

June 11, 2009

SUMMARY OF EPA EMISSION TEST METHODS
Title 40
Office of Air Quality Planning and Standards

<u>Method</u>	<u>Reference</u>	<u>Description</u>
<u>Part 51, Appendix M</u>		
201	55 FR 14246 04/17/90	PM-10 (EGR procedure)
201A	55 FR 14246 04/17/90	PM-10 (CSR procedure)
201A	55 FR 24687 06/18/90	Correction of equations
201A P	74 FR 12970 03/25/09	Revisions
201	55 FR 37606 09/12/90	Correction of equations
202	56 FR 65433 12/17/91	Condensable PM
202 P	74 FR 12970 03/25/09	Revisions
203 P	57 FR 46114 10/07/92	COMS QA for compliance (see Part 60, App F, Proc 3)
203A P	58 FR 61640 11/22/93	Visible Emissions - 2-6 min avg
203A	71 FR 55119 09/21/06	Visible Emissions - 2-6 min avg
203B P	58 FR 61640 11/22/93	Visible Emissions - time exceptions
203B	71 FR 55119 09/21/06	Visible Emissions - time exceptions
203C P	58 FR 61640 11/22/93	Visible Emissions - instantaneous
203C	71 FR 55119 09/21/06	Visible Emissions - instantaneous
204	62 FR 32500 06/16/97	VOC Capture Efficiency
204A	62 FR 32500 06/16/97	VOC Capture Efficiency
204B	62 FR 32500 06/16/97	VOC Capture Efficiency
204C	62 FR 32500 06/16/97	VOC Capture Efficiency
204D	62 FR 32500 06/16/97	VOC Capture Efficiency
204E	62 FR 32500 06/16/97	VOC Capture Efficiency
204F	62 FR 32500 06/16/97	VOC Capture Efficiency
205	59 FR 19590 05/30/94	Dilution calibration verification
206	(Now CTM-027)	Ammonia (NH ₃)
207 P	62 FR 64532 12/08/97	Isocyanates (never finalized)
207	73 FR 30775 05/29/08	Presurvey procedure for corn wet-milling
208 Tentative		VOC from Hot Mix Asphalt Dryers

Part 60, Appendix A

1-8	42 FR 41754 08/18/77 43 FR 11984 03/23/78	Velocity, Orsat, PM, SO ₂ , NO _x , etc. Corrections and amendments to M1 thru 8
1-24	52 FR 34639 09/14/87 52 FR 42061 11/02/87	Technical corrections Corrections
2-25	55 FR 47471 11/14/90	Technical amendments
1-29 P	62 FR 45639 08/27/97	Reformat and revise methods
1-29	65 FR 61744 10/17/02	Reformat and revise methods
1	48 FR 45034 09/30/83	Reduction of number of traverse points
1	51 FR 20286 06/04/86	Alternative procedure for site selection
1A	54 FR 12621 03/28/89	Traverse points in small ducts
2A	48 FR 37592 08/18/83	Flow rate in small ducts - vol. meters
2B	48 FR 37594 08/18/83	Flow rate - stoichiometry
2C	54 FR 12621 03/28/89	Flow rate in small ducts - std. pitot
2D	54 FR 12621 03/28/89	Flow rate in small ducts - rate meters
2E	61 FR 9929 03/12/96	Flow rate from landfill wells
2F	64 FR 26484 05/14/99	3D pitot for velocity
2G	64 FR 26484 05/14/99	2D pitot for velocity
2H	64 FR 26484 05/14/99	Velocity decay near the stack wall
3	55 FR 05211 02/14/90	Molecular weight
3/3B	55 FR 18876 05/07/90	Method 3B applicability
3A	51 FR 21164 06/11/86	Instrumental method for O ₂ and CO ₂
3A P	68 FR 58838 10/10/03	Proposed revisions
3A	71 FR 28082 05/15/06	Promulgated revisions
3A	73 FR 29691 05/22/08	Final technical corrections
3B	55 FR 05211 02/14/90	Orsat for correction factors and excess air
3C	61 FR 9929 03/12/96	Gas composition from landfill gases
3	48 FR 49458 10/25/83	Addition of QA/QC
4	48 FR 55670 12/14/83	Addition of QA/QC

