



## Ohio Administrative Code

### Rule 3745-40-08 Requirements for the beneficial use of biosolids: general requirements, prohibitions, isolation distance requirements, site specific requirements, and additional site restrictions for the beneficial use of class B biosolids.

Effective: December 1, 2018

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[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-40-01 of the Administrative Code.]

#### (A) General requirements.

(1) Any biosolids distributed for beneficial use (e.g. for landscaping or gardening) shall be exceptional quality biosolids, as defined in rule 3745-40-04 of the Administrative Code.

(2) Except as provided in paragraphs (A)(3) and (A)(7) of this rule, class B or bulk exceptional quality biosolids shall be beneficially used at the calculated agronomic rate at a beneficial use site. The agronomic rate shall be calculated prior to beneficial use and be the most limiting factor derived from the following:

(a) For soils with soil phosphorus test results less than or equal to forty parts per million Bray-Kurtz P1 extraction or fifty-eight parts per million Mehlich III extraction, the most limiting factor of the following:

(i) The nitrogen agronomic rate.

(ii) A phosphate beneficial use rate of two hundred fifty pounds per acre or less.

(iii) A phosphate beneficial use rate between two hundred fifty pounds per acre and five hundred pounds per acre if both of the following criteria are met:

(a) No additional phosphate application shall be made at the beneficial use site for a minimum of



three calendar years.

(b) All biosolids are injected or are incorporated within twenty-four hours of beneficial use.

(b) For soils with soil phosphorus test results greater than forty parts per million Bray-Kurtz P1 extraction or fifty-eight parts per million Mehlich III extraction and less than or equal to one hundred parts per million Bray-Kurtz P1 extraction or one hundred thirty parts per million Mehlich III extraction, the most limiting factor of the following:

(i) The nitrogen agronomic rate.

(ii) A multi-year phosphate agronomic rate.

(c) For soils with soil phosphorus test results greater than one hundred parts per million Bray-Kurtz P1 extraction or one hundred thirty parts per million Mehlich III extraction, beneficial use shall be completed in accordance with the phosphorus index.

(3) For all beneficial use sites, beneficial use of class B or bulk exceptional quality biosolids may be completed in accordance with the phosphorus index.

(4) Except as provided in paragraph (A)(2)(a)(iii) of this rule, the phosphate agronomic rate shall be limited to two hundred fifty pounds per acre.

(5) For all beneficial use sites, the agronomic rate calculations shall include all sources of nitrogen and phosphate such as commercial fertilizer or manure in addition to class B or bulk exceptional quality biosolids.

(6) Special requirement regarding liquid class B or liquid bulk exceptional quality biosolids. The beneficial use of liquid class B or bulk exceptional quality biosolids shall be at or below the agronomic rate for the reasonably expected yield goal of planned crops or crop rotation, or at or below the available water capacity of the upper eight inches of soil, whichever is less at the time of beneficial use.



(7) Special requirement regarding land reclamation sites. The agronomic rate may be exceeded during land reclamation projects using biosolids provided the beneficial use is in accordance with paragraph (B) of rule 3745-40-03 of the Administrative Code.

(B) Prohibitions and restrictions.

(1) Pollutant ceiling concentrations. No person shall beneficially use biosolids if the concentration of any pollutant in the biosolids exceeds the ceiling concentration limits for the pollutants established in rule 3745-40-04 of the Administrative Code.

(2) Frozen or snow covered ground. No person shall beneficially use class B or bulk exceptional quality biosolids on frozen or snow-covered ground.

[Comment: If biosolids can be injected or incorporated, then the beneficial use site is not frozen.]

(3) Saturated soil. No person shall beneficially use class B or bulk exceptional quality biosolids on the surface of a beneficial use site when the top two inches of soil are saturated.

(4) Precipitation prohibitions and restrictions for hydrologic soil groups A, B, and C.

[Comment: Information on Ohio hydrologic soil groups can be found on the United States department of agriculture, natural resources conservation services web site at the following link: [www.oh.nrcs.usda.gov/technical/soils/](http://www.oh.nrcs.usda.gov/technical/soils/).]

(a) Except as provided in paragraph (B)(4)(b) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids during a precipitation event, or when the forecast indicates that there is at least a fifty per cent chance that 0.5 inches of rain will occur within twenty-four hours after beneficial use. The forecast consulted shall be for the municipality nearest where the beneficial use site is located and shall be printed out or otherwise recorded and kept on file for each beneficial use event.

[Comment: Information on hourly forecasts may be located at the national oceanic and atmospheric administration's website: [www.weather.gov](http://www.weather.gov) by entering a zip code or city, state in the box where



indicated, selecting "Go" and selecting the "Hourly Weather Forecast" under "More Information."]

(b) Class B or bulk exceptional quality biosolids may be beneficially used when the forecast indicates that there is at least a fifty per cent chance that 0.5 inches of rain will occur within twenty-four hours after beneficial use if either of the following occur:

(i) The biosolids are injected.

(ii) The biosolids are immediately incorporated and the forecast does not indicate that there is at least a fifty per cent chance that 0.5 inches of rain will occur within six hours after beneficial use.

