

[If adopted, this would replace the September 15, 2010 version of Regulation 5.21]

1 **Regulation 5.21 Environmental Acceptability for Toxic Air Contaminants**

2

3 **Louisville Metro Air Pollution Control District**

4 **Jefferson County, Kentucky**

5 **Pursuant To:** KRS Chapter 77 Air Pollution Control

6 **Relates To:** District Regulations 1.02, 1.06 and Part 5

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

11 **Section 1 Applicability**

12 This regulation applies to any process or process equipment at a stationary source that emits, or  
13 may emit, a toxic air contaminant (TAC). This regulation does not apply to stationary sources  
14 defined as exempt in Regulation 5.00.

15 **Section 2 De Minimis Emissions**

16 In determining whether emissions from a process or process equipment meet the environmental  
17 acceptability goals of this regulation, the owner or operator may exclude the following “de  
18 minimis” emissions:

19 2.1 Emissions of a TAC contained in a purchased mixture of chemicals, if the TAC is not  
20 listed in the Material Safety Data Sheet, or if the concentration of the TAC is listed in the  
21 Material Safety Data Sheet as “trace” or as less than:

22 2.1.1 For a TAC determined to be a carcinogen, 0.1% by weight, or

23 2.1.2 For any other TAC, 1.0% by weight.

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- 24 2.2 Emissions from a “trivial activity” defined in Regulation 2.16.
- 25 2.3 Emissions from an “insignificant activity” defined in Regulation 2.16.
- 26 2.4 Allowed emissions of a noncarcinogenic TAC that are less than or equal to both the  
27 pound-per-hour de minimis value and the applicable pound-per-averaging time de  
28 minimis value.
- 29 2.4.1 To derive the pound-per-hour de minimis value, multiply the  $BAC_{NC}$  (in  $\mu\text{g}/\text{m}^3$ )  
30 by the applicable 1-Hour Factor in Regulation 5.22, Section 2, Table 1.
- 31 2.4.2 To derive the pound-per-averaging time de minimis value, multiply the  $BAC_{NC}$   
32 (in  $\mu\text{g}/\text{m}^3$ ) by the applicable Annual, 24-Hour, or 8-Hour Factor in Regulation  
33 5.22, Section 2, Table 1.
- 34 2.5 Allowed emissions of a carcinogenic TAC that are less than or equal to both the pound-  
35 per-hour de minimis value and the corresponding averaging time de minimis value.
- 36 2.5.1 To derive the pound-per-hour de minimis value, multiply the  $BAC_C$  (in  $\mu\text{g}/\text{m}^3$ ) for  
37 the TAC by 0.54 (the 1-Hour Factor in Regulation 5.22, Section 2, Table 1).
- 38 2.5.2 To derive the pound-per-year de minimis value, multiply the  $BAC_C$  (in  $\mu\text{g}/\text{m}^3$ ) by  
39 480 (the Annual Factor in Regulation 5.22, Section 2, Table 1).
- 40 2.6 Emissions from motor vehicle fueling or refueling.
- 41 2.7 Emissions from the combustion of natural gas, liquefied petroleum gas, methane  
42 (including landfill gas), or propane.

### 43 **Section 3 EA Goals**

- 44 3.1 Unless modified pursuant to Section 5, the risk resulting from emissions of TACs at a  
45 stationary source shall not exceed the EA goals in this section or section 3.2.

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	<b>Process or Process Equipment (P/PE)</b>	<b>Applicable TACs</b>	<b>EAG<sub>C</sub> Risk<sup>1,2</sup> (<math>\otimes 10^{-6}</math>)</b>	<b>EAG<sub>NC</sub> HQ<sup>3,4</sup></b>
3.1.1	Individual stationary source, individual P/PE	<b>Individual TAC</b>	1.0	1.0
3.1.2	Individual stationary source, <b>all</b> P/PE	<b>Individual TAC</b>		1.0
3.1.3	Individual stationary source, <b>all</b> P/PE	Total for <b>all applicable TACs</b>	7.5	
3.2	Individual stationary source, <b>all</b> new and modified P/PE	Total for <b>all applicable TACs</b>	3.8	

See Appendix for explanation of notes and equations.

47 3.3 In determining compliance with the EA goals of section 3.1.3 or 3.2 the owner or  
 48 operator may exclude emissions of Category 3 and 4 TACs permitted pursuant to section  
 49 4.11.2.2.

