

REGULATION 5.21 Environmental Acceptability for Toxic Air Contaminants

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the criteria for determining the environmental acceptability of emissions of toxic air contaminants.

SECTION 1 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given to them in Regulation 1.02 *Definitions* or Regulation 5.01 *General Provisions*.

- 1.1 “Best available technology for toxics” or “T-BAT” means an emission standard that reflects the maximum degree of toxic air contaminant (TAC) emission and risk reduction that the District determines can be reasonably achieved by the process or process equipment, taking into account energy, environmental, and economic impacts and other costs, and health and welfare benefits. In determining T-BAT, the District shall consider work practices, raw material substitutions, alternative processes and process design characteristics, air pollution control equipment, pollution prevention measures, equipment maintenance measures (including leak detection and repair), and upset condition prevention measures.
- 1.2 “Environmentally acceptable” or “environmental acceptability” (EA) means the ambient concentration, including an averaging time frame, of a TAC, or the sum of the ambient concentrations, including an averaging time frame, of multiple TACs, that is less than or equal to the ambient goals established in this regulation (EA goals).
- 1.3 “Existing process or process equipment” means, for the provisions of this regulation, one of the following:
 - 1.3.1 A process or process equipment, for which an administratively complete application for a construction permit was received by the District before July 1, 2005, that involves the potential emission of a Category 1 or 2 TAC from a Group 1 or 2 stationary source, excluding the potential emission of a Category 2 TAC if the owner or operator of a Group 1 stationary source did not report the emission of that TAC to the EPA for the 2006 Toxics Release Inventory Program or if the owner or operator of a Group 2 stationary source did not report the emission of that TAC to the EPA for the 2007 Toxics Release Inventory Program, or
 - 1.3.2 A process or process equipment located at a permitted stationary source, for which an administratively complete application for a construction permit was received by the District before July 1, 2005, that involves the potential emission of a TAC for which the District determines that the emissions do not comply with the general duty clause of Regulation 5.01 Section 3.
- 1.4 “Hazard quotient” or “HQ” means the ratio between the concentration of a TAC and the benchmark ambient concentration for noncarcinogenic effects for that TAC (BAC_{NC}). A hazard quotient is a unitless numerical value.

- 1.5 “Industrial property” means property on which the activities are industrial in nature, for example, manufacturing, utilities, industrial research and development, or petroleum bulk storage. This term includes, but is not limited to, a permitted solid waste disposal facility, rail line or railroad switch yard, and, except for a terminal building and any other area to which the public has unrestricted access, a public airport. For the purpose of demonstrating environmental acceptability pursuant to this regulation, industrial property, whether or not a permitted stationary source, shall include docks, unloading areas, loading areas, and other appurtenances related to receiving and shipping materials via the Ohio River, and areas or structures related to these receiving and shipping activities. This term does not include a farm or a commercial establishment.
- 1.6 “New or modified process or process equipment” means, for the provisions of this regulation, one of the following:
 - 1.6.1 A process or process equipment, for which an administratively complete application for a construction permit was received by the District on or after July 1, 2005, that involves the potential emission of a Category 1, 2, 3, or 4 TAC from a Group 1 or 2 stationary source, or
 - 1.6.2 The application involves the potential emission of a TAC from a permitted stationary source, for which an administratively complete application for a construction permit was received by the District on or after July 1, 2005, and the District determines that the emission would not comply with the general duty clause of Regulation 5.01 Section 3.
- 1.7 “Permitted stationary source” means a stationary source that is subject to the permit requirements of Regulation 2.03 section 1.1 or 1.2. For the purpose of demonstrating environmental acceptability pursuant to this regulation, the property of a permitted stationary source shall include docks, unloading areas, loading areas, and other appurtenances related to receiving and shipping materials via the Ohio River, and areas or structures related to these receiving and shipping activities.
- 1.8 “Source sector” means the general grouping of sources of air contaminants used by the District for developing anthropogenic emissions inventories. These source sectors are as follows:
 - 1.8.1 Point source - industrial or commercial stationary source that is subject to the permit requirements in Regulation 2.03 section 1.1 or 1.2 (permitted stationary source).
 - 1.8.2 Area source - non-permitted commercial stationary source or other anthropogenic source of emissions that is not included in section 1.8.1, 1.8.3, or 1.8.4.
 - 1.8.3 Mobile source - motorized vehicle that is registered for use on the public roads and highways.
 - 1.8.4 Nonroad mobile source - motorized vehicle that is not registered for use on the public roads and highways or any other equipment with a fossil fuel-fired engine that is not a point source.
- 1.9 “Target-organ-specific hazard index” (TOSHI) means the sum of the Hazard Quotients for the toxic air contaminant that may cause an adverse effect to the same target organ or same major effect. Adverse effect by target organ includes hepatic, renal, respiratory, cardiovascular, gastrointestinal, hematological, musculoskeletal, and dermal/ocular effects. Major effect categories include neurotoxicity, developmental toxicity, reproductive toxicity, and immunotoxicity. Because a TAC may affect more than one target organ or major effect category, the determination of a TOSHI prompted by the

emission of one TAC may require determining multiple TOSHIs for multiple target organs or major effect categories.

SECTION 2 Ambient Goals for Environmental Acceptability for Toxic Air Contaminants

2.1 The risk, as determined pursuant to the procedures in section 2.2, resulting from the allowed emissions of TACs, excluding de minimis emissions and the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2, from new or modified processes or process equipment, as defined in section 1.6, shall not exceed the ambient goals of environmental acceptability (EA goals) for TACs in section 2.2, except as provided in section 2.3.

