

**APPENDIX A**

**MOBILE SOURCE CONTROL PROGRAMS APPLICABLE TO TEXAS**

2014-029-SIP-NR

Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
Revised: April 23, 2015

Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																																									
<i>On-Road Sources: Gasoline Vehicles</i>																																													
Passenger cars and Light-duty trucks	Vehicle emissions inspection/maintenance (I/M) testing program <ul style="list-style-type: none"> <li>Requires regular inspection of vehicles 2–24 years old in affected counties. Vehicles must be inspected through Department of Public Safety–certified inspection stations for emissions of nitrogen oxide (NO<sub>x</sub>), volatile organic compounds (VOC) and carbon monoxide (CO).</li> </ul> See: <a href="http://www.tceq.state.tx.us/airquality/mobilesource/vim/overview.html">http://www.tceq.state.tx.us/airquality/mobilesource/vim/overview.html</a>	January 1, 1995	Texas Health and Safety Code, §382.037  30 TAC 114 Subchapter C	HC, CO																																									
Passenger cars, Light-duty trucks, and Heavy light-duty trucks	Federal Tier 0 emission standards for model year 1975–1993 <ul style="list-style-type: none"> <li>Passenger cars (Light-duty vehicles): &lt;6,000 lbs Gross Vehicle Weight Rating (GVWR)</li> <li>Light-Duty Trucks 1: 0 – 6,000lbs GVWR (0 – 3,750lbs Loaded Vehicle Weight)</li> <li>Light-Duty Trucks 2: 0 – 6,000lbs GVWR (0 – 5750lbs Loaded Vehicle Weight)</li> <li>Heavy Light-Duty Trucks 3: 6,000 – 8,500lbs GVWR (0-5750lbs Loaded Vehicle Weight) GVWR</li> <li>Heavy Light-Duty Trucks 4: 6,000 – 8,500lbs GVWR (&gt;5750lbs Loaded Vehicle Weight) GVWR</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Vehicle Type</th> <th colspan="5">Tier 0 Emission standards–120,000 mile useful life (grams per mile)</th> </tr> <tr> <th>THC</th> <th>NMHC</th> <th>CO</th> <th>NO<sub>x</sub></th> <th>PM*</th> </tr> </thead> <tbody> <tr> <td>LDV<sup>(a)</sup></td> <td>0.41</td> <td>0.34</td> <td>3.4</td> <td>1.0</td> <td>0.20</td> </tr> <tr> <td>LDT1</td> <td>0.80</td> <td>0.67</td> <td>10</td> <td>1.2</td> <td>0.26</td> </tr> <tr> <td>LDT2</td> <td>0.80</td> <td>0.67</td> <td>10</td> <td>1.7</td> <td>0.13</td> </tr> <tr> <td>LDT3</td> <td>0.80</td> <td>0.67</td> <td>10</td> <td>1.7</td> <td>0.26</td> </tr> <tr> <td>LDT4</td> <td>0.80</td> <td>0.67</td> <td>10</td> <td>1.7</td> <td>0.13</td> </tr> </tbody> </table> <p><sup>a</sup> 50,000 mile useful life *Only applies to diesel vehicles.</p> See: <a href="http://www.epa.gov/otaq/standards/light-duty/index.htm">http://www.epa.gov/otaq/standards/light-duty/index.htm</a>	Vehicle Type	Tier 0 Emission standards–120,000 mile useful life (grams per mile)					THC	NMHC	CO	NO <sub>x</sub>	PM*	LDV <sup>(a)</sup>	0.41	0.34	3.4	1.0	0.20	LDT1	0.80	0.67	10	1.2	0.26	LDT2	0.80	0.67	10	1.7	0.13	LDT3	0.80	0.67	10	1.7	0.26	LDT4	0.80	0.67	10	1.7	0.13	Phased in from 1975–1993	40 Code of Federal Regulations (CFR) Part 86.	HC, NMHC, CO, NO <sub>x</sub> , PM,
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Passenger cars, Light-duty trucks, and Heavy-duty vehicles.	Federal Clean-fuel Vehicle tailpipe emission standards for light-duty vehicles, light-duty trucks, and heavy-duty vehicle engines – Applicable for use in the Federal Clean-Fuel Fleet Program required in ozone nonattainment areas designated serious and above.	Phased in 1994–1998.	40 CFR 88.104-94 40 CFR 88.105-94	HMOG, NMHC, CO, NO <sub>x</sub> , HCHO, PM																																																																																																																																															