5	48 FR 55670 12/14/83	Addition of QA/QC
5	45 FR 66752 10/07/80	Filter specification change
5	48 FR 39010 08/26/83	DGM revision
5	50 FR 01164 01/09/85	Incorp. DGM and probe calibration procedures
5	52 FR 09657 03/26/87	Use of critical orifices as calibration standards
5	52 FR 22888 06/16/87	Corrections
5A	47 FR 34137 08/06/82	PM from asphalt roofing (Proposed as M26)
5A	51 FR 32454 09/12/86	Addition of QA/QC
5B	51 FR 42839 11/26/86	Nonsulfuric acid PM
5C	Tentative	PM from small ducts
5D	49 FR 43847 10/31/84	PM from fabric filters
5D	51 FR 32454 09/12/86	Addition of QA/QC
5E	50 FR 07701 02/25/85	PM from fiberglass plants
5F	51 FR 42839 11/26/86	PM from FCCU
5F	53 FR 29681 08/08/88	Barium titration procedure
5G	53 FR 05860 02/26/88	PM from wood stove - dilution tunnel
5H	53 FR 05860 02/26/88	PM from wood stove - stack
5I	64 FR 53027 09/30/99	PM for RATA of PM CEMS
6	49 FR 26522 06/27/84	Addition of QA/QC
6	48 FR 39010 08/26/83	DGM revision
6	52 FR 41423 10/28/87	Use of critical orifices for FR/vol meas
6A	47 FR 54073 12/01/82	SO ₂ /CO ₂ - manual method
6B	47 FR 54073 12/01/82	Auto SO ₂ /CO ₂
6A/B	49 FR 09684 03/14/84	Incorp. coll. test changes
6A/B	51 FR 32454 09/12/86	Addition of QA/QC
6C	51 FR 21164 06/11/86	Instrumental method for SO ₂
6C	52 FR 18797 05/27/87	Corrections
6C P	68 FR 58838 10/10/03	Proposed revisions
6C	71 FR 28082 05/15/06	Promulgated revisions
6C	73 FR 29691 05/22/08	Final technical corrections
7	49 FR 26522 06/27/84	Addition of QA/QC
7A	48 FR 55072 12/08/83	Ion chromatograph NO _x analysis
7A	53 FR 20139 06/02/88	ANPRM
7A	55 FR 21752 05/29/90	Revisions
7B	50 FR 15893 04/23/85	UV NO _x analysis for nitric acid plants
7A/B	Tentative	High SO ₂ interference

7C	49 FR 38232 09/27/84	Alkaline permanganate/colorimetric for NO _x
7D	49 FR 38232 09/27/84	Alkaline permanganate/IC for NO _x
7E	51 FR 21164 06/11/86	Instrumental method for NO _x
7E P	68 FR 58838 10/10/03	Proposed revisions
7E	71 FR 28082 05/15/06	Promulgated revisions
7E	73 FR 29691 05/22/08	Final technical corrections
8	36 FR 24876 12/23/71	Sulfuric acid mist and SO ₂
8	42 FR 41754 08/18/77	Addition of particulate and moisture
8	43 FR 11984 03/23/78	Miscellaneous corrections
9	39 FR 39872 11/12/74	Opacity
9A	46 FR 53144 10/28/81	LIDAR opacity; called Alternative 1
10	39 FR 09319 03/08/78	CO
10	53 FR 41333 10/21/88	Alternative trap
10 P	68 FR 58838 10/10/03	Proposed revisions
10	71 FR 28082 05/15/06	Promulgated revisions
10	73 FR 29691 05/22/08	Final technical revisions
10A	52 FR 30674 08/17/87	Colorimetric method for PS-4
10A	52 FR 33316 09/02/87	Correction notice
10B	53 FR 41333 10/21/88	GC method for PS-4
11	43 FR 01494 01/10/78	H ₂ S
12	47 FR 16564 04/16/82	Pb
12	49 FR 33842 08/24/84	Incorp. method of additions
13A	45 FR 41852 06/20/80	F - colorimetric method
13B	45 FR 41852 06/20/80	F - SIE method
13A/B	45 FR 85016 12/24/80	Corrections to M13A and M13B
14	45 FR 44202 06/30/80	F from roof monitors
14A	62 FR 52383 10/07/97	F from roof monitors - Alcan cassettes
15	43 FR 10866 03/15/78	TRS from petroleum refineries
15	54 FR 46236 11/02/89	Revisions
15	54 FR 51550 12/15/89	Correction notice
15A	52 FR 20391 06/01/87	TRS alternative/oxidation

