

Effective Date: March 31, 2017
Expiration Date: March 31, 2022

(3/2/17 Draft)

OHIO ENVIRONMENTAL PROTECTION AGENCY

GENERAL PERMIT AUTHORIZATION TO BENEFICIALLY USE FOUNDRY SAND FROM IRON, STEEL AND ALUMINUM FOUNDRIES FOR ROAD CONSTRUCTION SUB-BASE, AS A COMPONENT IN STRUCTURAL FILL, AND AS PIPE BEDDING

Upon receipt of written notification from the Director of the Ohio Environmental Protection Agency (Director) that coverage is granted, the Applicant, as defined in Section B of this Permit, is authorized by the Director to beneficially use foundry sand in accordance with the conditions specified in this Permit and applicable provisions of Ohio Administrative Code (OAC) Chapter 3745-599. Only foundry sand as defined in Section B of this Permit and as identified in the Applicant's Notice of Intent (NOI) is authorized under this Permit for beneficial use by placement on land for road construction sub-base, as a component in structural fill, and as pipe bedding. All other beneficial uses of foundry sand must be separately approved by the Director.

Foundry sand is an industrial byproduct generated by the metal-casting industry. Foundry sand generated by iron (gray and ductile), steel, and aluminum foundries using silica sand with chemical or clay binders can be beneficially used for road construction sub-base, as a component in structural fill, and as pipe bedding.

Coverage under this Permit may be granted only upon payment of applicable fees, submittal of a complete and accurate NOI, a sampling plan, and an analysis demonstrating eligibility of the foundry sand for beneficial use under this Permit. Permit coverage does not become effective until the Permittee receives written notification from the Director that coverage is granted.

Coverage under this Permit shall expire at midnight on this Permit's expiration date. A Permittee may continue activities authorized by this Permit beyond the date of expiration, only as provided in OAC Rule 3745-599-220(G).

Pursuant to the authority of the Director under Ohio Revised Code (ORC) Chapters 6111 and 3734 and OAC Chapter 3745-599, any coverage granted under this Permit is subject to compliance with applicable provisions of OAC Chapter 3745-599 and all terms and conditions contained within this Permit. The Permittee's beneficial use of foundry sand in accordance with this Permit and in compliance with OAC Chapter 3745-599 and other applicable laws is unlikely to adversely impact the public health or safety or the environment.

Coverage under this Permit does not relieve the Permittee of the duty to comply with all applicable federal, state, and local laws, ordinances, and regulations. Nothing herein shall be construed to release any person, including but not limited to the owner(s) of property upon which the foundry sand is placed on land, from the obligation to comply with all applicable laws governing the placement or use of the foundry sand on the property.

Craig W. Butler
Director

A. Description and Eligibility Requirements

1. This Permit authorizes the beneficial use of foundry sand by placement on the land for road construction sub-base, as a component in structural fill, and as pipe bedding.
2. Only foundry sand that meets all of the following criteria is eligible for beneficial use under this Permit:
 - a. The foundry sand conforms to the definition in Section B of this Permit;
 - b. The foundry sand does not contain constituents that exceed any of the limits specified in Table 1 of this Permit (Table 1);
 - c. The foundry sand is not a hazardous waste under OAC Rule 3745-51-03.
3. For the purposes of this Permit, foundry sand that satisfies the constituent concentration limits set forth in Table 1 of this Permit is a beneficial use byproduct as defined in OAC Rule 3745-599-02(B)(2).
4. An applicant may apply for another General Permit in accordance with OAC Rule 3745-599-200 or an individual beneficial use permit in accordance with OAC Rule 3745-599-310 for beneficial use of foundry sand not eligible for coverage under this General Permit.

B. Definitions

OAC Rule 3745-599-02 contains definitions applicable to the Beneficial Use OAC Chapter 3745-599 and this Permit. The following definitions are specific to this Permit.

“Applicant” means the person applying for coverage under this Permit.

“Chemical binder” means bonding agents in core sand and molding sand. Chemical binders include Alkyd Oil, Acrylic/Epoxy/SO₂, Furan Hotbox, Furan Nobake, Furan/SO₂, Furan Warmbox, Phenolic Baking, Phenolic Ester Nobake, Phenolic Ester Coldbox, Phenolic CO₂, Phenolic Hotbox, Phenolic Nobake-Acid Catalyzed, Phenolic Novolac Flake-Resin Coated Sand, Phenolic Urethane, Phenolic Urethane Coldbox, and sodium silicate. Chemical binders are typically used when it is important for the sand to maintain strength during handling and pouring, but have the ability to collapse once the casing has solidified.

“Clay binder” is either bentonite clay (montmorillonite) or fireclay (kaolinite) that is used as a bonding agent for green sand in the metal casting industry. Green sands typically contain five percent to twelve percent clay binder based on the weight of the sand.

“Foundry sand” means silica sand and binders from sand molds and cores that have been through the production process from foundries that use iron (gray and ductile), steel, and aluminum metals, and either can no longer be reused to cast products, or are in excess of the existing sand system storage capacity.