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Emission category	Emission standards (g/mile)					NMOG	CO	NO <sub>x</sub>	HCHO	PM <sup>1</sup>	LDV	N/A	TLEV	.156	4.2	.6	.018	.08	LEV	<sup>2</sup> .090	<sup>2</sup> 4.2	.3	<sup>2</sup> .018	<sup>2</sup> .08	ULEV	.055	2.1	<sup>2</sup> .3	.011	.04	Light LDT	0–3750	TLEV	.156	4.2	.6	.018	.08	LEV	<sup>2</sup> .090	<sup>2</sup> 4.2	.3	<sup>2</sup> .018	<sup>2</sup> .08	ULEV	.055	2.1	<sup>2</sup> .3	.011	.04	3751–5750	TLEV	.200	5.5	.9	.023	.08	LEV	<sup>2</sup> .130	<sup>2</sup> 5.5	.5	<sup>2</sup> .023	.08	ULEV	.070	2.8	<sup>2</sup> .5	.013	.04	Heavy LDT	0–3750	LEV	<sup>2</sup> .180	<sup>2</sup> 5.0	.6	<sup>2</sup> .022	<sup>2</sup> .08	ULEV	.107	2.5	<sup>2</sup> .3	.012	.04	3751–5750	LEV	<sup>2</sup> .230	<sup>2</sup> 6.4	1.0	<sup>2</sup> .027	<sup>2</sup> .10	ULEV	.143	3.2	<sup>2</sup> .5	.013	.05	5750–	LEV	<sup>2</sup> .280	<sup>2</sup> 7.3	1.5	<sup>2</sup> .032	<sup>2</sup> .12	ULEV	.167	3.7	<sup>2</sup> .8	.016	.06	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 25%;">Vehicle class</th> <th rowspan="2" style="width: 25%;">Emission category</th> <th colspan="4" style="width: 50%;">Emission standards (grams per brake horsepower-hour)</th> </tr> <tr> <th style="width: 10%;">CO</th> <th style="width: 15%;">NO<sub>x</sub>+NMHC</th> <th style="width: 15%;">HCHO</th> <th style="width: 10%;">PM</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center;">HDV</td> <td>LEV</td> <td style="text-align: center;"><sup>3</sup></td> <td style="text-align: center;">3.8</td> <td style="text-align: center;"><sup>3</sup></td> <td style="text-align: center;"><sup>3</sup></td> </tr> <tr> <td>ILEV</td> <td style="text-align: center;">14.4</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">.05</td> <td style="text-align: center;">.10</td> </tr> <tr> <td>ULEV</td> <td style="text-align: center;">7.2</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">.025</td> <td style="text-align: center;">.05</td> </tr> <tr> <td>ZEV</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>			Vehicle class	Emission category	Emission standards (grams per brake horsepower-hour)				CO	NO <sub>x</sub> +NMHC	HCHO	PM	HDV	LEV	<sup>3</sup>	3.8	<sup>3</sup>	<sup>3</sup>	ILEV	14.4	2.5	.05	.10	ULEV	7.2	2.5	.025	.05	ZEV	0	0	0	0
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<sup>1</sup> Applies to diesel vehicles only. <sup>2</sup> Applies to ILEVs. <sup>3</sup> HD LEVs must meet conventional HDV exhaust emission standards set forth in 40 CFR 86 for total hydrocarbon (THC), CO, PM, and NMOG equivalent.																																																																																																																																																			
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Passenger cars, and Light light-duty trucks	National Low Emission Vehicle (NLEV) emission standards for model year 1999–2004							Phased in from 1999–2004	40 CFR 86.1708-99 40 CFR 86.1709-99	HC, NMOG, CO, NO <sub>x</sub> , PM, HCHO	
	<ul style="list-style-type: none"> <li>• Passenger cars: &lt;6,000 lbs Gross Vehicle Weight Rating (GVWR)</li> <li>• Light-Duty Trucks 1: 0 – 6,000lbs GVWR (0 – 3,750lbs Loaded Vehicle Weight)</li> <li>• Light-Duty Trucks 2: 0 – 6,000lbs GVWR (0 – 5750lbs Loaded Vehicle Weight)</li> </ul>										
	Vehicle Type	Emission Category	NLEV Emission standards–100,000 mile useful life (g/mile)								
			THC	NMOG	CO	NO <sub>x</sub>	PM				HCHO
	LDV	TLEV	-	0.156	4.2	0.6	0.08				0.018
		LEV	-	0.090	4.2	0.3	0.08				0.018
		ULEV	-	0.055	2.1	0.3	0.04				0.011
		ZEV	-	0.000	0.0	0.0	0.00				0.000
	LDT1	TLEV	0.80	0.156	4.2	0.6	0.08				0.018
		LEV	0.80	0.090	4.2	0.3	0.08				0.018
		ULEV	0.80	0.055	2.1	0.3	0.04				0.011
		ZEV	0.00	0.000	0.0	0.0	0.00				0.000
	LDT2	TLEV	0.80	0.200	5.5	0.9	0.10				0.023
		LEV	0.80	0.130	5.5	0.5	0.10				0.023
		ULEV	0.80	0.070	2.8	0.5	0.05				0.013
ZEV		0.00	0.000	0.0	0.0	0.00	0.000				
See: <a href="http://www.epa.gov/otaq/lev-nlev.htm">http://www.epa.gov/otaq/lev-nlev.htm</a>											