16	43 FR 07568 02/23/78	TRS alternative
16	43 FR 34784 08/07/78	Amendments to M16, H ₂ S loss after filters
16	44 FR 02578 01/12/79	Amendments to M16, SO ₂ scrubber added
16	54 FR 46236 11/02/89	Revisions
16	55 FR 21752 05/29/90	Correction of figure ($\pm 10\%$)
16A	50 FR 09578 03/08/85	TRS alternative
16A	52 FR 36408 09/29/87	Cylinder gas analysis alternative method.
16B	52 FR 36408 09/29/87	TRS alternative/GC analysis of SO ₂
16A/B	53 FR 02914 02/02/88	Corrections to M16A/B
17	43 FR 07568 02/23/78	PM, in-stack
18	48 FR 48344 10/18/83	VOC, general GC method
18	49 FR 22608 05/30/84	Corrections to M18
18	52 FR 51105 02/19/87	Revisions to improve method
18	52 FR 10852 04/03/87	Corrections
18	59 FR 19308 04/22/94	Revisions to improve QA/QC
19	44 FR 33580 06/11/79	F-factor, coal sampling
19	52 FR 47826 12/16/87	M19A incorporated into M19
19	48 FR 49460 10/25/83	Corr. to F factor equations and F _c value
20	44 FR 52792 09/10/79	NO _x from gas turbines
20	47 FR 30480 07/14/82	Corrections and amendments
20	51 FR 32454 09/12/86	Clarifications
20	P 68 FR 58838 10/10/03	Proposed revisions
20	71 FR 28082 05/15/06	Promulgated revisions
20	73 FR 29691 05/22/08	Final technical corrections
21	48 FR 37598 08/18/83	VOC leaks
21	49 FR 56580 12/22/83	Corrections to Method 21
21	55 FR 25602 06/22/90	Clarifying revisions
22	47 FR 34137 08/06/82	Fugitive VE
22	48 FR 48360 10/18/83	Add smoke emission from flares
23	56 FR 5758 02/13/91	Dioxin/dibenzo furan
23	P 60 FR 28378 05/31/95	Revisions and corrections

24	45 FR 65956 10/03/80	Solvent in surface coatings
24A	47 FR 50644 11/08/82	Solvent in ink (Prop. as M-29)
24	Tentative	Solvent in water-borne coatings
24	57 FR 30654 07/10/92	Multicomponent coatings
24	60 FR 47095 09/11/95	Radiation-cured coatings
25	45 FR 65956 10/03/80	TGNMO
25	53 FR 04140 02/12/88	Revisions to improve method
25	53 FR 11590 04/07/88	Correction notice
25A	48 FR 37595 08/18/83	TOC/FID
25B	48 FR 37597 08/18/83	TOC/NDIR
25C	61 FR 9929 03/12/96	VOC from landfills
25D	59 FR 19311 04/22/94	VO from TSDf - purge procedure
25E	59 FR 62896 12/06/94	VO from TSDf - vapor pressure procedure
26	56 FR 5758 02/13/91	HCl
26	57 FR 24550 06/10/92	Corrections to M26
26	59 FR 19309 04/22/94	Additions to M26 of halogens, other hydrogen halides
26A	59 FR 19309 04/22/94	Isokinetic HCl, halogens, hydrogen halides
27	48 FR 37597 08/18/83	Tank truck leaks
28	53 FR 05860 02/26/88	Wood stove certification
28A	53 FR 05860 02/26/88	Air to fuel ratio
29	61 FR 18262 04/25/96	Multiple metals
29	63 FR 06493 02/09/98	Amends promulgation dates
30A	72 FR 51494 09/07/07	Instrumental method for vapor phase mercury
30B	72 FR 51494 09/07/07	Sorbent trap method for vapor phase mercury
30A/B	72 FR 55278 09/28/07	Corrections to M30A/B