“Notice of Intent” (NOI) means the form used to request coverage under a beneficial use general permit.

“Permittee” means an applicant who has been granted coverage under this Permit.

“Pipe Bedding” means an aggregate material placed under and around pipes to provide equal support along the length of pipe installed underground in a trench.

“Structural fill” means a screened material used to create a stable base meeting engineering specifications for use as engineered fill, mechanically stabilized earthen (MSE) walls, or granular fill. This does not include filling of limestone or sandstone quarries, gravel pits, valleys, open pits or other industrial mineral mining excavations.

C. Application Requirements

1. Prior to submission of an NOI, the Applicant shall develop and implement a sampling plan in accordance with Section C.4, determine the concentration of the constituents listed in Table 1 (results of sampling analysis), and perform a statistical evaluation of the sampling analysis, for the foundry sand from each generator from which the Applicant intends to obtain foundry sand for beneficial use under this Permit.
2. To obtain coverage under this Permit, an Applicant shall, in accordance with OAC Rule 3745-599-210, submit an application package to the Director containing the following:
 - a. One copy of a complete and accurate NOI on a form provided by the Director. Each NOI form shall be signed by the Applicant;
 - b. The sampling plan developed and implemented in accordance with Section C.4 for the foundry sand from each generator from which the Applicant intends to obtain foundry sand for beneficial use under this Permit;
 - c. The results of the sampling analysis and the statistical evaluation of the sampling analysis performed in accordance with the sampling plan for the foundry sand from each generator from which the Applicant intends to obtain foundry sand for beneficial use under this Permit; and
 - d. The application fee of \$200.
3. The application package shall be submitted to the following address:

Ohio Environmental Protection Agency
Division of Materials and Waste Management
Attn: Beneficial Use Unit
P.O. Box 1049
Columbus, Ohio 43216-1049
4. The sampling plan at a minimum shall contain the following requirements:
 - a. Samples of the foundry sand from each generator shall be collected using a strategy to obtain representative samples as described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW 846)¹. The samples from each generator shall

¹ EPA publication SW-846, “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846),” as

be separately analyzed.

- b. Each sample shall be analyzed for total metals as described in SW 846, for the constituents listed in Table 1.
- c. Each sample shall be analyzed for leaching potential using the Toxicity Characteristic Leaching Procedure (TCLP) Method 1311 or the Synthetic Precipitation Leaching Procedure (SPLP) Method 1312 as described in SW 846, for the constituents specified in Table 1.
- d. The sample result for each constituent shall be included in a statistical evaluation. In order to be eligible for beneficial use under this Permit, the Applicant shall demonstrate that the 95% Upper Confidence Limit (UCL) of the mean for each constituent in the foundry sand does not exceed the limits specified in Table 1.

Table 1

Constituent^{2,3}	Totals Analysis (mg/kg)	Leaching Analysis (mg/L)
Aluminum (Al) ⁴	77000	4.0
Antimony (Sb)	31	0.12
Barium (Ba)	15000	40
Cadmium (Cd)	39	0.1
Copper (Cu)	1500	26
Iron (Fe)	55000	6.0
Lead (Pb)	300	0.3
Selenium (Se)	100	0.2
Zinc (Zn)	2800	100

5. Coverage under this Permit becomes effective when the Applicant receives written notification from the Director that coverage is granted. The Permittee shall conduct all activities authorized by this Permit in accordance with this Permit, the NOI, and OAC Chapter 3745-599.

D. Operating Conditions

1. When there is a change in the generating process, the Permittee shall determine constituent concentrations listed in Table 1 through additional sampling and analysis, performed in

amended through July 2016.

² Al, Sb, Ba, Fe: US EPA Regional Screening Levels, Residential Soil; Cd, Cu, Pb, Se, Zn: US EPA 40 Code of Federal Regulations Part 503 Pollutant Concentrations (Table 3 of 503.13).

³ Al, Sb, Ba, Cd, Cu, Fe, Pb, Zn: TCLP Analysis limits for beneficial use of foundry sand are 20 times the drinking water standard (Maximum Contaminant Levels (MCLs) or Secondary MCLs); Se is 5 times the drinking water standard.

accordance with the sampling plan developed pursuant to section C.4. of this Permit, and demonstrate through a statistical evaluation that the 95% UCL of the mean for each constituent does not exceed the limits specified in Table 1.