2.2 The following table establishes the EA goals for TACs for new or modified processes or process equipment:

| | Applicable Source Sector | Applicable Process or Process Equipment ¹ | Applicable TACs | EAG _C ^{2,3} Risk ($\otimes 10^{-6}$) ₆ | EAG _{NC} ^{4,5} HQ |
|-------|--------------------------|---|-------------------------------|--|--|
| 2.2.1 | Point source | Individual stationary source, individual new or modified P/PE | Individual TAC | 1.0 | 1.0 |
| 2.2.2 | Point source | Individual stationary source, all new or modified P/PE | Individual TAC | | 1.0 |
| 2.2.3 | Point source | Individual stationary source, all new or modified P/PE | Total for all applicable TACs | 3.8 | |

Notes for section 2.2 (also applicable to section 2.5):

¹ Process or process equipment is abbreviated P/PE.

² R_C, or the risk, in units of risk in one million, from an individual TAC that is determined to be a carcinogen, as applicable to section 2.2.1 (or section 2.5.1), means the cancer risk from an individual TAC from an individual process or process equipment, derived from the following equation:

$$R_C = \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad [\text{Equation 1}]$$

Where: i = an individual carcinogenic TAC, from
j = an individual new or modified process or process equipment,
BAC_{Ci} = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and
Maximum concentration = the highest concentration of a TAC in the

ambient air, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22 *Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant*.

- ³ R_C , or the risk, in units of risk in one million, from all TACs that are determined to be carcinogens, as applicable to section 2.2.3 (or section 2.5.3), means the sum of the cancer risks at a single point from all individual TACs from all applicable individual processes or process equipment, derived from the following equation:

$$R_C = \sum_{i=1}^n \sum_{j=1}^m \frac{\text{Maximum concentration}_{ij}}{BAC_{C_i}} \quad [\text{Equation 2}]$$

Where: i = an individual carcinogenic TAC, from
 j = an individual process or process equipment,
 n = the total number of carcinogenic TACs to be included in the demonstration of environmental acceptability,
 m = the total number of processes or process equipment from which carcinogenic TAC "i" may be emitted,
 BAC_{C_i} = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum risk of all applicable "i" emissions from all applicable "j" processes or process equipment, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

- ⁴ R_{NC} , or the risk from the noncarcinogenic effects of an individual TAC, as applicable to section 2.2.1 (or 2.5.1), means the hazard quotient of the TAC from an individual process or process equipment, derived from the following equation:

$$R_{NC} = HQ_i = \frac{\text{Maximum concentration}_{ij}}{BAC_{NC_i}} \quad [\text{Equation 3}]$$

Where: i = an individual TAC, from
 j = an individual process or process equipment,
 BAC_{NC} = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and

Maximum concentration = the highest concentration of a toxic air contaminant in the ambient air, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

- ⁵ R_{NC} , or the risk from the noncarcinogenic effects of an individual TAC from all applicable individual processes or process equipment, as applicable to section 2.2.2 (or 2.5.2), means the hazard quotient of the TAC at a single point from all applicable processes or process equipment, derived from the following equation:

$$R_{NC} = HQ_i = \sum_{j=1}^m \frac{\text{Maximum concentration}_{i,j}}{BAC_{NC_i}} \quad [\text{Equation 4}]$$

Where:

- i = an individual TAC, from
- j = an individual process or process equipment,
- m = the total number of processes or process equipment from which TAC “i” may be emitted,
- BAC_{NC} = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum concentration of the “i” emissions from all applicable “j” processes or process equipment, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

⁶ The EAG_C Risk is in units of risk in one million.

2.3 Modification of the EA goals.

2.3.1 After providing an opportunity for public review and comment, the District may approve a written request from the owner or operator of a new or modified process or process equipment to exceed one or more of the EA goals in section 2.2, provided that the applicable EA goals in sections 2.5.2 and 2.5.3 are met or a modification of the applicable EA goals in sections 2.5.2 and 2.5.3 is also approved by the District, pursuant to the modification process in section 2.6.

2.3.2 As part of the request pursuant to section 2.3.1, the owner or operator shall submit a demonstration that the process or process equipment complies with, or, pursuant to a proposed plan and schedule, will comply with, T-BAT.

2.3.2.1 For a new or modified process or process equipment for which the risk, determined pursuant to the process applicable to section 2.2.1 [Equation 1], exceeds 1.0×10^{-6} , the T-BAT demonstration shall be based upon a review of the practices and measures potentially applicable to the process or process equipment, including technology transfer, identified from readily available air pollution control information, including, but not limited to, the RACT/BACT/LAER Clearinghouse, available on the Internet, and the New and Emerging Environmental Technologies (NEET) Clean Air Technologies Database, available on the Internet. The submitted demonstration shall document that the proposed emission standard reflects the maximum degree of TAC emission and risk reduction that can be reasonably achieved, as defined in section 1.1, and justify why any identified available method to achieve a higher degree of TAC emission and risk reduction was not chosen.

2.3.2.2 For a new or modified process or process equipment for which the risk, determined pursuant to the process applicable to section 2.2.1 [Equation 1], is less than or equal to 1.0×10^{-6} , the T-BAT demonstration shall be based upon a review of the practices and measures generally considered applicable to the process or process equipment, including technology transfer, identified from readily available air pollution control information. The submitted demonstration shall document that the proposed emission standard reflects the maximum degree of

TAC emission and risk reduction that can be reasonably achieved, as defined in section 1.1, and justify why any identified available method to achieve a higher degree of TAC emission and risk reduction was not chosen. Notwithstanding the T-BAT requirement of section 2.3.2, if a process or process equipment does not individually, or when aggregated with other processes or process equipment, up to a total cancer risk of 1×10^{-6} , materially contribute to the exceedance of the EA goal of section 2.2.2 or 2.2.3, then neither T-BAT nor a T-BAT demonstration for that process or process equipment shall be required for approval of the request.