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Passenger cars, Light-duty trucks, Heavy light-duty trucks, and Medium-duty passenger vehicles.	Federal Tier 2 emission standards for model year 2004–2016 ( <a href="#">65 FR 6698, February 10, 2000</a> ) <ul style="list-style-type: none"> <li>• Passenger cars: &lt;6,000 lbs Gross Vehicle Weight Rating (GVWR)</li> <li>• Light-Duty Trucks 1: 0 – 6,000lbs GVWR (0 – 3,750lbs Loaded Vehicle Weight)</li> <li>• Light-Duty Trucks 2: 0 – 6,000lbs GVWR (0 – 5750lbs Loaded Vehicle Weight)</li> <li>• Heavy Light-Duty Trucks 3: 6,000 – 8,500lbs GVWR (0-5750lbs Loaded Vehicle Weight) GVWR</li> <li>• Heavy Light-Duty Trucks 4: 6,000 – 8,500lbs GVWR (&gt;5750lbs Loaded Vehicle Weight) GVWR</li> <li>• Medium Duty Passenger Vehicles: 8,500 –10,000lbs GVWR</li> </ul>	Phased-in from model year 2004–2007 (Passenger Cars, LDT 1&2)  Phased-in from model year 2008–2009 (LDT3 & LDT4 and MDPV)	40 CFR 86.1811	NO <sub>x</sub> , NMOG, CO, HCHO, PM																																																																																							
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\* Higher NMOG, CO and HCHO values only apply for HLDTs and MDPVs.

Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
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Light-duty vehicles, Light-duty trucks, and Medium-duty passenger vehicles.	Federal Tier 3 emission standards for model year 2017 and later LDV, LDT, and MDPV (Adopted March 3, 2014)				Phased in from model year 2017–2025	40 CFR 86.1811-17	NO <sub>x</sub> , NMOG, CO, HCHO, PM	
	Tier 3 FTP Standards for LDVs, LDTs and MDPVs – 150,000 mile useful life (mg/mi)							
	Bin	NMOG+NO <sub>x</sub> (mg/mi)	PM <sup>a</sup> (mg/mi)	CO (g/mi)				HCHO (mg/mi)
	Bin 160	160	3	4.2				4
	Bin 125	125	3	2.1				4
	Bin 70	70	3	1.7				4
	Bin 50	50	3	1.7				4
	Bin 30	30	3	1.0				4
	Bin 20	20	3	1.0				4
Bin 0	0	0	0	0				
<p><sup>a</sup> In MYs 2017-20, the PM standard applies only to that segment of a manufacturer's vehicles covered by the percent of sales phase-in for that model year.</p> <p>See: <a href="http://www.epa.gov/otaq/tier3.htm">http://www.epa.gov/otaq/tier3.htm</a></p>								

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Light-duty vehicles, Light-duty trucks, and Medium-duty passenger vehicles.	Federal Tier 3 emission standards for model year 2017 and beyond LDV, LDT, and MDPV (cont.) (Adopted March 3, 2014)		Phased in from model year 2017–2025	40 CFR 86.1811-17	NO <sub>x</sub> , NMOG, CO, HCHO, PM	
	Tier 3 LDV, LDT, and MDPV Fleet Average FTP NMOG+NO <sub>x</sub> Standards – 150,000 mile useful life (mg/mi)					
	Model Year	LDV/LDT1				LDT2,3,4 and MDPV
	2017 <sup>a</sup>	86				101
	2018	79				92
	2019	72				83
	2020	65				74
	2021	58				65
	2022	51				56
	2023	44				47
2024	37	38				
2025 and later	30					
<sup>a</sup> For LDVs and LDTs over 6,000 lbs GVWR and MDPVs, the fleet average standards apply beginning in MY 2018. See: <a href="http://www.epa.gov/otaq/tier3.htm">http://www.epa.gov/otaq/tier3.htm</a>						

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Passenger cars and light trucks	2012 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards ( <a href="#">75 FR 25324, May 7, 2010</a> )  <table border="1" data-bbox="275 305 1346 613"> <thead> <tr> <th colspan="6"><b>*Projected Fleet-Wide Emissions Compliance Levels under the Footprint-Based CO2 Standards (g/mi) and Corresponding Fuel Economy (mpg)</b></th> </tr> <tr> <th></th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Passenger Cars (g/mi)</td> <td>263</td> <td>256</td> <td>247</td> <td>236</td> <td>225</td> </tr> <tr> <td>Light Trucks (g/mi)</td> <td>346</td> <td>337</td> <td>326</td> <td>312</td> <td>298</td> </tr> <tr> <td>Combined Cars &amp; Trucks (g/mi)</td> <td>295</td> <td>286</td> <td>276</td> <td>263</td> <td>250</td> </tr> <tr> <td>Passenger Cars (mpg)</td> <td>33.8</td> <td>34.7</td> <td>36.0</td> <td>37.7</td> <td>39.5</td> </tr> <tr> <td>Light Trucks (mpg)</td> <td>25.7</td> <td>26.4</td> <td>27.3</td> <td>28.5</td> <td>29.8</td> </tr> <tr> <td>Combined Cars &amp; Trucks (mpg)</td> <td>30.1</td> <td>31.1</td> <td>32.2</td> <td>33.8</td> <td>35.5</td> </tr> </tbody> </table> *Source: <a href="http://www.epa.gov/otaq/climate/regulations/420f10014.pdf">http://www.epa.gov/otaq/climate/regulations/420f10014.pdf</a>	<b>*Projected Fleet-Wide Emissions Compliance Levels under the Footprint-Based CO2 Standards (g/mi) and Corresponding Fuel Economy (mpg)</b>							2012	2013	2014	2015	2016	Passenger Cars (g/mi)	263	256	247	236	225	Light Trucks (g/mi)	346	337	326	312	298	Combined Cars & Trucks (g/mi)	295	286	276	263	250	Passenger Cars (mpg)	33.8	34.7	36.0	37.7	39.5	Light Trucks (mpg)	25.7	26.4	27.3	28.5	29.8	Combined Cars & Trucks (mpg)	30.1	31.1	32.2	33.8	35.5	Phased in from MY 2012	40 CFR 86.1818–12  49 CFR 531.5 & 533.5	CO <sub>2</sub>																		
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Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Heavy-duty gasoline engines	Federal Heavy-duty gasoline engine standards (g/bhp-hr)						Phased in from 1988–2007	40 CFR 86.088-10 40 CFR 86.091-10 40 CFR 86.098-10 40 CFR 86.005-10	HC, CO, NO <sub>x</sub>	
	MY	<u>8,500 –14,000lbs GVWR</u>			<u>&gt;14,000lbs GVWR</u>					
		CO	HC	NO <sub>x</sub>	CO	HC				NO <sub>x</sub>
	1988–1990	14.4	1.1	10.6	37.1	1.9				10.6
	1991–1997	14.4	1.1	5.0	37.1	1.9				5.0
1998–2004	14.4	1.1	4.0	37.1	1.9	4.0				
2005–2007	14.4	NO <sub>x</sub> +NMHC =1.0		37.1	NO <sub>x</sub> +NMHC =1.0					
Heavy-duty gasoline engines	2008 and Later Federal Heavy-duty gasoline engine standards (>8,500 lbs GVWR)					Phased in from model year 2008 – 2009	40 CFR 86.008-10	NMHC, CO, NO <sub>x</sub> , PM		
	MY	CO	NMHC	NO <sub>x</sub>	PM					
	2008+	14.4	0.14	0.2	0.01					
These standards apply to all non passenger vehicles and those passenger vehicles that are not covered under the Tier II program. ( <a href="#">66 FR 5002, Jan. 18, 2001</a> )										
See: <a href="http://www.epa.gov/otaq/hd-hwy.htm">http://www.epa.gov/otaq/hd-hwy.htm</a>										