2. The Permittee shall cease beneficial use of the foundry sand pursuant to this Permit if it is determined that the concentrations of constituents in the foundry sand exceed the limits for any of the constituents listed in Table 1.
3. After coverage under this Permit is granted, the Permittee shall provide to the Director an NOI and analytical results of the foundry sand for any additional generators from which foundry sand is to be obtained for beneficial use.
4. The Permittee shall retain the following information for a minimum of five years after beneficial use of the foundry sand has occurred and the Permittee shall make the information available to the Director or an authorized representative of Ohio EPA upon request:
 - a. Records of the name, address, and telephone number of each generator;
 - b. The annual volume of foundry sand from each generator managed, and the volume of foundry sand from each generator actually beneficially used annually;
 - c. Records of the location(s) where the foundry sand is stored or placed on land by the Permittee;
 - d. The sampling plan detailing where and how samples of foundry sand from each generator were collected, dates that the annual samples were collected, and the list of constituents for which samples were analyzed;
 - e. All laboratory analyses of the constituent concentrations in the foundry sand from each generator.
5. Not later than April first of each year the Permittee shall submit to the Director an annual report. The annual report shall be sent to the following address:

Ohio Environmental Protection Agency
Division of Materials and Waste Management
Attn: Beneficial Use Unit
PO Box 1049
Columbus, OH 43216-1049

6. The annual report shall include the following information for the previous calendar year:
 - a. Volume of foundry sand beneficially used under this Permit
 - b. Volume of foundry sand stored for beneficial use under this Permit;
 - c. Sampling analyses and results of foundry sands beneficially used under this Permit.
7. The Permittee shall use Best Management Practices, as defined in OAC Rule 3745-599-02, when storing or beneficially using foundry sand pursuant to this Permit. The Best Management Practices shall include, at a minimum, the following:
 - a. Storage and beneficial use locations shall be at least 300 feet from wells and surface

- waters used for drinking water or watering livestock;
- b. Storage and beneficial use locations shall be at least 100 feet from other surface waters of the state as defined in ORC Section 6111.01(H);
 - c. The Permittee shall create surface diversions to catch any solids in runoff or to divert runoff away from waters of the state at sites where foundry sand is placed on land.
 - d. Storage and beneficial use shall not occur within a drinking water source protection area as defined in OAC Rule 3745-9-01;
 - e. Storage and beneficial use locations shall not be within 1000 feet of a sensitive groundwater area, such as karst terrain, a sand and gravel pit, a limestone, or sandstone quarry;
 - f. Storage and beneficial use locations shall not be in a wellhead protection area with less than ten feet of low permeable clayey glacial till, or a one hundred gallon-per-minute aquifer with less than ten feet of low permeable clayey glacial till;
 - g. The Permittee shall take measures to control fugitive dust and other air emissions that may result from activities authorized through this Permit.
8. The Permittee shall store and beneficially use foundry sand pursuant to this Permit in such a manner that the activities will neither cause a nuisance nor adversely affect public health, safety or the environment. The Director may revoke coverage under this Permit if the Director determines that a nuisance condition or a threat to human health, safety or the environment exists. Immediately upon the effective date of any written notification from the Director of revocation of coverage under this Permit, the Permittee shall cease beneficial use under this Permit. The Director may require the Permittee to remove the material, remediate the site, or to take other action as appropriate to eliminate the nuisance or threat.
 9. The Permittee shall conduct all activities in compliance with all applicable local, state, and federal laws and regulations pertaining to environmental protection, including but not limited to the control of air pollution, leachate, and storm water run-on and run-off and protection of ground water and surface water.
 10. The Permittee shall conduct all activities in compliance with all other applicable local, state, and federal laws and regulations not explicitly identified in this Permit.
 11. The Permittee shall not cause pollution or cause to be placed any foundry sand that has been or is intended to be beneficially used by placement on the land for road construction sub-base, as a component in structural fill, or as pipe bedding in a location where it causes pollution to waters of the state, except in accordance with an effective National Pollutant Discharge Elimination System (NPDES) permit. Any unauthorized discharge to waters of the state must be reported to Ohio EPA (call 1-800-282-9378) within twenty-four (24) hours of discovery.
 12. The Permittee shall furnish to the Director or an authorized representative of Ohio EPA, within 10 days of receiving a written request, any records that the Director or an authorized representative of Ohio EPA requests to determine whether cause exists for revoking coverage under or determining compliance with this Permit. Additional information requested by the Director or an authorized representative of Ohio EPA shall be submitted

within 10 days of receipt of the request or such other time period authorized by the Director or an authorized representative of Ohio EPA.

13. When the Permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI to the Director, he or she shall promptly submit such facts or correct information.
14. The Permittee shall comply with OAC Rules 3745-599-05 (general exclusions), 3745-599-20 (prohibitions), 3745-599-25 (signatures), 3745-599-35 (legitimacy criteria), 3745-599-60 (approved sampling and characterization procedures), 3745-599-210 (notice of intent to obtain coverage under a general beneficial use permit), and 3745-599-220 (coverage under a general beneficial use permit). If there is a conflict between a requirement in a rule and a condition of this Permit that cannot be reconciled, the Permittee shall notify the Director in writing of the conflict and shall comply with the Permit condition unless directed otherwise by the Director.

E. Site Access

The Permittee shall allow the Director or an authorized representative of Ohio EPA to:

1. Enter upon the site where a regulated facility or activity is located or conducted or where records are retained by the Permittee under OAC Chapter 3745-599 or the terms and conditions of this Permit.
2. Have access to and copy any records that must be kept under OAC Chapter 3745-599 or the terms and conditions of this Permit.
3. Collect samples, take photographs, perform measurements, surveys and other tests, and inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under OAC Chapter 3745-599 or this Permit.