2.3.3 If the District determines that the T-BAT requirement of section 2.3.2 is met, or will be met in a timely manner, then the District shall, consistent with section 2.3.1, approve the request for modification of the applicable EA goals in section 2.2.

2.3.4 If the District approves a request to exceed one or more of the EA goals in section 2.2, then any resulting emission standard and any approved plan and schedule for compliance with the T-BAT requirement shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.

2.4 The risk, as determined pursuant to the procedures in section 2.5, resulting from the allowed emissions of TACs, as specified in sections 2.4.1 to 2.4.3, excluding de minimis emissions, from processes and process equipment at a point source, as specified in sections 2.4.1 to 2.4.3, shall not, taking into account the compliance schedule for the various categories of TACs in section 4.5, exceed the EA goals for TACs in section 2.5 as follows, except as provided in sections 2.6 and 2.7:

2.4.1 The EA goals in section 2.5.1 are applicable to Category 1 and 2 TACs from existing processes and process equipment,

2.4.2 The EA goals in sections 2.5.2 and 2.5.3 are applicable to Category 1 and 2 TACs from all existing processes and process equipment and Category 1, 2, 3, and 4 TACs from all new or modified processes or process equipment, excluding the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2, and

2.4.3 The EA goals in section 2.5 are applicable to a process or process equipment for which the District determines that the emissions of a TAC do not comply with the general duty clause of Regulation 5.01 Section 3.

2.5 The following table establishes the EA goals for TACs for processes and process equipment, as specified in sections 2.4.1 to 2.4.3, at a point source:

| | Applicable Source Sector | Applicable Process or Process Equipment ¹ | Applicable TACs | EAG_C^{2,3} Risk ($\otimes 10^{-6}$) ₆ | EAG_{NC}^{4,5} HQ |
|-------|---------------------------------|---|------------------------|---|--|
| 2.5.1 | Point source | Individual stationary source, individual existing P/PE | Individual TAC | 1.0 | 1.0 |
| 2.5.2 | Point source | Individual stationary source, all P/PE, including new or | Individual TAC | | 1.0 |

| | Applicable Source Sector | Applicable Process or Process Equipment ¹ | Applicable TACs | EAG_C^{2,3} Risk ($\otimes 10^{-6}$)₆ | EAG_{NC}^{4,5} HQ |
|-------|---------------------------------|--|-------------------------------|--|--|
| | | modified P/PE | | | |
| 2.5.3 | Point source | Individual stationary source, all P/PE, including new or modified P/PE | Total for all applicable TACs | 7.5 | |

Notes for section 2.5: See the notes for section 2.2.

2.6 Modification of the EA goals.

2.6.1 After providing an opportunity for public review and comment, approval of a written request from the owner or operator of a process or process equipment to exceed one or more of the EA goals in section 2.5 may be granted, subject to the limitations in sections 2.6.3 and 2.6.4.

2.6.2 As part of the request pursuant to section 2.6.1, the owner or operator shall submit the following as applicable:

2.6.2.1 For a request to exceed any of the EA goals in section 2.5, a demonstration that the process or process equipment complies with, or, pursuant to a proposed plan and schedule, will comply with, T-BAT.

2.6.2.1.1 For a process or process equipment for which the risk, determined pursuant to the process applicable to section 2.5.1 [Equation 1], exceeds $1.0 \otimes 10^{-6}$, the T-BAT demonstration shall be based upon a review of the practices and measures potentially applicable to the process or process equipment, including technology transfer, identified from readily available air pollution control information, including, but not limited to, the RACT/BACT/LAER Clearinghouse, available on the Internet, and the NEET Clean Air Technologies Database, available on the Internet. The submitted demonstration shall document that the proposed emission standard reflects the maximum degree of TAC emission and risk reduction that can be reasonably achieved, as defined in section 1.1, and justify why any identified available method to achieve a higher degree of TAC emission and risk reduction was not chosen.

2.6.2.1.2 For a process or process equipment for which the risk, determined pursuant to the process applicable to section 2.5.1 [Equation 1], is less than or equal to $1.0 \otimes 10^{-6}$, the T-BAT demonstration shall be based upon a review of the practices and measures generally considered applicable to the process or process equipment, including technology transfer, identified from readily available air pollution control information. The submitted demonstration shall document that the proposed emission standard reflects the maximum degree of TAC emission and risk reduction that can be reasonable achieved, as defined in section 1.1, and justify why any identified available method to achieve a

higher degree of TAC emission and risk reduction was not chosen. Notwithstanding the T-BAT requirement of section 2.6.2.1, if a process or process equipment does not individually, or when aggregated with other processes or process equipment, up to a total cancer risk of 1×10^{-6} , materially contribute to the exceedance of the EA goal of section 2.5.2 or 2.5.3, then neither T-BAT nor a T-BAT demonstration for that process or process equipment shall be required for approval of the request, and

2.6.2.2 For a request to exceed an EA goal in section 2.5.2 or 2.5.3, an evaluation of costs, technical feasibility, and relevant (including both current and up to 25 years in the future) demographic and land use factors. Relevant factors shall include, but are not limited to, the frequency and duration of public access to the area for which the EA goal is exceeded, the nature, type, and use of the area, and how each relevant factor may likely change over the 25-year period of time. In evaluating future changes, available land use, population, and transportation horizon projections shall be included. The evaluation may include, but is not required to include, the results of an EPA-approved human exposure model and other factors, and

