law and regulations promulgated thereunder.