50 3.4 The EA goals in section 3.1 shall apply to the following emissions from a processes or  
 51 process equipment that the District determines does not comply with the general duty  
 52 clause of Regulation 5.01:

53 3.4.1 Emissions of a TAC not listed in Regulation 5.23, or

54 3.4.2 Emissions from a process or process equipment at a stationary source that is not a  
 55 Group 1 or 2 source.

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56 3.5 The EA goals applicable to the risk resulting from emissions of all Category 1-4 TACs  
 57 from all processes and process equipment at multiple sources shall not exceed the  
 58 following EA goals:

59

	<b>Source of Emission</b>	<b>Applicable TACs</b>	<b>EAG<sub>C</sub> Risk (<math>\otimes 10^{-6}</math>)<sup>5</sup></b>	<b>EAG<sub>NC</sub> HQ<sup>6</sup></b>
3.5.1	Applicable processes and process equipment	<b>Individual TAC</b>		1.0
3.5.2	Applicable processes and process equipment	Total for <b>all</b> applicable TACs	10.0	

See Appendix for explanation of notes and equations.

60 3.6 The EA goals of sections 3.1, 3.2 and 3.5 applicable to the ambient air on industrial  
 61 property or public roadways shall be increased by:

62 3.6.1 A factor of 10 for carcinogenic risks (EAG<sub>C</sub>); and

63 3.6.2 A factor of 3 for noncarcinogenic risks (EAG<sub>NC</sub>).

64 3.7 The increases in EA goals in section 3.6 shall have no effect on:

65 3.7.1 The EA goals applicable to any other location, or

66 3.7.2 A modified EA goal approved pursuant to 4.24.

67 3.8 If the risk resulting from the emissions of TACs is determined to be environmentally  
 68 acceptable because the maximum ambient concentration occurs on industrial property or  
 69 a public roadway, the owner or operator of the process or process equipment shall notify  
 70 the District within 30 days of a change in land use of the property from industrial or  
 71 public roadway to residential or commercial and submit a compliance demonstration and  
 72 schedule that includes the actions in section 4.18.

73 **Section 4 EA Demonstrations and Compliance Plans for Permitted Stationary Sources**

74 4.1 In determining environmental acceptability of the emissions of a TAC:

75 4.1.1 The benchmark ambient concentration (BAC) is determined pursuant to Regulation  
76 5.20, and

77 4.1.2 The maximum ambient concentration is determined pursuant to Regulation 5.22.

78 4.2 Environmental acceptability (EA) of the emissions of a TAC, including a determination  
79 that emissions of a TAC are de minimis, may be demonstrated based on:

80 4.2.1 an emission standard,

81 4.2.2 uncontrolled potential to emit (PTE), or

82 4.2.3 an alternative measure, which may include:

83 4.2.3.1 controlled PTE,

84 4.2.3.2 actual emissions,

85 4.2.3.3 limited emissions, or

86 4.2.3.4 throughput or production rate.

87 4.3 An alternative measure that demonstrates EA shall be established as a new emission  
88 standard and incorporated in the permit for the process or process equipment.

89 4.4 Documentation supporting the EA demonstration for each process or process equipment  
90 shall be submitted, including:

91 4.4.1 For any Tier 3 modeling, the printed summary, and

92 4.4.2 For any Tier 4 modeling, the printed output summary and, in electronic format, the  
93 input and output files.

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- 94 4.5 If a process or process equipment does not emit an applicable TAC, the EA  
95 demonstration shall indicate that no applicable TAC is emitted from that process or  
96 process equipment.
- 97 4.6 If the emission of an applicable TAC is de minimis, the applicable provision of Section 2  
98 shall be specified. Processes and process equipment that are trivial or insignificant  
99 activities may be identified as groups rather than as individual processes or process  
100 equipment.
- 101 4.7 When making the EA demonstration, the owner or operator may include the effect of a  
102 Clean Air Act 112(d) maximum achievable control technology (MACT) standard with a  
103 future effective date on the emissions from a process or process equipment, provided that  
104 the change in emissions and the compliance deadline are identified.
- 105 4.8 In the alternative to the provisions of this section applicable to Group 2 stationary  
106 sources, the Board may, by regulation, establish specific requirements for a class of  
107 stationary sources. The District shall notify the owner or operator of each stationary  
108 source in that class of the Board's action.
- 109 4.9 The owner or operator of a stationary source may submit a revised demonstration of  
110 compliance with one or more of the EA goals in sections 3.1 and 3.2 based on the use of  
111 an EPA-approved dispersion model update or replacement model. If the revised EA  
112 demonstration justifies a change to an applicable emission standard, the District may  
113 revise the permitted emission standard accordingly.
- 114 4.10 The owner or operator of a stationary source shall maintain records, including but not  
115 limited to monitoring data, production data and purchasing records, sufficient to