2.6.2.3 For a request to exceed the EA goal in section 2.5.2, a determination of the target-organ-specific hazard index.

2.6.3 In making the determination whether to approve a request for a modification of the applicable EA goal for a Hazard Quotient, determined pursuant to the process applicable to section 2.5.2, exceeding 1.0 or a cancer risk, determined pursuant to the process applicable to section 2.5.3, not to exceed 25×10^{-6} , the District shall determine whether the T-BAT requirement of section 2.6.2.1 is met, or will be met in a timely manner, and shall, if applicable, consider, among other factors, costs, technical feasibility, and the demographic and land use factor information required by section 2.6.2.2, and, if included in the evaluation, the results of an EPA-approved human exposure model and any other identified factor. If the District determines that the T-BAT requirement is met, or will be met in a timely manner, and, if applicable, considering the information required by sections 2.6.2.2 and 2.6.2.3 and other factors, determines that the resulting allowable emissions would provide an ample margin of safety to the exposed population, then the District shall approve a modification of the applicable EA goal.

2.6.4 If the requested modification of an EA goal is greater than a risk, determined pursuant to the process applicable to section 2.5.3, of 25×10^{-6} but no greater than 100×10^{-6} , then the District shall determine whether the T-BAT requirement of section 2.6.2.1 is met, or will be met in a timely manner, and shall determine, considering, among other factors, costs, technical feasibility, and the demographic and land use factors required by section 2.6.2.2, and, if included in the evaluation, the results of an EPA-approved human exposure model and any other identified factor, whether the resulting allowable emissions would provide an ample margin of safety to the exposed population. After providing the opportunity for public review and comment, including a public hearing, the District may approve a modification of the EA goal.

2.6.5 If the District approves a request to exceed one or more of the EA goals in section 2.5, then the approved level of the modified EA goal, or a lesser level as determined appropriate by the District, taking into account other affected processes and process

- equipment, shall be added to the applicable EA goal in section 2.5. If the District approves a request to exceed one or both of the EA goals in sections 2.5.2 and 2.5.3, then the approved level of the modified EA goal, or a lesser level as determined appropriate by the District, taking into account other affected stationary sources, shall be added to the applicable EA goal in section 2.8. Any resulting emission standard and any approved plan and schedule for compliance with the T-BAT requirement shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.
- 2.7 The owner or operator of a new or modified process or process equipment, except for a new or modified process or process equipment that was approved by the District to exceed one or both of the EA goals in section 2.2.2 or 2.2.3 pursuant to the provisions of section 2.3, is not required to demonstrate compliance with the EA goals in sections 2.5.2 or 2.5.3 until required to do so pursuant to the provisions of section 4.1, taking into account the schedule for the various categories of TACs.
- 2.8 The EA goals for TACs, applicable to the risk, as determined pursuant to the procedures in section 2.8, resulting from the allowed emissions from existing processes and process equipment, as defined in section 1.3, and new or modified processes and process equipment, as defined in section 1.6 (including the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2), excluding de minimis emissions, are as follows:

| | Applicable Source Sector | Applicable Source of Emission | Applicable TACs | EAG_C¹ Risk ($\otimes 10^{-6}$)³ | EAG_{NC}² HQ |
|-------|---------------------------------|--|-------------------------------|--|--|
| 2.8.1 | Point source | Applicable processes and process equipment | Individual TAC | | 1.0 |
| 2.8.2 | Point source | Applicable processes and process equipment | Total for all applicable TACs | 10.0 | |

Notes for section 2.8:

- ¹ R_C , or the risk, in units of risk in one million, from all TACs that are determined to be carcinogens, as applicable to section 2.8.2, means the sum of the cancer risks at a single point from all individual TACs from all applicable stationary sources, derived from the following equation:

$$R_C = \sum_{i=1}^n \sum_{j=1}^m \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad [\text{Equation 5}]$$

Where: i = an individual carcinogenic TAC, from
 j = an individual source of emission,
 n = the total number of carcinogenic TACs to be included in the demonstration of environmental acceptability,
 m = the total number of sources of emission from which carcinogenic TAC "i" may be emitted,
 BAC_{Ci} = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum risk of all applicable "i" emissions from all applicable "j" sources of emission, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

² R_{NC} , or the risk from the noncarcinogenic effects of an individual TAC, as applicable to section 2.8.3, means the hazard quotient of the TAC from all applicable stationary sources, derived from the following equation:

$$R_{NC} = HQ_i = \sum_{j=1}^m \frac{\text{Maximum concentration}_{ij}}{BAC_{NC_i}} \quad [\text{Equation 6}]$$

Where: i = an individual TAC, from
 j = an individual source of emission,
 m = the total number of sources or emission from which TAC "i" may be emitted,
 BAC_{NC} = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum concentration of the "i" emissions from all applicable "j" sources of emission, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

³ The EAG_C Risk is in units of risk in one million.

2.9 The EA goals of sections 2.2, 2.5, and 2.8 applicable to the ambient air on industrial property or public roadways shall be increased by a factor of 10 for the carcinogenic risks (EAG_C) and by a factor of 3 for the noncarcinogenic risks (EAG_{NC}). These increases in the EA goals shall have no effect on the EA goals applicable to any other location. These increases in the EA goals shall have no effect on any approved modified EA goal pursuant to section 2.6.