Part 60, Appendix B

PS-2 - 9 P	62 FR 45639 08/27/97	Reformat and revise performance specs
PS-2 - 9	65 FR 61744 10/17/02	Reformat and revise performance specs
PS-1	48 FR 13322 03/30/83	Opacity
PS-1 P	59 FR 60585 11/25/94	Revisions
PS-1	65 FR 48914 08/10/00	Revisions, final rule
PS-2	48 FR 23608 05/25/83	SO ₂ and NO _x
PS 1-5	55 FR 47471 11/14/91	Technical amendments

PS-3	48 FR 23608 05/25/83	CO ₂ and O ₂
PS-4	50 FR 31700 08/05/85	CO
PS-4A	56 FR 5526 02/11/91	CO for MWC
PS-4B P	61 FR 17495 04/19/96	CO and O ₂ for HWI (BIF rules)
PS-4B	64 FR 53032 09/30/99	CO and O ₂ for HWI (BIF rules)
PS-5	48 FR 32984 07/20/83	TRS
PS-6	53 FR 07514 03/09/88	Velocity and mass emission rate
PS-7	55 FR 40171 10/02/90	H ₂ S
PS-8	59 FR 64580 12/15/94	VOC CEMS
PS-8A P	61 FR 17495 04/19/96	VOC CEMS for HWI (BIF rules)
PS-8A	64 FR 53033 09/30/99	VOC CEMS for HWI (BIF rules)
PS-9	59 FR 64580 12/15/94	GC CEMS
PS-10 P	61 FR 17495 04/19/96	Metals CEMS (HWC MACT)
PS-11	69 FR 1786 01/12/04	PM CEMS
PS-11A P	61 FR 17495 04/19/96	PM CEMS (HWC MACT)
PS-12 P	61 FR 17495 04/19/96	Hg CEMS (HWC MACT)
PS-12A	70 FR 28606 05/18/05	Hg CEMS (Coal-fired Boilers) - Vacated
PS-12A P	74 FR 21136 05/06/09	Hg CEMS
PS-12B P	74 FR 21136 05/06/09	Sorbent trap Hg monitoring
PS-13 P	61 FR 17495 04/19/96	HCl CEMS (HWC MACT)
PS-14 P	61 FR 17495 04/19/96	Cl CEMS (HWC MACT)
PS-15 P	62 FR 45372 08/27/97	FTIR CEMS
PS-15	65 FR 61744 10/17/00	FTIR CEMS
PS-16 P	70 FR 45608 08/08/05	Predictive Emissions Monitoring Systems (PEMS)
PS-16	74 FR 12575 03/25/09	PEMS

Part 60, Appendix F

Proc 1	52 FR 21003 06/04/87	Quality assurance (QA) for CEMS
Proc 1	56 FR 5527 02/11/91	Revisions
Proc 2	69 FR 1768 01/12/04	QA for PM CEMS
Proc 3 P	68 FR 24692 05/08/03	QA for COMS
Proc 4 P	73 FR 59956 10/09/08	QA for parameter monitoring
Proc 5 P	74 FR 21136 05/06/09	QA for Hg CEMS

Part 60, Appendix J

App-J 55 FR 33925 08/20/90 Wood stove thermal efficiency

Alternative Procedures and Miscellaneous

48 FR 44700 09/29/83 S-Factor method for sulfuric acid plants
48 FR 48669 10/20/83 Corrections to S-Factor publication
49 FR 30672 07/31/84 Add fuel analysis procedures for gas turbines

51 FR 21762 06/16/86 Alternative PST for low level concentrations
54 FR 46234 11/02/89 Misc. revisions to Appendix A, 40 CFR Part 60
55 FR 40171 10/02/90 Monitoring revisions to Subpart J (Petr. Ref.)