(5) Precipitation prohibitions and restrictions for hydrologic soil group D soils.

(a) Except as provided in paragraphs (B)(5)(b) to (B)(5)(b)(ii) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids during a precipitation event or when the forecast indicates that there is at least a fifty per cent chance that 0.25 inches of rain will occur within twenty-four hours after beneficial use. The forecast consulted shall be for the municipality nearest where the beneficial use site is located and shall be printed out or otherwise recorded and kept on file for each beneficial use event.

[Comment: Information on hourly forecasts may be located at the national oceanic and atmospheric administration's website: [www.weather.gov](http://www.weather.gov) by entering a zip code or city, state in the box where indicated, selecting "Go" and selecting the "Hourly Weather Forecast" under "More Information."]

(b) Class B or bulk exceptional quality biosolids may be beneficially used when the forecast indicates that there is at least a fifty per cent chance that 0.25 inches of rain will occur within twenty-four hours after beneficial use for any hydrologic soil group (HSG) D soils if any of the following occur:

(i) The biosolids are injected.

(ii) The biosolids are immediately incorporated and the forecast does not indicate that there is at least a fifty per cent chance that 0.25 inches of rain will occur within six hours after beneficial use.



(6) No person shall beneficially use class B or bulk exceptional quality biosolids if such beneficial use is likely to adversely affect a threatened or endangered species listed under section four of the Endangered Species Act or pursuant to section 1531.25 of the Revised Code or the species' designated critical habitat.

(C) Isolation distance requirements.

(1) Except as provided in paragraph (C)(2) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids within the following isolation distances listed in table C-1 of this rule.

	Surface application isolation distance requirements (feet)	Injected or immediately incorporated isolation distance requirements (feet)	Applicable biosolids classification
Bedrock	3	3	Class B or bulk exceptional quality
Surface waters of the state	33	33	Class B or bulk exceptional quality
Sinkhole or UIC class V drainage	300 without a grass buffer; 100 with a grass buffer	300 without a grass buffer; 100 with a grass buffer	Class B or bulk exceptional quality
Occupied structure or school	300	100	Class B
Private potable water source	300	100	Class B
Medical care facility	1000	300	Class B

[Comment: For more information on sinkholes and different classes of UIC injection wells, see Chapter 3745-34 of the Administrative Code.]

(2) No person shall beneficially use class B biosolids in any of the following areas:

(a) Within the sanitary isolation distance a public water system shall maintain for a drinking water supply well, as established in rule 3745-9-04 of the Administrative Code.



(b) Within an emergency management zone for a public water system using surface water. Where no emergency management zone has been delineated or endorsed by the Ohio environmental protection agency, the isolation distance shall consist of a circle with a radius of one thousand five hundred feet from the intake.

(c) Within the following areas, as defined in table C-2 of this rule:

Type of public water system	Isolation distance
Community or non-transient, non-community public water system	The inner management zone; if the drinking water source protection area is underlain by karst or fractured bedrock and has been determined to be highly susceptible to contamination, the setback shall be extended to include the entire drinking water source protection area
Transient, non-community public water system	Three hundred feet from a drinking water supply well

(3) The director or an authorized representative may allow a reduction in isolation distance for those occupied structures that are located adjacent to an authorized beneficial use site, provided such a request is made from both the structure owner and, if applicable, the resident of the occupied structure. A request for an isolation distance reduction shall be made on forms approved by the director.

(D) Site specific requirements. Any person who beneficially uses class B or bulk exceptional quality biosolids shall meet the following site specific requirements, as applicable:

(1) Beneficial use sites that are frequently flooded. No person shall beneficially use class B or bulk exceptional quality biosolids at a beneficial use site that is frequently flooded, as defined in rule 3745-40-01 of the Administrative Code, so that the class B or bulk exceptional quality biosolids enter surface waters of the state, except as provided in an NPDES permit issued under Chapter 6111. of the Revised Code. Beneficial use of class B or bulk exceptional quality biosolids at a beneficial use site shall be limited to same day incorporation or injection on areas of beneficial use sites that are frequently flooded during periods when flooding is expected.

(2) Ground slope and ground cover. No person shall beneficially use class B or bulk exceptional



quality biosolids at food crop, feed crop, fiber crop, or cover crop land over fifteen per cent slope or at pasture land or vegetation land over twenty per cent slope unless one of the following activities is performed:

- (a) Same day incorporation or injection with operations done on the contour.
  - (b) The field is established and managed in contour strips with alternate strips in cover crop, pasture, or vegetation.
- (3) Soil monitoring requirements. If soil monitoring results for either soil phosphorus or soil pH are more than three years old, the soil shall be retested prior to the class B or bulk exceptional quality biosolids being delivered to a beneficial use site for beneficial use. Composite soil samples shall be taken for both of the following:
- (a) Soil phosphorus. Prior to the beneficial use of class B or bulk exceptional quality biosolids, the soil phosphorus level shall be monitored utilizing either the Bray-Kurtz P1 extraction or Mehlich III extraction method.
  - (b) Soil pH. Minimum soil pH for the beneficial use of class B biosolids shall be 5.5. If the soil pH at a beneficial use site is less than 5.5, sufficient liming material shall be added such that the class B biosolids and soil mixture pH is calculated to reach 5.5 or greater.
- (4) Soil sampling collection procedure. If soil samples are required by paragraph (D)(3) of this rule, the samples shall be taken in accordance with the following requirements:
- (a) A composite sample shall represent fifteen to twenty acres of area that is uniform in soil series, slope, drainage, erosion, and nutrient application (including biosolids).
  - (b) Soil grab samples shall be taken seventy-five to one hundred feet apart with a minimum of fifteen grab samples in a composite sample.
  - (c) Soil grab samples shall be taken to a plow depth, or within the top eight inches of soil.