2.10 If the risk, as determined pursuant to the procedures in section 2.2, 2.5, or 2.8, resulting from the allowed emissions of TACs, was determined to be environmentally acceptable

because of an increase in the EA goals pursuant to section 2.9 and the land use changes and is no longer either industrial property or a public roadway, then the owner or operator of the process or process equipment shall notify the District within 30 days of the change in land use and shall comply with the procedural requirements of section 4.11, substituting the date of notification by the owner or operator for the written notification by the District and substituting the change in land use for change in the benchmark ambient concentration.

- 2.11 If a modification to an EA goal for a process or process equipment pursuant to section 2.3 or 2.6 is approved by the District, then the owner or operator shall periodically re-evaluate T-BAT for the process or process equipment and submit to the District a demonstration, meeting the provisions of section 2.3.2.1 or 2.6.2.1, whether the practices and measures continue to constitute T-BAT. The schedule for re-evaluating T-BAT, consistent with the applicable time frame in section 2.11.1 or 2.11.2, shall be established by the District when approving the modification. Upon approval of the modification, the requirement to re-evaluate T-BAT and the schedule shall be an enforceable requirement of the applicable District permit for the process and process equipment.
 - 2.11.1 If the modification to an EA goal does not exceed a Hazard Quotient, determined pursuant to the process applicable to section 2.5.2, of 2.0 or a risk, determined pursuant to the process applicable to section 2.5.3, of 7.5×10^{-6} , then the demonstration shall be included with the next operating permit renewal application that is required to be submitted to the District at least 5 years after the date of approval of the current T-BAT requirement, and with the operating permit renewal application every 5 years thereafter.
 - 2.11.2 If the modification to an EA goal exceeds a Hazard Quotient, determined pursuant to the process applicable to section 2.5.2, of 2.0 or a risk, determined pursuant to the process applicable to section 2.5.3, of 7.5×10^{-6} , then the demonstration shall be submitted on the schedule established by the District to be neither more frequent than every 3 years, nor less frequent than every 5 years, beginning with the date established by the District that is neither sooner than 3 years, nor later than 5 years, after the date of approval of the current T-BAT requirement.
- 2.12 If the District determines, at any time after the approval of a modification to an EA goal for a process or process equipment pursuant to section 2.3 or 2.6, that a revised T-BAT could be implemented to either achieve compliance or achieve substantial progress towards compliance with the EA goal, then the District shall require the implementation of the revised T-BAT. In making its determination, the District shall consider, in addition to the factors in section 1.1, the costs relative to the useful life of emission-reduction measures previously required and installed as T-BAT. The District shall notify the owner or operator of its determination and the owner or operator shall submit to the District a compliance plan and schedule for compliance with, or substantial progress towards, the EA goal to be achieved on a schedule as deemed applicable in section 2.13. Upon approval by the District of the compliance plan and schedule, it shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the compliance plan.
- 2.13 If, pursuant to section 2.12 the District requires the implementation of a revised T-BAT, then the schedule shall be as follows:
 - 2.13.1 If the current approved modification of an EA goal does not exceed a Hazard

- Quotient, determined pursuant to the process applicable to section 2.5.2, of 2.0 or a risk, determined pursuant to the process applicable to section 2.5.3, of 7.5×10^{-6} , then the date for required implementation of the revised T-BAT shall be the expiration date of the current operating permit that expires at least, but no sooner than, 5 years after the date of approval of the current T-BAT requirement and at least, but no sooner than, 3 years after the notification by the District.
- 2.13.2 If the current approved modification of an EA goal exceeds a Hazard Quotient, determined pursuant to the process applicable to section 2.5.2, of 2.0 or a risk, determined pursuant to the process applicable to section 2.5.3, of 7.5×10^{-6} , then the date for required implementation of the revised T-BAT shall be 3 years after the notification by the District, but no sooner than 3 years after the required date of implementation of the current T-BAT requirement.
- 2.14 If the modification of an EA goal pertains only to ambient air on industrial property or on public roadways, or both industrial property and public roadways, then the approved modification levels identified in sections 2.11 and 2.13 shall be a Hazard Quotient, determined pursuant to the process applicable to section 2.5.2, of 4.0 or a risk, determined pursuant to the process applicable to section 2.5.3, of 75×10^{-6} .
- 2.15 Notwithstanding the provisions of sections 2.12 and 2.13, if a process or process equipment subject to a T-BAT requirement is modified such that either the allowed hourly or annual emissions of a TAC subject to the T-BAT requirement increases, then the modified process or process equipment is subject to a revised T-BAT analysis as part of the construction permit application review process.

SECTION 3 New or Modified Process or Process Equipment that May Emit a Toxic Air Contaminant

- 3.1 A construction permit required by the provisions of the Part 2 regulations for a new or modified process or process equipment that may emit a TAC shall, except as exempted pursuant to section 3.2, incorporate the following provisions:
- 3.1.1 The permit conditions shall contain an allowed emission standard for a Category 1 or 2 TAC from a Group 1 or 2 stationary source that has been demonstrated to comply with the environmental acceptability goals of section 2.2, except as provided in sections 2.3, 2.6, and 2.9,
- 3.1.2 The permit conditions shall contain an allowed emission standard for a Category 3 or 4 TAC from a Group 1 or 2 stationary source that meets one of the following:
- 3.1.2.1 The allowed emission standard has been demonstrated to comply with the environmental acceptability goals of section 2.2, except as provided in sections 2.3, 2.6, and 2.9, or
- 3.1.2.2 The allowed emission standard has been demonstrated to comply with Section 3 of Regulation 5.01. If the owner or operator chooses this option for compliance, then, prior to issuing the construction permit, the District shall provide an opportunity for public review and comment, and
- 3.1.3 If determined appropriate by the District, then the construction permit shall require the owner or operator of the new or modified process or process equipment to install, calibrate, operate, and maintain a continuous or intermittent emissions or parametric monitoring system. Applicable records shall be maintained for a period of at least 5 years, made available to the District upon request, and submitted to the District as

- specified in the construction permit.
- 3.2 Sections 3.1.1 and 3.1.2 shall not apply to a TAC emission that is a de minimis emission as defined in Regulation 5.01 section 1.6.