116 demonstrate compliance with applicable EA goals. This information shall be maintained  
117 for five years on a rolling basis and submitted to the District on request.

118 Sections 4.11 - 4.13 apply to new or modified processes or process equipment (as defined in  
119 Regulation 5.00):

120 4.11 Unless modified pursuant to 4.24 or subject to a compliance plan pursuant to this section,  
121 a construction permit for a new or modified process or process equipment at a Group 1 or  
122 2 stationary source shall contain:

123 4.11.1 An emission standard for each Category 1 or 2 TAC emitted that has been  
124 demonstrated to comply with an applicable EA goal in section 3.1 or 3.2;

125 4.11.2 An emission standard for each Category 3 or 4 TAC emitted that has been  
126 demonstrated to comply with either:

127 4.11.2.1 The EA goals in sections 3.1 and 3.2, or

128 4.11.2.2 The general duty clause of Regulation 5.01.

129 4.12 The District shall provide an opportunity for public review and comment prior to issuing  
130 a construction permit pursuant to section 4.11.2.2.

131 4.13 A permitted stationary source that becomes a Group 1 or 2 source shall obtain a  
132 construction permit that contains an emission standard for each Category 1 or 2 TAC that  
133 has been demonstrated to comply with the EA goals in section 3.1.

134 Sections 4.14 - 4.21 apply to existing Group 1 and 2 stationary sources:

135 4.14 An existing Group 1 or 2 stationary source shall determine whether emissions of  
136 Category 1 and 2 TACs from all processes and process equipment at the source comply  
137 with the EA goals in section 3.1 and submit this determination to the District (the EA  
138 demonstration). The source may exclude emissions of a Category 2 TAC that:

- 139 4.14.1 The Group 1 source did not report to EPA for the 2006 TRI, or
- 140 4.14.2 The Group 2 source did not report to EPA for the 2007 TRI.
- 141 4.15 EA demonstrations shall be submitted on the following schedule (past dates are retained
- 142 for reference only):
- 143 4.15.1 By Group 1 stationary sources:
- 144 4.15.1.1 For Category 1 TACs, by December 31, 2006, and
- 145 4.15.1.2 For Category 2 TACs and all other applicable TACs, by March 31, 2008.
- 146 4.15.2 By Group 2 stationary sources:
- 147 4.15.2.1 For Category 1 TACs, by September 30, 2008, and
- 148 4.15.2.2 For Category 2 TACs and all other applicable TACs, by September 30, 2012.
- 149 4.16 If the emissions of a TAC from a process or process equipment are determined to exceed
- 150 one or more of the EA goals in section 3.1, and the District has not approved a
- 151 modification of those goals pursuant to 4.24, the owner or operator shall submit to the
- 152 District a compliance plan and schedule on the following schedule (past dates are
- 153 retained for reference only):
- 154 4.16.1 From a Group 1 stationary source:
- 155 4.16.1.1 For Category 1 TACs, June 30, 2007, and
- 156 4.16.1.2 For Category 2 TACs and all other applicable TACs, by March 31, 2009.
- 157 4.16.2 From a Group 2 stationary source:
- 158 4.16.2.1 For Category 1 TACs, September 30, 2012, and
- 159 4.16.2.2 For Category 2 TACs and all other applicable TACs, by September 30, 2013.
- 160 4.17 A compliance plan required by section 4.16 shall provide for compliance no later than the
- 161 following dates (past dates are retained for reference only):