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

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<p>Heavy-Duty Vehicles (Class 2b &amp; Class 3)</p>	<p>Federal Tier 3 emission standards for model year 2018 and beyond chassis-certified heavy-duty vehicles (Adopted March 3, 2014)</p>	<p>Phased in from model year 2018–2022</p>	<p>40 CFR 86.1816-18</p>	<p>NO<sub>x</sub>, NMOG, CO, HCHO, PM</p>					
<p>Tier 3 FTP Standards for Chassis-certified HDVs</p>									
<table border="1"> <thead> <tr> <th></th> <th>NMOG+NO<sub>x</sub> (mg/mi)</th> <th>PM (mg/mi)</th> <th>CO (g/mi)</th> <th>HCHO (mg/mi)</th> </tr> </thead> </table>						NMOG+NO <sub>x</sub> (mg/mi)	PM (mg/mi)	CO (g/mi)	HCHO (mg/mi)
	NMOG+NO <sub>x</sub> (mg/mi)	PM (mg/mi)	CO (g/mi)	HCHO (mg/mi)					
<p><b>Class 2b (8501-10,000 lbs GVWR):</b></p>									
Bin 395 (interim)	395	8	6.4	6					
Bin 340 (interim)	340	8	6.4	6					
Bin 250	250	8	6.4	6					
Bin 200	200	8	4.2	6					
Bin 170	170	8	4.2	6					
Bin 150	150	8	3.2	6					
Bin 0	0	0	0	0					
<p><b>Class 3 (10,001-14,000 lbs GVWR):</b></p>									
Bin 630 (interim)	630	10	7.3	6					
Bin 570 (interim)	570	10	7.3	6					
Bin 400	400	10	7.3	6					
Bin 270	270	10	4.2	6					
Bin 230	230	10	4.2	6					
Bin 200	200	10	3.7	6					
Bin 0	0	0	0	0					
<p>See: <a href="http://www.epa.gov/otaq/tier3.htm">http://www.epa.gov/otaq/tier3.htm</a></p>									