SECTION 4 Demonstration of Environmental Acceptability and Compliance Plans for Permitted Stationary Sources

- 4.1 The owner or operator of a Group 1 or Group 2 stationary source shall determine, according to the procedures in this regulation, whether the allowed emissions from all processes and process equipment at the stationary source comply with the EA goals in section 2.5. The determination pursuant to Section 4 is not required for a Category 2 TAC if the owner or operator of a Group 1 stationary source did not report the emission of that TAC to the EPA for the 2006 Toxics Release Inventory Program or if the owner or operator of a Group 2 stationary source did not report the emission of that TAC to the EPA for the 2007 Toxics Release Inventory Program. When making this determination, the owner or operator may include the effect on the allowed emissions of a process or process equipment pursuant to a promulgated Clean Air Act §112(d) maximum achievable control technology (§112(d) MACT) standard, provided that the change in allowed emissions and the compliance deadline are identified. The owner or operator shall, for each process or process equipment, submit to the District the results and the supporting documentation of the determination, including, but not limited to, for any Tier 3 modeling, the printed summary, and for any Tier 4 modeling, the printed output summary and, in electronic format, the input and output files. If a process or process equipment does not emit any applicable TAC, then the submittal shall indicate that no applicable TAC is emitted from that process or process equipment. If the emission of an applicable TAC is de minimis pursuant to Regulation 5.01 section 1.6, then the submittal shall indicate the specific applicable provision of section 1.6 for the process or process equipment, except that processes or process equipment that are trivial activities (section 1.6.2) or insignificant activities (section 1.6.3) may be identified as groups and not as individual processes or process equipment. The submittal shall be made according to the following schedule:
- 4.1.1 For a Group 1 stationary source, the following:
 - 4.1.1.1 For Category 1 TACs, by December 31, 2006, and
 - 4.1.1.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, by March 31, 2008, and
 - 4.1.2 For a Group 2 stationary source, the following:
 - 4.1.2.1 For Category 1 TACs, by September 30, 2008, and
 - 4.1.2.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, by September 30, 201~~0~~.
- 4.2 If the District determines that the concentration of a TAC in the ambient air is, or may be, greater than the EA goal in section 2.8.1 or 2.8.2 and a potentially responsible entity for the emissions of the TAC is identified, then the Board may require the owner or operator of an identified stationary source to submit the information identified in Section 5 of Regulation 1.06 *Stationary Source Self Monitoring, Emissions Inventory Development, and Reporting* and meet the requirements of sections 4.1, 4.4, and 4.5 of Regulation 5.21 on an accelerated schedule. In this case, the District shall notify the owner or operator in writing and shall specify the dates for complying with these requirements.

- 4.3 If the allowed emissions, or, if the applicable permit does not contain an allowed emission standard, then the potential to emit, of a TAC from a process or process equipment are determined, pursuant to section 4.1, to exceed one or more of the EA goals in section 2.5, but the actual emissions do not exceed these EA goals, then the owner or operator may request, in writing, that the District revise the appropriate permit conditions to reduce the allowable emissions, or establish an allowable emission standard that is consistent with new source review requirements, specifying the new level of allowed emissions. Upon receipt by the District of the request, the new emission standard may be used for demonstrating environmental acceptability and shall be an enforceable requirement of the applicable permit for the affected process and process equipment.
- 4.4 If the allowed emissions of a TAC from a process or process equipment are determined, pursuant to section 4.1, to exceed one or more of the EA goals in section 2.5, and the District has not given approval to exceed those EA goals pursuant to section 2.6, then the owner or operator shall submit to the District a compliance plan and schedule for compliance with the applicable EA goals according to the following schedule:
 - 4.4.1 For a Group 1 stationary source, as follows:
 - 4.4.1.1 For Category 1 TACs, by June 30, 2007, and
 - 4.4.1.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, by March 31, 2009, and
 - 4.4.2 For a Group 2 stationary source, as follows:
 - 4.4.2.1 For Category 1 TACs, by September 30, 2012~~0~~, and
 - 4.4.2.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, by September 30, 2013~~+~~.
- 4.5 A compliance plan required pursuant to section 4.4 shall provide for compliance as soon as practicable but no later than the following dates:
 - 4.5.1 For a Group 1 stationary source, the following:
 - 4.5.1.1 For Category 1 TACs, December 31, 2008, and
 - 4.5.1.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, March 31, 2010, and
 - 4.5.2 For a Group 2 stationary source, the following:
 - 4.5.2.1 For Category 1 TACs, September 30, 2013~~+~~, and
 - 4.5.2.2 For Category 2 TACs and all other applicable TACs pursuant to section 2.4, September 30, 2014~~2~~.
 - 4.5.3 For cause, the District may extend the compliance date of section 4.5.1.1 by up to 6 months and the compliance date in sections 4.5.1.2, 4.5.2.1, and 4.5.2.2 by up to 12 months. To be eligible for this extension, the owner or operator of the process or process equipment shall complete as much of the compliance plan as can be done by the applicable compliance date and submit a written request to the District explaining why the extension is necessary and the actions that were taken to minimize the needed extension.
 - 4.5.4 The District may extend the applicable compliance date of section 4.5.1 or 4.5.2 that would otherwise be applicable to a process or process equipment that is subject to a §112(d) MACT standard, provided that the §112(d) MACT standard is promulgated at the time that the compliance plan is due pursuant to section 4.4. If the compliance date is extended, then the owner or operator shall timely and fully comply with the requirements of the §112(d) MACT standard. An extension of the compliance date