(d) Low spots or other unusual areas such as biosolids or liming material stockpiling areas, and fertilizer spills shall not be included in composite samples and shall be sampled separately.

(e) For row crops, samples shall be taken between rows.

(f) For establishing grass pasture crops, samples shall be collected to the rooting zone (three to four inches).

(g) All grab samples shall be broken up and mixed thoroughly before the sample is composited.

(h) Soil samples collected to analyze for soil phosphorus shall be collected prior to spring planting.

[Comment: Further information regarding sampling procedures and test methodology may be found in Ohio state university's factsheet AGF-513 at: <https://ohioline.osu.edu/factsheet/AGF-513>.]

(5) Beneficial use sites with subsurface tile drainage.

(a) For beneficial use sites with subsurface tile drainage, all field outlets shall be visually monitored before, during and after beneficial use of liquid class B or liquid bulk exceptional quality biosolids at the beneficial use site and the results of that monitoring shall be recorded. Daily visual monitoring shall continue until biosolids are assimilated into the beneficial use site and are no longer likely to discharge to waters of the state. Methods or devices to stop or capture subsurface drain flow shall be accessible. If liquid class B or liquid bulk exceptional quality biosolids reach the subsurface drain outlet to surface waters of the state, the beneficial use of liquid biosolids shall cease and the flow shall be stopped or captured. Use of drain outlet plugs or other devices shall be recorded.

(b) For beneficial use of liquid class B or liquid bulk exceptional quality biosolids at beneficial use sites with subsurface tile drainage, all of the following criteria shall be followed:

(i) Beneficial use rates shall be less than or equal to 0.5 inches or thirteen thousand gallons per acre per beneficial use event.

(ii) A tool shall be used that can disrupt or close the preferential flow paths in the soil using





horizontal fracturing, or the surface of the soil shall be tilled three to five inches deep to a seedbed condition to soak up the liquid class B or liquid bulk exceptional quality biosolids and keep it out of preferential flow channels.

(iii) If injection is used, liquid class B or liquid bulk exceptional quality biosolids shall only be injected deep enough to cover the biosolids with soil. The soil shall be tilled at least three inches below the depth of injection prior to or at the time of beneficial use.

(iv) For beneficial use sites where tillage is not an option, all tile outlets from the beneficial use site are to be plugged and all tile stops are to be closed prior to or at the same time as beneficial use.

(c) A standard operating procedure shall be developed by the beneficial user or permittee for beneficial use sites with tile drainage to address paragraphs (D)(4)(a) and (D)(4)(b) of this rule.

(E) Additional site restrictions for the beneficial use of class B biosolids:

(1) Food crops with harvested parts that touch the biosolids or soil mixture and are on the surface of the authorized beneficial use site shall not be harvested for fourteen months after the beneficial use of class B biosolids.

(2) Food crops with harvested parts below the surface of the authorized beneficial use site shall not be harvested for twenty months after the beneficial use of class B biosolids when the biosolids remained on the surface of the authorized beneficial use site for four months or longer prior to incorporation into the soil.

(3) Food crops with harvested parts below the surface of the authorized beneficial use site shall not be harvested for thirty-eight months after the beneficial use of class B biosolids when the class B biosolids remained on the surface of the authorized beneficial use site for less than four months prior to incorporation into the soil.

(4) All other food crops, feed crops, and fiber crops shall not be harvested for thirty days after the beneficial use of class B biosolids.



(5) Animals shall not be allowed to graze on the authorized beneficial use site for thirty days after the beneficial use of class B biosolids.

(6) Turf or other vegetation grown for landscaping purposes that is grown on an authorized beneficial use site where class B biosolids are beneficially used shall not be harvested for one year after the beneficial use of class B biosolids when the harvested turf or other vegetation is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the director.

(7) Public access to a high potential public exposure site shall be restricted for one year after the beneficial use of class B biosolids.

(8) Public access to a low potential public exposure site shall be restricted for thirty days after the beneficial use of class B biosolids.

(9) The mixing of class B biosolids from different treatment works at an authorized beneficial use site is prohibited, unless in accordance with paragraph (C) of rule 3745-40-06 of the Administrative Code.

(10) Drag hoses and mobile storage tanks shall not be utilized at authorized beneficial use sites until a standard operating procedure has been developed under paragraph (C) of rule 3745-40-09 of the Administrative Code and a permit to install, if applicable, is obtained.