

## Rule 3011

### Greenhouse Gas Provisions of Federal Operating Permits

#### (A) Purpose

- (1) The purpose of this rule is to provide the provisions necessary for the District to incorporate requirements for the regulation of Greenhouse Gases (GHGs) into Federal Operating Permits (FOPs) issued pursuant to this regulation.

#### (B) Applicability

- (1) This rule shall apply to:
  - (a) Any existing Major Facility as defined in District Rule 3001(S) which is otherwise subject to this Regulation XXX as of January 1, 2011.
  - (b) Any Major GHG Facility not otherwise subject to Regulation XXX on or after July 1, 2011.

#### (C) Definitions

For the purposes of this rule, the definitions contained in District Rule 3001 shall apply unless a term is otherwise defined herein.

- (1) “Applicable GHG Requirement” – Any of the following requirements:
  - (a) Any Applicable Requirement as defined in District Rule 3001(G) which specifically includes Greenhouse Gases.
  - (b) Any standard or other requirement promulgated by USEPA specifically relating to Greenhouse Gases.
- (2) “CO<sub>2</sub> Equivalent Emissions (CO<sub>2</sub>e)” – The sum of the adjusted emissions of each of the six individual GHG as defined below, where the adjusted emissions for each individual GHG are equal to the mass emissions of that GHG multiplied by the global warming potential as listed in Appendix A of this rule.
- (3) “Greenhouse Gases” (GHGs) – An air pollutant consisting of the aggregate group of any of the following: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and/or sulfur hexafluoride (SF<sub>6</sub>).
- (4) “Major GHG Facility” – Any Facility which emits or has the Potential to Emit during any twelve (12) month period greater than both the following amounts:
  - (a) 100 tons GHGs without consideration of the GHGs global warming potential as listed in Appendix A of District Rule 3011; and

- (b) 100,000 tons CO<sub>2</sub>e.

## (D) Requirements

### (1) Applications, Modifications and Reopenings:

- (a) Any application for an FOP submitted pursuant to District Rule 3002 submitted on or after the applicability date set forth in section (B) above shall include all Applicable GHG Requirements.
- (b) Any application for an FOP which has been submitted and deemed complete pursuant to District Rule 3002 but for which a preliminary determination has not yet been issued pursuant to District Rule 3003(B)(1) shall be modified to update the application with GHG emission data and include all Applicable GHG Requirements.
- (c) Any request for modification of an FOP submitted pursuant to District Rule 3005 on or after the applicability date set forth in section (B) above shall include GHG emission data and all Applicable GHG Requirements.
- (d) Any reopening of a FOP pursuant to District Rule 3006 on or after the applicability date set forth in section (B) above shall include GHG emission data and all Applicable GHG Requirements in any subsequent reissuance of the FOP.
- (e) An existing facility without an FOP shall submit an application in accordance with District Rule 3002 which includes GHG emission data and all Applicable GHG Requirements no later than twelve (12) months after becoming subject to this rule.
- (f) A new Major GHG Facility shall submit an application in accordance with Rule 3002 which includes GHG emission data and all Applicable GHG Requirements subject to the timing provisions set forth in District Rule 3002 (B)(3)(c).

### (2) Federal Operating Permits

- (a) Any Applicable GHG Requirement shall be included in the FOP in the same manner and to the same extent as any other Applicable Requirement pursuant to District Rule 3003.

### (3) Enforceability

- (a) Once issued, any FOP containing Applicable GHG Requirements and conditions derived there from is enforceable to the same manner and to the same extent as any other FOP and its conditions.

See SIP Table at <http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=921>

## Appendix A

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124-38-9	CO <sub>2</sub>	1
Methane	74-82-8	CH <sub>4</sub>	21
Nitrous oxide	10024-97-2	N <sub>2</sub> O	310
HFC-23	75-46-7	CHF <sub>3</sub>	11,700
HFC-32	75-10-5	CH <sub>2</sub> F <sub>2</sub>	650
HFC-41	593-53-3	CH <sub>3</sub> F	150
HFC-125	354-33-6	C <sub>2</sub> HF <sub>5</sub>	2,800
HFC-134	359-35-3	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	1,000
HFC-134a	811-97-2	CH <sub>2</sub> FCF <sub>3</sub>	1,300
HFC-143	430-66-0	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	300
HFC-143a	420-46-2	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	3,800
HFC-152	624-72-6	CH <sub>2</sub> FCH <sub>2</sub> F	53
HFC-152a	75-37-6	CH <sub>3</sub> CHF <sub>2</sub>	140
HFC-161	353-36-6	CH <sub>3</sub> CH <sub>2</sub> F	12
HFC-227ea	431-89-0	C <sub>3</sub> HF <sub>7</sub>	2,900
HFC-236cb	677-56-5	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1,340
HFC-236ea	431-63-0	CHF <sub>2</sub> CHFCF <sub>3</sub>	1,370
HFC-236fa	690-39-1	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	6,300
HFC-245ca	679-86-7	C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	560
HFC-245fa	460-73-1	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	1,030
HFC-365mfc	406-58-6	CH <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	794
HFC-43-10mee	138495-42-8	CF <sub>3</sub> CFHCFHCF <sub>2</sub> CF <sub>3</sub>	1,300
Sulfur hexafluoride	2551-62-4	SF <sub>6</sub>	23,900
Trifluoromethyl sulphur pentafluoride	373-80-8	SF <sub>5</sub> CF <sub>3</sub>	17,700
Nitrogen trifluoride	7783-54-2	NF <sub>3</sub>	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF <sub>4</sub>	6,500
PFC-116 (Perfluoroethane)	76-16-4	C <sub>2</sub> F <sub>6</sub>	9,200
PFC-218 (Perfluoropropane)	76-19-7	C <sub>3</sub> F <sub>8</sub>	7,000
Perfluorocyclopropane	931-91-9	C-C <sub>3</sub> F <sub>6</sub>	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C <sub>4</sub> F <sub>10</sub>	7,000
Perfluorocyclobutane	115-25-3	C-C <sub>4</sub> F <sub>8</sub>	8,700
PFC-4-1-12 (Perfluoropentane)	678-26-2	C <sub>5</sub> F <sub>12</sub>	7,500