- 162 4.17.1 For a Group 1 stationary source:
  - 163 4.17.1.1 For Category 1 TACs, December 31, 2008, and
  - 164 4.17.1.2 For Category 2 TACs and all other applicable TACs, by March 31, 2010.
- 165 4.17.2 For a Group 2 stationary source:
  - 166 4.17.2.1 For Category 1 TACs, September 30, 2013, and
  - 167 4.17.2.2 For Category 2 TACs and all other applicable TACs, by September 30, 2014.
- 168 4.18 A compliance plan required by section 4.16 shall propose a schedule by which the source
- 169 will:
  - 170 4.18.1 Perform an engineering analysis of potential solutions,
  - 171 4.18.2 Prepare a bid package for vendors for equipment,
  - 172 4.18.3 Submit a permit application for new equipment and any required modifications to the
  - 173 District,
  - 174 4.18.4 Select a vendor and issue a purchase order for equipment,
  - 175 4.18.5 Commence construction,
  - 176 4.18.6 Complete construction,
  - 177 4.18.7 Prepare and submit a proposed compliance testing protocol to the District for
  - 178 approval,
  - 179 4.18.8 Perform the required compliance testing,
  - 180 4.18.9 Prepare and submit a final compliance testing report to the District for approval, and
  - 181 4.18.10 Submit quarterly progress reports.
- 182 4.19 The District may extend a compliance date in section 4.17 pursuant to a written request
- 183 from the owner or operator that includes:
  - 184 4.19.1 An explanation of why the extension is necessary;

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185 4.19.2 Any actions that have been taken to minimize the needed extension; and

186 4.19.3 A compliance plan and schedule.

187 4.20 After public review and comment, the District may approve the compliance plan. The  
188 approved compliance plan shall be incorporated into the permit for the affected process  
189 or process equipment.

190 4.21 The District may extend a compliance date in section 4.18 for a process or process  
191 equipment that is subject to a MACT standard in effect at the time the compliance plan is  
192 due. The owner or operator shall timely and fully comply with the MACT standard. This  
193 extension shall not affect the compliance date for any other process or process equipment  
194 at the stationary source.

195 Sections 4.22 - 4.24 apply to all sources subject to this regulation:

196 4.22 A new EA demonstration or de minimis determination shall be performed at the time  
197 that:

198 4.22.1 An application to construct or modify a process or process equipment at a Group 1 or  
199 2 stationary source is submitted to the District pursuant to Regulation 2.03, 2.04 or  
200 2.05. The EA demonstration shall be submitted with the construction permit  
201 application.

202 4.22.2 Modification of any physical modeling parameters, such as fencelines or building  
203 heights, that are not otherwise subject to the permit requirements for that facility that  
204 affects the demonstration of compliance, occurs. The EA demonstration shall be  
205 submitted with the operating permit renewal application.

206 4.22.3 A change in a process or process equipment, including raw material or fuel type  
207 substitution, occurs, unless the change meets the conditions of Section 4.23.

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- 208 4.23 Prior approval by the District is not required for a change pursuant to section 4.22.3 if:
- 209 4.23.1 The change does not result in emissions that exceed an EA goal in section 3.1 or 3.2;
- 210 4.23.2 The change does not cause emissions of a TAC to no longer be de minimis;
- 211 4.23.3 A permit modification is not required for the change by the District's regulations; and
- 212 4.23.4 The owner or operator maintains records demonstrating compliance at the time of the
- 213 change and thereafter. Records shall be maintained for 5 years on a rolling basis and
- 214 submitted to the District on request.
- 215 4.24 An updated EA demonstration or de minimis determination for changes pursuant to this
- 216 section shall be submitted within 6 months of the change.

217 **Section 5 Modification of an EA Goal**

- 218 5.1 After providing an opportunity for public review and comment, the District may approve
- 219 a written request from the owner or operator of a process or process equipment to modify
- 220 one or more of the EA goals in section 3.1 or 3.2. As part of the request, the owner or
- 221 operator shall submit a demonstration that the affected process or process equipment
- 222 complies with, or, pursuant to a proposed plan and schedule, will comply with, T-BAT.
- 223 5.2 The T-BAT demonstration shall:
- 224 5.2.1 Include a review of the practices and measures potentially applicable to the process or
- 225 process equipment, including technology transfer, identified from readily available air
- 226 pollution control information, including EPA's RACT/BACT/LAER Clearinghouse,
- 227 5.2.2 Document that the proposed T-BAT reflects the maximum reduction of emissions of,
- 228 and risk from, a TAC that can reasonably be achieved, and
- 229 5.2.3 Justify why another method that would achieve a greater reduction in TAC emissions
- 230 or risk was not chosen.