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2021	203	298																																							
2022 and later	178	247																																							
<p>Motorcycles</p>	<p>Federal motorcycle standards (engine sizes &gt;50cc)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">MY</th> <th rowspan="2" style="width: 10%;">Engine Class</th> <th rowspan="2" style="width: 15%;">Engine Size (cc)</th> <th colspan="2" style="width: 20%;">Emission Standards (g/km)</th> </tr> <tr> <th style="width: 10%;">HC</th> <th style="width: 10%;">CO</th> </tr> </thead> <tbody> <tr> <td>1980-2005</td> <td>all</td> <td>&gt;50</td> <td>5.0</td> <td>12.0</td> </tr> <tr> <td>2006+</td> <td>I</td> <td>0 to 169</td> <td>1.0</td> <td>12.0</td> </tr> <tr> <td>2006+</td> <td>II</td> <td>170 to 279</td> <td>1.0</td> <td>12.0</td> </tr> <tr> <td colspan="3"></td> <th style="width: 10%;">HC+ NO<sub>x</sub></th> <th style="width: 10%;">CO</th> </tr> <tr> <td>2006-2009</td> <td>III</td> <td>280+</td> <td>1.4</td> <td>12.0</td> </tr> <tr> <td>2010+</td> <td>III</td> <td>280+</td> <td>0.8</td> <td>12.0</td> </tr> </tbody> </table> <p>See: <a href="http://www.epa.gov/otaq/roadbike.htm">http://www.epa.gov/otaq/roadbike.htm</a></p>	MY	Engine Class	Engine Size (cc)	Emission Standards (g/km)		HC	CO	1980-2005	all	>50	5.0	12.0	2006+	I	0 to 169	1.0	12.0	2006+	II	170 to 279	1.0	12.0				HC+ NO <sub>x</sub>	CO	2006-2009	III	280+	1.4	12.0	2010+	III	280+	0.8	12.0	<p>Phased in from 1980–2010</p>	<p>40 CFR 86.410-80 40 CFR 86.410-90 40 CFR 86.410-2006</p>	<p>HC, CO, NO<sub>x</sub></p>
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Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Gasoline fuel	Federal Tier 2 Low Sulfur Gasoline standards ( <a href="#">65 FR 6698, February 10, 2000</a> )  <table border="1" data-bbox="277 272 1018 446"> <tr> <td>Compliance as of January 1:</td> <td>2004</td> <td>2005</td> <td>2006+</td> </tr> <tr> <td>Refinery Average, ppm</td> <td>B</td> <td>30</td> <td>30</td> </tr> <tr> <td>Corporate Pool Average (ppm)</td> <td>120</td> <td>90</td> <td>--</td> </tr> <tr> <td>Per-Gallon Cap (ppm)</td> <td>300</td> <td>300</td> <td>80</td> </tr> </table> See: <a href="http://www.epa.gov/otaq/fuels/gasolinefuels/index.htm">http://www.epa.gov/otaq/fuels/gasolinefuels/index.htm</a>	Compliance as of January 1:	2004	2005	2006+	Refinery Average, ppm	B	30	30	Corporate Pool Average (ppm)	120	90	--	Per-Gallon Cap (ppm)	300	300	80	Phased in from 2004	40 CFR 80.195	SO <sub>x</sub> , PM
Compliance as of January 1:	2004	2005	2006+																	
Refinery Average, ppm	B	30	30																	
Corporate Pool Average (ppm)	120	90	--																	
Per-Gallon Cap (ppm)	300	300	80																	
Gasoline fuel	Federal Tier 3 Low Sulfur Gasoline standards (Adopted March 3, 2014)  <table border="1" data-bbox="277 581 934 857"> <tr> <td>Compliance as of January 1:</td> <td>2017+</td> </tr> <tr> <td>Refinery Annual Average, ppm</td> <td>10</td> </tr> <tr> <td>Refinery Gate Per-Gallon Cap (ppm)</td> <td>80</td> </tr> <tr> <td>Downstream Per-Gallon Cap (ppm)</td> <td>95</td> </tr> </table> See: <a href="http://www.epa.gov/otaq/fuels/gasolinefuels/index.htm">http://www.epa.gov/otaq/fuels/gasolinefuels/index.htm</a>	Compliance as of January 1:	2017+	Refinery Annual Average, ppm	10	Refinery Gate Per-Gallon Cap (ppm)	80	Downstream Per-Gallon Cap (ppm)	95	Beginning January 1, 2017	40 CFR 80.1603 40 CFR 80.1604	SO <sub>x</sub> , PM								
Compliance as of January 1:	2017+																			
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Downstream Per-Gallon Cap (ppm)	95																			