- for the process or process equipment subject to this §112(d) MACT standard does not affect the applicable compliance date of section 4.5.1 or 4.5.2 for any other process or process equipment at the stationary source.
- 4.6 A compliance plan and schedule pursuant to section 4.4 shall, at a minimum, contain the following milestone steps and dates:
 - 4.6.1 Perform an engineering analysis of potential solutions,
 - 4.6.2 Prepare a bid package for vendors for equipment,
 - 4.6.3 Submit to the District a construction permit application for new equipment and any required modifications,
 - 4.6.4 Select a vendor and issue a purchase order for equipment,
 - 4.6.5 Commence construction,
 - 4.6.6 Complete construction,
 - 4.6.7 Prepare and submit a proposed compliance testing protocol to the District for approval,
 - 4.6.8 Perform the required compliance testing,
 - 4.6.9 Prepare and submit a final compliance testing report to the District for approval, and
 - 4.6.10 Submit quarterly progress reports.
 - 4.7 After providing an opportunity for public review and comment, the District may approve a compliance plan and schedule from a stationary source and the approved compliance plan and schedule shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the compliance plan.
 - 4.8 If the District determines, pursuant to the process applicable to section 2.8, that an EA goal in section 2.8.1 or 2.8.2, taking into account a modification of an EA goal approved by the District pursuant to section 2.6, is exceeded, then the following process shall be followed:
 - 4.8.1 The District shall prepare a proposed Risk Reduction Plan (Plan). The Plan shall set forth the information relied upon in making the determination, the assumptions and calculations in support of the Plan, and the analysis and rationale from section 4.8.2. The Plan shall specify the additional reductions from each stationary source contributing to the exceedance of the EA goal that are appropriate to either achieve compliance with the applicable EA goal; reduce the cancer risk, determined pursuant to the process applicable to section 2.8.2, to a level, not to exceed 100×10^{-6} , that would provide an ample margin of safety to the exposed population; or reduce the noncancer risk to a target-organ-specific hazard index that would provide an ample margin of safety to the exposed population,
 - 4.8.2 In determining the additional reductions, the District shall consider the extent to which each contributing process and process equipment has applied T-BAT, the other factors to be considered in sections 2.3 and 2.6, and other factors necessary and appropriate upon which to base a fair, equitable, and effective apportionment of the responsibility for additional reductions. In considering the apportionment for additional reductions, the District shall, in general and in the absence of other relevant factors, apply the following hierarchy:
 - 4.8.2.1 [Reserved]
 - 4.8.2.2 Processes and process equipment that do not apply T-BAT and that contribute significantly to the exceedance of the EA goal, based upon the relative contribution of the process and process equipment to the exceedance,

- 4.8.2.3 Processes and process equipment that apply T-BAT and that contribute significantly to the exceedance of the EA goal, based upon the relative contribution of the process and process equipment to the exceedance,
- 4.8.2.4 Processes and process equipment that do not apply T-BAT and do not contribute significantly to the exceedance of the EA goal, based upon the relative contribution of the process and process equipment to the exceedance, and
- 4.8.2.5 Processes and process equipment that apply T-BAT and do not contribute significantly to the exceedance of the EA goal, based upon the relative contribution of the process and process equipment to the exceedance,
- 4.8.3 Following the opportunity for public review and comment, the District shall take action on the proposed Plan. District action may include, but is not limited to, approval, modification and approval, or denial of the proposed Plan,
- 4.8.4 Within 180 days of District approval of a Plan, the owner or operator of each affected stationary source shall submit a compliance plan and schedule that shall, at a minimum, contain the milestone steps and dates identified in section 4.6. Compliance with the required reductions identified in the approved Plan shall be achieved as soon as practicable but no later than 18 months after District approval of the compliance plan and schedule,
- 4.8.5 After providing an opportunity for public review and comment, the District may approve the compliance plan and schedule from the stationary source, and
- 4.8.6 Any more stringent emission standard, and the schedule for complying with this emission standard, shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.
- 4.9 In the alternative to the provisions of sections 4.1.2, 4.4.2, and 4.5.2 applicable to Group 2 stationary sources, the Board may, by regulation, establish specific requirements for a class of stationary sources. If the Board adopts a new regulation or amends an existing regulation in lieu of requiring compliance with these provisions by individual stationary sources in that class, then the District shall notify the owner or operator of each stationary source in that class that compliance with these provisions is not required.
- 4.10 If the District determines that the presence of 2 or more TACs, at concentrations that comply with the EA goals in sections 2.2, 2.5, and 2.8, would result in a synergistic or additive toxicological effect that may adversely affect human health, or that there is human exposure from routes of exposure other than direct inhalation, then the District shall prepare a proposed Risk Reduction Plan and the procedures specified in section 4.8 shall be followed. Any more stringent emission standard, and a schedule for complying with this emission standard, shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.
- 4.11 Upon written notification by the District that a benchmark ambient concentration established pursuant to Regulation 5.20 for a TAC that is, or may be, emitted by the stationary source has become more stringent, the owner or operator of the stationary source shall, within 6 months of this notification, make a revised determination, according to the procedures in Regulation 5.21, whether the allowed emissions from the stationary source comply with the EA goals in section 2.5 based upon the revised benchmark ambient concentration and submit the results to the District. If one or more of these EA goals is exceeded, then the owner or operator shall, within 18 months of the initial notification, submit a compliance plan and schedule meeting the provisions of

section 4.6, providing for compliance as soon as practicable but no later than 36 months after the initial notification. Upon approval by the District of the compliance plan and schedule, the approved compliance plan and schedule shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the compliance plan.