231 5.3 T-BAT is not required for a process or process equipment that does not individually, or  
232 when aggregated with other processes and process equipment, contribute to the  
233 exceedance of an EA goal in section 3.1.2, 3.1.3, or 3.2. However, a stationary source  
234 may, at its discretion, implement T-BAT for any process or process equipment to meet an  
235 EA goal.

236 5.4 A request to modify an EA goal in section 3.1.1 or 3.2 shall be approved if the District  
237 determines that the T-BAT requirement of section 5.2 is met, or will be met in a timely  
238 manner. Any resulting emission standard and approved plan and schedule for compliance  
239 with T-BAT shall be incorporated into the permit for the affected process or process  
240 equipment.

241 5.5 A request to modify an EA goal in section 3.1.2 or 3.1.3 shall include an evaluation of  
242 costs, technical feasibility, and relevant (including current and up to 25 years in the  
243 future) demographic and land use factors. Relevant factors include the frequency and  
244 duration of public access to the area where the EA goal is exceeded; the nature, type, and  
245 use of the area; and how each relevant factor may change over the 25-year period. In  
246 evaluating future changes, available land use, population, and transportation horizon  
247 projections shall be included. The evaluation may include the results of an EPA-  
248 approved human exposure model and any other relevant factors.

249 5.6 A request to modify the noncancer EA goal ( $EAC_{NC}$ ) in section 3.1.2 shall include a  
250 determination of the target-organ-specific hazard index (TOSHI).

251 5.7 In determining whether to approve a request to modify an EA goal pursuant to section  
252 5.5, the District shall determine whether the T-BAT requirement of section 5.2 is met and  
253 consider, among other factors, costs, technical feasibility, the demographic and land use

254 factors in section 5.5, the TOSHI, the results (if included) of an EPA-approved human  
255 exposure model, and any other relevant factor.

256 5.8 For requested modifications with a hazard quotient that exceeds 1.0 or a cancer risk of up  
257 to  $25 \times 10^{-6}$ , the District shall approve the requested modification if the District determines  
258 that the T-BAT requirement of section 5.2 is met, or will be met in a timely manner, and  
259 the resulting emission standard would provide an ample margin of safety to the exposed  
260 population.

261 5.9 For requested modifications with a cancer risk between  $25 \times 10^{-6}$  and  $100 \times 10^{-6}$ , the  
262 District may approve the requested modification, following an opportunity for public  
263 review and comment and a public hearing, if the District determines that the T-BAT  
264 requirement of section 5.2 is met, or will be met in a timely manner, and the resulting  
265 emission standard would provide an ample margin of safety to the exposed population.

266 5.10 If the District approves a request to modify an EA goal, any resulting emission standard  
267 and approved plan and schedule for compliance with T-BAT shall be incorporated into  
268 the permit for the affected process or process equipment.

269 5.11 If the District approves a modified EA goal, the owner or operator of the affected process  
270 or process equipment shall re-evaluate T-BAT and submit to the District a determination,  
271 meeting the requirements of section 5.2, of whether the approved practices and measures  
272 continue to constitute T-BAT for that process or process equipment. The re-evaluation of  
273 T-BAT shall be included with the next operating permit renewal application that is  
274 required to be submitted to the District at least 3, years after the date of approval of the  
275 current T-BAT requirement, and with the operating permit renewal application every 5  
276 years thereafter.

277 5.12 If the District determines, at any time after approving a modified EA goal, that a revised  
278 T-BAT would achieve greater compliance with the EA goal, the District may require the  
279 owner or operator to implement the revised T-BAT. In making this determination, the  
280 District shall consider the costs relative to the useful life of emission reduction measures  
281 previously required and installed as T-BAT.

282 5.13 If the District requires implementation of a revised T-BAT pursuant to section 5.12, the  
283 District shall notify the owner or operator of the affected process or process equipment of  
284 this determination. The owner or operator shall submit to the District a proposed plan  
285 and schedule for achieving greater compliance with the EA goal. Upon approval by the  
286 District, the compliance plan and schedule shall be incorporated into the permit for the  
287 affected process or process equipment. The revised T-BAT shall be implemented on or  
288 before the expiration date of the current operating permit that expires at least 3, but no  
289 more than 5, years after the date of approval of the current T-BAT requirement and at  
290 least 3 years after notification by the District.