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Gasoline fuel	Federal Reformulated Gasoline standards (applicable to DFW & HGB ozone nonattainment area counties)	January 1, 1996	40 CFR 80.41	VOC, Toxics, NO <sub>x</sub>																							
	<table border="1"> <tr> <th rowspan="2">RFG Model</th> <th colspan="4">Reduction Percent Per Gallon Standard</th> </tr> <tr> <th>VOC</th> <th>Toxics</th> <th>NO<sub>x</sub></th> <th>Benzene % vol max</th> </tr> <tr> <td>Phase I Complex (Jan.1, 1998 - Dec. 31, 1999)</td> <td>≥35.1</td> <td>≥15.0</td> <td>0.0</td> <td>1.0</td> </tr> <tr> <td>Phase II Complex (Jan. 1, 2000 + )</td> <td>≥27.5</td> <td>≥20.0</td> <td>≥5.5</td> <td>1.0</td> </tr> </table>				RFG Model	Reduction Percent Per Gallon Standard				VOC	Toxics	NO <sub>x</sub>	Benzene % vol max	Phase I Complex (Jan.1, 1998 - Dec. 31, 1999)	≥35.1	≥15.0	0.0	1.0	Phase II Complex (Jan. 1, 2000 + )	≥27.5	≥20.0	≥5.5	1.0				
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Gasoline fuel	Oxygenated Gasoline Program requires gasoline in El Paso County to contain at least 2.7 % oxygen by weight minimum from October 1 to March 31 each year.  See: <a href="http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html">http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html</a>	October 1, 1992	30 TAC 114 Subchapter D	VOC																							
Gasoline fuel	Federal gasoline volatility standards limiting summertime gasoline Reid vapor pressure (RVP) from May 1 to September 15 each year.	Phased in from 1991.	40 CFR 80.27 40 CFR 81.344	VOC																							
	<table border="1"> <tr> <th rowspan="2">Texas</th> <th colspan="5">RVP Maximum (psi)</th> </tr> <tr> <th>May</th> <th>Jun</th> <th>Jul</th> <th>Aug</th> <th>Sep</th> </tr> <tr> <td>Volatility attainment areas</td> <td>9.0</td> <td>9.0</td> <td>9.0</td> <td>9.0</td> <td>9.0</td> </tr> <tr> <td>Volatility nonattainment areas*</td> <td>9.0</td> <td>7.8</td> <td>7.8</td> <td>7.8</td> <td>7.8</td> </tr> </table>				Texas	RVP Maximum (psi)					May	Jun	Jul	Aug	Sep	Volatility attainment areas	9.0	9.0	9.0	9.0	9.0	Volatility nonattainment areas*	9.0	7.8	7.8	7.8	7.8
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*Hardin, Jefferson, and Orange Counties.																											
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Gasoline fuel	El Paso low Reid vapor pressure (RVP) Program limits gasoline RVP to 7.0 psi maximum in El Paso County from May 1 to September 16 each year.  See: <a href="http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html">http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html</a>	May 1, 1996	30 TAC 115 Subchapter C, Div. 5	VOC																							

Mobile Source Control Programs Applicable to Texas (Current and Known Future)