PFC-5-1-14 (Perfluorohexane)	355-42-0	C <sub>6</sub> F <sub>14</sub>	7,400
PFC-9-1-18	306-94-5	C <sub>10</sub> F <sub>18</sub>	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	CHF <sub>2</sub> OCHClCF <sub>3</sub>	350
HFE-43-10pccc (H-Galden 1040x)	E1730133	CHF <sub>2</sub> OCF <sub>2</sub> OC <sub>2</sub> F <sub>4</sub> OCHF <sub>2</sub>	1,870
HFE-125	3822-68-2	CHF <sub>2</sub> OCF <sub>3</sub>	14,900
HFE-134	1691-17-4	CHF <sub>2</sub> OCHF <sub>2</sub>	6,320
HFE-143a	421-14-7	CH <sub>3</sub> OCF <sub>3</sub>	756
HFE-227ea	2356-62-9	CF <sub>3</sub> CHFOCF <sub>3</sub>	1,540
HFE-236ca12 (HG-10)	78522-47-1	CHF <sub>2</sub> OCF <sub>2</sub> OCHF <sub>2</sub>	2,800
HFE-236ea2 (Desflurane)	57041-67-5	CHF <sub>2</sub> OCHF <sub>2</sub> CF <sub>3</sub>	989
HFE-236fa	20193-67-3	CF <sub>3</sub> CH <sub>2</sub> OCF <sub>3</sub>	487
HFE-245cb2	22410-44-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>3</sub>	708
HFE-245fa1	84011-15-4	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>3</sub>	286
HFE-245fa2	1885-48-9	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	659
HFE-254cb2	425-88-7	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub>	359
HFE-263fb2	460-43-5	CF <sub>3</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-329mcc2	67490-36-2	CF <sub>3</sub> CF <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	919
HFE-338mcf2	156053-88-2	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	552
HFE-338pcc13 (HG-01)	188690-78-0	CHF <sub>2</sub> OCF <sub>2</sub> CF <sub>2</sub> OCHF <sub>2</sub>	1,500
HFE-347mcc3	28523-86-6	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	575
HFE-347mcf2	E1730135	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CHF <sub>2</sub>	374
HFE-347pcf2	406-78-0	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	580
HFE-356mec3	382-34-3	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	101
HFE-356pcc3	160620-20-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	110
HFE-356pcf2	E1730137	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	265
HFE-356pcf3	35042-99-0	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	502
HFE-365mcf3	378-16-5	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-374pc2	512-51-6	CH <sub>3</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	557
HFE-449sl (HFE-7100) Chemical blend	163702-07-6 163702-08-7	C <sub>4</sub> F <sub>9</sub> OCH <sub>3</sub> (CF <sub>3</sub> ) <sub>2</sub> CF <sub>2</sub> OCH <sub>3</sub>	297
HFE-569sf2 (HFE-7200) Chemical blend	163702-05-4 163702-06-5	C <sub>4</sub> F <sub>9</sub> OC <sub>2</sub> H <sub>5</sub> (CF <sub>3</sub> ) <sub>2</sub> CF <sub>2</sub> OC <sub>2</sub> H <sub>5</sub>	59
Sevoflurane	28523-86-6	CH <sub>2</sub> FOCH(CF <sub>3</sub> ) <sub>2</sub>	345
HFE-356mm1	13171-18-1	(CF <sub>3</sub> ) <sub>2</sub> CHOCH <sub>3</sub>	27
HFE-338mmz1	26103-08-2	CHF <sub>2</sub> OCH(CF <sub>3</sub> ) <sub>2</sub>	380
(Octafluorotetramethyl- ene)hydroxymethyl group	NA	X-(CF <sub>2</sub> ) <sub>4</sub> CH(OH)-X	73

HFE-347mmyl	22052-84-2	CH <sub>3</sub> OCF(CF <sub>3</sub> ) <sub>2</sub>	343
Bis(trifluoromethyl)-methanol	920-66-1	(CF <sub>3</sub> ) <sub>2</sub> CHOH	195
2,2,3,3,3-pentafluoropropanol	422-05-9	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OH	42
PFPME	NA	CF <sub>3</sub> OCF(CF <sub>3</sub> )CF <sub>2</sub> OCF <sub>2</sub> O CF <sub>3</sub>	10,300

Source: 40 CFR 98 Subpart A Table A-1

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