291 5.14 If a process or process equipment subject to T-BAT is modified and the hourly or annual  
292 emissions of a TAC increase, the owner or operator shall submit a construction permit  
293 application with a revised T-BAT analysis.

294 **Section 6 District-initiated Determinations**

295 6.1 If the District determines, based on ambient air monitoring or modeling of emissions, that  
296 the ambient concentration of a TAC emitted by a stationary source exceeds an EA goal in  
297 section 3.1 or 3.5, the District may require the source to reduce emissions of that TAC.  
298 The District shall notify the owner or operator in writing, specifying a date for the source  
299 to submit a compliance plan and schedule with a date to achieve compliance with the EA

300 goal. Any resulting emission standard and compliance plan shall be incorporated into the  
301 permit for the affected facility.

302 6.2 The District may propose a Risk Reduction Plan (Plan) if it determines that:

303 6.2.1 An EA goal in section 3.5 or a modified EA goal approved by the District pursuant to  
304 4.24 is exceeded,

305 6.2.2 The presence of two or more TACs at concentrations that comply with the EA goals  
306 of sections 3.1, 3.2 and 3.5 would result in a synergistic or additive toxicological  
307 effect that may adversely affect human health, or

308 6.2.3 There is human exposure from routes other than direct inhalation.

309 6.3 The Plan shall include:

310 6.3.1 The information the District relied on in making its determination,

311 6.3.2 The assumptions and calculations in support of the Plan,

312 6.3.3 The stationary sources that emit the TAC or TACs that contribute to an exceedance of  
313 the EA goal,

314 6.3.4 The additional emission reductions necessary to:

315 6.3.4.1 Achieve compliance with the EA goal,

316 6.3.4.2 Reduce the cancer risk to a level, not to exceed  $100 \times 10^{-6}$ , that would provide an  
317 ample margin of safety to the exposed population, or

318 6.3.4.3 Reduce the noncancer risk to a target-organ-specific hazard index that would  
319 provide an ample margin of safety to the exposed population.

320 6.4 In determining the additional reductions, the District shall consider the extent to which  
321 each contributing process or process equipment has applied T-BAT, the factors in

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322 sections 5.5 and 5.6, and any other factor necessary and appropriate for a fair, equitable,  
323 and effective apportionment of the responsibility for additional reductions.

324 6.5 In considering the apportionment of additional reductions, the District shall, in general  
325 and in the absence of other relevant factors, apply the following hierarchy:

326 6.5.1 Processes and process equipment that do not apply T-BAT and that contribute  
327 significantly to exceedance of the EA goal, based on the relative contribution of the  
328 process or process equipment to the exceedance;

329 6.5.2 Processes and process equipment that apply T-BAT and that contribute significantly  
330 to exceedance of the EA goal, based on the relative contribution of the process or  
331 process equipment to the exceedance;

332 6.5.3 Processes and process equipment that do not apply T-BAT and do not contribute  
333 significantly to exceedance of the EA goal, based on the relative contribution of the  
334 process or process equipment to the exceedance;

335 6.5.4 Processes and process equipment that apply T-BAT and do not contribute  
336 significantly to exceedance of the EA goal, based on the relative contribution of the  
337 process or process equipment to the exceedance.

338 6.6 The District shall provide an opportunity for the public to review and comment on the  
339 proposed Plan.

340 6.7 Within 180 days of the effective date of a Plan, the owner or operator of each source  
341 required to make additional emission reductions shall submit a compliance plan that  
342 includes the actions in section 4.18. The required reductions shall be achieved no later  
343 than 18 months after the District approves the compliance plan.

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344 6.8 After public review and comment, the District may approve a compliance plan submitted  
345 pursuant to section 6.7. Any more stringent emission standard and compliance schedule  
346 shall be incorporated into the permit for the affected process or process equipment.

347 6.9 Upon written notification by the District that a BAC established pursuant to Regulation  
348 5.20 for a TAC that is emitted by a stationary source has become more stringent, the  
349 owner or operator shall, within 6 months of this notification, submit a revised EA  
350 demonstration to the District. If one or more of the EA goals in section 3.1 is exceeded,  
351 the owner or operator shall, within 18 months of the initial notification, submit a  
352 compliance plan with a schedule for coming into compliance no later than 36 months  
353 after the initial notification. Upon approval by the District, the compliance plan shall be  
354 incorporated into the permit for the affected process or process equipment.