- 4.12 If a benchmark ambient concentration established pursuant to Regulation 5.20 for a TAC becomes less stringent, the owner or operator may request that an emission standard based upon the more stringent benchmark ambient concentration be revised to reflect compliance with the EA goals based upon the revised benchmark ambient concentration. The District may approve the request and revise the emission standard, provided that the revision complies with all other applicable requirements and the effectiveness of an existing emissions control measure is not reduced or eliminated.
- 4.13 If the District determines, based on ambient air monitoring or modeling of allowed emissions, that the concentration of a TAC in the ambient air resulting from any TAC emission of a stationary source is greater than an EA goal in section 2.5 or 2.8, then the District may require emission reductions of that TAC. In this case, the written notification shall include the date for submittal of a compliance plan and schedule to the District and the date for compliance with the EA goals. Any more stringent emission standard and the compliance schedule shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.
- 4.14 If the owner or operator submits a revised demonstration of compliance with the EA goals in sections 2.2 or 2.5, based upon the use of an EPA-approved dispersion model update or replacement model, that justifies a change to an applicable emission standard for the process or process equipment, then the District may revise the permit emission standard accordingly, consistent with applicable new source review requirements.

SECTION 5 Public Review and Comment; Notification List; and Costs

- 5.1 The District shall maintain a list of persons requesting notice of the receipt of a request for modification of an EA goal and of the opportunities for public review and comment provided by this regulation. Notification may be by U.S. Postal Service or electronic mail. The District shall annually inform the public of the opportunity to be on this notification list. The District may annually inform those on the mailing list of the opportunity to remain on the mailing list, and the District may delete from the list persons who fail to respond to such an inquiry.
- 5.2 In addition to the opportunities for public review and comment provided elsewhere in this regulation, the District shall provide notice and an opportunity for public review and comment, as follows:
 - 5.2.1 For a construction permit application subject to a Section 3 review, the District shall, after making the determination that the submitted application is administratively complete, post in its office and on its web site, www.louisvilleky.gov/APCD/STAR, a list of the processes and process equipment that are identified in the demonstration as de minimis pursuant to Regulation 5.01 section 1.6.5 (5.0 tons per year volatile organic compound surface coating process). Posting shall begin a 30-day opportunity for public review and comment,
 - 5.2.2 For a demonstration of environmental acceptability required by section 4.1, including a list, with applicable documentation, of the processes and process equipment that are

identified in the demonstration as de minimis pursuant to Regulation 5.01 sections 1.6.1 (Material Safety Data Sheet, if de minimis TACs are identified on the MSDS), 1.6.2 (trivial activity, may be identified as groups), 1.6.3 (insignificant activity, may be identified as groups), 1.6.4 (benchmark ambient concentration-based de minimis emission levels), 1.6.6 (liquid fuels), and 1.6.7 (combustion of natural gas):

- 5.2.2.1 The District shall, after making the determination that the submitted demonstration is administratively complete, post in its office and on its web site, www.louisvilleky.gov/APCD/STAR, notice of the receipt of the demonstration. The District shall also provide this notification to each person on the notification list pursuant to section 5.1 and, by post card sent by U.S. Postal Service, to each first- and second-tier property owner relative to the stationary source, as determined by the Louisville Metro Planning and Design Services. Posting shall begin a 30-day opportunity for public review and comment and an opportunity for a public meeting to be scheduled by the District in the evening at a location in the area of the stationary source,
- 5.2.2.2 After determining the approvability of the demonstration of environmental acceptability, the District shall post its determination in its office and on its web site, and notify each person on the section 5.1 notification list and, by post card sent by U.S. Postal Service, each first- and second-tier property owner who requests, within 30 days of the posting in section 5.2.2.1, this subsequent notice, of the District's determination. Posting of the District's determination shall begin a 30-day opportunity for public review and comment, and
- 5.2.2.3 After the opportunity for public review and comment, pursuant to section 5.2.2.2, and making a final determination of the approvability of the demonstration of environmental acceptability, the District shall post its final determination in its office and on its web site, and notify each person on the section 5.1 notification list and, by post card sent by U.S. Postal Service, each first- and second-tier property owner who had timely requested subsequent notice pursuant to section 5.2.2.3, of the District's final determination.
- 5.3 In addition to the methods of providing notice of the opportunity for public review and comment specified in this regulation, legal notice shall be made in accordance with KRS Chapter 424 Legal Notices for the opportunities for public review and comment in the following sections:
 - 5.3.1 Section 2.3.1,
 - 5.3.2 Section 2.6.1,
 - 5.3.3 Section 3.1.2.2,
 - 5.3.4 Section 4.7,
 - 5.3.5 Section 4.8.3, and
 - 5.3.6 Section 5.2.2.2.
- 5.4 The direct costs related to providing notice of the opportunity for public review and comment, including a public meeting or public hearing, pursuant to this regulation, incurred by the District, shall be paid by the owner or operator of the stationary source, except the following:
 - 5.4.1 After June 30, 2007, the post card notification to first- and second-tier property owners pursuant to section 5.2.2, and
 - 5.4.2 The legal notice pursuant to section 4.8.3.

Adopted v1/6-21-05; effective 7-1-05; amended v2/1-17-07, v3/4-18-07, v4/ 09-16-09, v. 5/ 00-00-10.