Part 60

54 FR 06660 02/14/89 Test methods & procedures revisions
54 FR 21344 05/17/89 Correction notice
54 FR 27015 06/27/89 Correction notice

Part 61, Appendix B

101-111 P 62 FR 45639 08/27/97 Reformat, revise, amend methods

101 47 FR 24703 06/08/82 Hg in air streams
101A 47 FR 24703 06/08/82 Hg in sewage sludge incinerators
101A 61 FR 18262 04/25/96 Revisions - consistency with M29
101 49 FR 35768 09/12/84 Corrections to M101 and 101A
102 47 FR 24703 06/08/82 Hg in H₂ streams
103 48 FR 55266 12/09/83 Revised Be screening method
104 48 FR 55268 12/09/83 Revised beryllium method

105 40 FR 48299 10/14/75 Hg in sewage sludge
105 49 FR 35768 09/12/84 Revised Hg in sewage sludge
106 47 FR 39168 09/07/82 Vinyl chloride

107 47 FR 39168 09/07/82 VC in process streams
107 52 FR 20397 06/01/87 Alternative calibration procedure
107A 47 FR 39485 09/08/82 VC in process streams

108	51 FR 28035 08/04/86	Inorganic arsenic
108A	51 FR 28035 08/04/86	Arsenic in ore samples
108B	51 FR 22026 05/31/90	Arsenic in ore alternative
108C	55 FR 22026 05/31/90	Arsenic in ore alternative
108B/C	55 FR 32913 08/13/90	Correction notice
111	50 FR 05197 02/06/85	Polonium-210
114	54 FR 51695 12/15/89	Monitoring of radionuclides
115	54 FR 51702 12/15/89	Radon-222

Part 61

53 FR 36972 09/23/88	Corrections
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Part 63 Appendix A

303-306 P	62 FR 45639 08/27/97	Reformat and revise methods
303-306	65 FR 61744 10/17/02	Reformat and revise methods
301	57 FR 61970 12/29/92	Field data validation protocol
301 P	69 FR 76642 12/22/04	Revisions
302		(Reserved)
303	58 FR 57898 10/27/93	Coke oven door emissions
304A	62 FR 2793 01/17/97	Biodegradation rate (vented)
304B	62 FR 2793 01/17/97	Biodegradation rate (enclosed)
305	59 FR 19590 04/22/94	Compound specific liquid waste
306	60 FR 4948 01/25/95	Chromium from electroplaters/anodizers
306A	60 FR 4948 01/25/95	Simplified chromium sampling from electroplaters/ anodizers
306B	60 FR 4948 01/25/95	Surface tension of chromium suppressors
307	59 FR 61801 12/02/94	Solvent degreaser VOC
308 P	58 FR 66079 12/17/93	Methanol
308	63 FR 18504 04/15/98	Methanol (Pulp and Paper MACT I)
309 P	59 FR 29216 06/04./94	Aerospace solvent recovery material balance
310A	62 FR 12546 03/17/97	Residual hexane in EPDM rubber
310B	62 FR 12546 03/17/97	Residual hexane in EPDM rubber
310C	62 FR 12546 03/17/97	Residual hexane in EPDM rubber

311		60 FR 62930 12/07/95	VOC HAPS in furniture coatings
312A		62 FR 12546 03/17/97	Residual styrene in SBR rubber
312B		62 FR 12546 03/17/97	Residual styrene in SBR rubber
312C		62 FR 12546 03/17/97	Residual styrene in SBR rubber
313A		62 FR 12546 03/17/97	Residual styrene in PBR rubber
313B		62 FR 12546 03/17/97	Residual styrene in PBR rubber
314		Tentative	Halogenated compounds in solvents
315		62 FR 52418 10/07/97	MeCl-extractable organic matter
316	P	62 FR 15257 03/31/97	Formaldehyde - manual method
317		Tentative	Phenol - manual method
318	P	62 FR 52266 03/31/97	Extractive FTIR for formaldehyde, phenol, methanol
319	P	61 FR 55862 10/29/96	Filter efficiency; paint over-spray
319		63 FR 46525 03/27/98	Filter efficiency, paint over-spray
320		64 FR 31898 06/14/99	Extractive FTIR
321		64 FR 31898 06/14/99	Extractive FTIR for HCl from Portland cement kilns
322	P	63 FR 14244 03/24/98	GFC/IR for HCl from Portland cement kilns
323	P	68 FR 1925 01/14/03	Formaldehyde from natural gas-fired sources

P = Proposal

Tentative = Under evaluation