355 6.10 If a BAC established pursuant to Regulation 5.20 for a TAC becomes less stringent, the  
356 owner or operator of a source that emits the TAC may request that an emission standard  
357 based on the more stringent BAC be revised. If the revised standard complies with all  
358 other applicable requirements, the District shall approve the request.

359 **Section 7 Public Review**

360 7.1 The District shall maintain a list of persons who request to be notified when the District  
361 receives a request to modify an EA goal and of the opportunities for public review and  
362 comment provided by this regulation. Notification may be made by email.

363 7.2 An opportunity for public review and comment shall be provided for the following:

364 7.2.1 A compliance plan required pursuant to section 4.17, 6.1 or 6.7;

365 7.2.2 A Risk Reduction Plan pursuant to section 6.2; or

366 7.2.3 A request to modify an EA goal pursuant to 4.24.

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367 7.3 A public hearing noticed in accordance with KRS Chapter 424 *Legal Notices* shall be  
368 provided for a modification requested pursuant to section 5.9.

369 7.4 Costs associated with public notice and a public hearing shall be paid by the owner or  
370 operator of the stationary source, except public notice pursuant to section 6.2 (District-  
371 initiated Risk Reduction Plan).

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## APPENDIX

## NOTES AND EQUATIONS FOR SECTIONS 3.1, 3.2, AND 3.5

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3.1	Process or Process Equipment (P/PE)	Applicable TACs	EAG <sub>C</sub> Risk <sup>1,2</sup> (⊗10 <sup>-6</sup> )	EAG <sub>NC</sub> HQ <sup>3,4</sup>
3.1.1	Individual stationary source, individual P/PE	Individual TAC	1.0	1.0
3.1.2	Individual stationary source, <b>all</b> P/PE	Individual TAC		1.0
3.1.3	Individual stationary source, <b>all</b> P/PE	Total for <b>all applicable</b> TACs	7.5	
3.2	Individual stationary source, <b>all</b> new and modified P/PE	Total for <b>all applicable</b> TACs	3.8	

378 <sup>1</sup>The risk from an individual TAC determined to be a carcinogen from an individual  
379 process or process equipment is derived from the following equation:

380 
$$R_C = \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad [\text{Equation 1}]$$

381 Where:  $R_C$  = The risk of cancer  
382  $i$  = an individual TAC, from  
383  $j$  = an individual new or modified process or process  
384 equipment,

385  $BAC_{C_i}$  = the BAC for the carcinogenic effects of the TAC, and  
386 Maximum concentration = the highest ambient concentration of the TAC, taking into  
387 account the applicable averaging time.

388 <sup>2</sup>The risk from all TACs determined to be carcinogens is the sum of the cancer risks at a  
389 single point from all individual TACs from all applicable processes or process  
390 equipment, derived from the following equation:

391 
$$R_C = \sum_{i=1}^n \sum_{j=1}^m \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad [\text{Equation 2}]$$

392 Where:  $R_C$  = The risk of cancer,  
393  $i$  = an individual TAC, from  
394  $j$  = an individual process or process equipment,  
395  $n$  = the total number of carcinogenic TACs included in the EA  
396 demonstration,  
397  $m$  = the total number of processes or process equipment from  
398 which the TAC may be emitted,

[If adopted, this would replace the September 15, 2010 version of Regulation 5.21]

399  $BAC_C$  = the BAC for the carcinogenic effects of the TAC, and  
 400 Maximum concentration = the ambient concentration of a TAC at the point of  
 401 maximum risk of all applicable “i” emissions of the TAC from all applicable “j”  
 402 processes or process equipment, taking into account the applicable averaging  
 403 time.

404 <sup>3</sup>The risk from the noncarcinogenic effects of an individual TAC from an individual  
 405 process or process equipment is the hazard quotient (HQ) derived from the following  
 406 equation:

$$407 \quad R_{NC} = HQ_i = \frac{\text{Maximum concentration}_{ij}}{BAC_{NC_i}} \quad [\text{Equation 3}]$$

408 Where:  $R_{NC}$  = The noncarcinogenic risk  
 409 i = an individual TAC, from  
 410 j = an individual process or process equipment,  
 411  $BAC_{NC}$  = the BAC for the noncarcinogenic effects of the TAC,  
 412 and

413 Maximum concentration = the highest ambient concentration of a TAC, taking into  
 414 account the applicable averaging time.

415 <sup>4</sup>The risk from the noncarcinogenic effects of an individual TAC at a single point from all  
 416 applicable processes or process equipment is the hazard quotient (HQ) derived from  
 417 the following equation:

$$418 \quad R_{NC} = HQ_i = \sum_{j=1}^m \frac{\text{Maximum concentration}_{ij}}{BAC_{NC_i}} \quad [\text{Equation 4}]$$

419                   Where:  $R_{NC}$        = the noncarcinogenic risk  
 420                                *i*           = an individual TAC, from  
 421                                *j*           = an individual process or process equipment,  
 422                                *m*           = the total number of processes or process equipment  
 423    from which the TAC may be emitted,  
 424                                 $BAC_{NC}$    = the benchmark ambient concentration for the  
 425    noncarcinogenic effects of the TAC determined  
 426    pursuant to Regulation 5.20, and

427                   Maximum concentration = the ambient concentration of a TAC at the point of maximum  
 428                                concentration of the “*i*” emissions of the TAC from all applicable “*j*” processes or  
 429                                process equipment, taking into account the applicable averaging time.

430                   <sup>5</sup>The  $EAG_C$  Risk is in units of risk in one million.  
 431

3.5	Source of Emission	Applicable TACs	$EAG_C$ Risk ( $\otimes 10^{-6}$ ) <sup>5</sup>	$EAG_{NC}$ HQ <sup>6</sup>
3.5.1	Applicable processes and process equipment	Individual TAC		1.0
3.5.2	Applicable processes and process equipment	Total for <b>all</b> applicable TACs	10.0	

432                   <sup>1</sup>The risk from all TACs determined to be carcinogens at a single point from all  
 433                                applicable processes and process equipment is derived from the following equation:  
 434  
 435  
 436

437                   
$$R_C = \prod_{i=1}^n \prod_{j=1}^m \frac{\text{Maximum concentration}_{ij}}{BAC_{C_i}} \quad [\text{Equation 5}]$$

438                   Where:  $R_C$        = the risk of cancer  
 439                                *i*           = an individual carcinogenic TAC, from  
 440                                *j*           = an individual source of emission,  
 441                                *n*           = the total number of carcinogenic TACs included in the EA  
 442    demonstration,  
 443                                *m*           = the total number of emission sources from which  
 444    carcinogenic TAC “*i*” may be emitted,  
 445                                 $BAC_C$    = the BAC for the carcinogenic effects of the TAC, and  
 446                   Maximum concentration = the ambient concentration of a TAC at the point of maximum  
 447                                risk of all applicable “*i*” emissions from all applicable “*j*” sources of emission, taking  
 448                                into account the applicable averaging time .

449 <sup>2</sup>The risk from the noncarcinogenic effects of an individual TAC from all applicable  
 450 processes and process equipment is the Hazard Quotient (HQ) derived from the  
 451 following equation:

452 
$$R_{NC} = HQ_i = \sum_{j=1}^m \frac{\text{Maximum concentration}_{ij}}{BAC_{NCi}} \quad [\text{Equation 6}]$$

453 Where:  $R_{NC}$  = the noncarcinogenic risk  
 454  $i$  = an individual TAC, from  
 455  $j$  = an individual source of emission,  
 456  $m$  = the total number of sources of emission from which  
 457 TAC “i” may be emitted,  
 458  $BAC_{NC}$  = the BAC for the noncarcinogenic effects of the TAC,  
 459 and  
 460 Maximum concentration = the ambient concentration of the TAC at the point of  
 461 maximum concentration of the “i” emissions from all applicable “j” emission sources,  
 462 taking into account the applicable averaging time.

463 <sup>3</sup>The EAG<sub>C</sub> Risk is in units of risk in one million.

464  
 465 Adopted v1/6-21-05; effective 7-1-05; amended v2/1-17-07, v3/4-18-07, v4/9-16-09, v5/9-15-  
 466 -10, v6/  
 467