Revised: April 23, 2015

Gasoline fuel	East Texas Low RVP Gasoline Program limits gasoline RVP to 7.8 psi maximum in 95 central and eastern Texas counties from May 1 to October 1 each year.  See: <a href="http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html">http://www.tceq.texas.gov/airquality/mobilesource/vetech/fuelprograms.html</a>	May 1, 2000	30 TAC 114 Subchapter H, Div. 1	VOC
Gasoline fuel	Federal Mobile Source Air Toxics Phase 2 (MSAT2) rules limit the benzene content of gasoline to an annual refinery average of 0.62% by volume beginning January 1, 2011, and a maximum average standard for refineries of 1.3% by volume beginning on July 1, 2012. See: <a href="http://www.epa.gov/otaq/fuels/gasolinefuels/MSAT/index.htm">http://www.epa.gov/otaq/fuels/gasolinefuels/MSAT/index.htm</a>	January 1, 2011	40 CFR 80.41	VOC

Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
 Revised: April 23, 2015

Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants		
<i>On-Road Sources: Diesel Vehicles</i>						
Diesel Fuel	Federal ultra-low sulfur diesel (ULSD) standards for diesel used to power on-highway motor vehicles limit sulfur content to 15 ppm maximum. Diesel must also have a cetane index of at least 40 or contain no more than 35% aromatic hydrocarbons. ( <a href="#">66 FR 5002, Jan. 18, 2001</a> )		Phased in from June 1, 2006, thru October 15, 2006.	40 CFR 80.510	SO <sub>x</sub> , PM, PM2.5	
	<b>Effective Dates for Highway ULSD Fuel</b>					
	<b>Who</b>	<b>What</b>				<b>When</b>
	Refiners & Importers	Import/produce at least 80% ULSD for on-highway use				6/01/06
		Import/produce at least <b>100%</b> ULSD for on-highway use				6/01/10
	Downstream from Refineries through Fuel Terminals	Facilities that choose to carry ULSD must meet 15 ppm sulfur specification				9/01/06
		All highway diesel <b>must</b> be ULSD				10/01/10
	Retail Outlets	Facilities that choose to carry ULSD must meet 15 ppm sulfur specification				10/15/06
		All highway diesel <b>must</b> be ULSD				12/01/10
	*Retail sale of on-highway low sulfur diesel (<500 ppm) production by small refiners and transmix downgrades expires December 1, 2010.					
See: <a href="http://epa.gov/otaq/regs/fuels/diesel/diesel.htm">http://epa.gov/otaq/regs/fuels/diesel/diesel.htm</a>						

Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
Revised: April 23, 2015

Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants
<i>On-Road Sources: Diesel Vehicles</i>				
Diesel Fuel	<p>Texas Low Emission Diesel Fuel (TxLED) Program limits diesel fuel aromatic hydrocarbon content to 10% by volume maximum and requires a cetane number of 48 minimum in all diesel sold or supplied for use in 110 central and eastern Texas Counties. The TxLED requirements also apply to marine diesel (DMX, DMA, MGO) in the eight county Houston/Galveston/Brazoria ozone nonattainment area. Alternative diesel formulations allowed for compliance.</p> <p>See: <a href="http://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html">http://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html</a></p>	<p>Phase in completed on January 31, 2006.</p> <p>Marine diesel rules to be phased in October 1, 2007 to January 1, 2008.</p>	30 TAC 114 Subchapter H, Div. 2	NO <sub>x</sub>
Passenger cars, light-duty trucks, heavy light-duty trucks	<p>Federal Tier 0 emission standards for model years 1975 – 1993.</p> <p>See notes under <i>Gasoline Vehicles</i> section.</p>	Phased in from 1975-1993	40 CFR Part 86	HC, NMHC, CO, NO <sub>x</sub> , PM,
Passenger cars, light-duty trucks, heavy light-duty trucks	<p>Federal Tier 1 emission standards for model years 1994 – 2004</p> <p>See notes under <i>Gasoline Vehicles</i> section.</p>	Phased in from model year 1994	40 CFR 86.708-94 40 CFR 86.708-98 40 CFR 86.709-94 40 CFR 86.709-99	HC,NO <sub>x</sub> ,PM
Passenger cars, light-duty trucks, heavy light-duty trucks, medium - duty passenger vehicles	<p>Federal Tier II emission standards (66 FR6698, February 10, 2000)</p> <p>See notes under <i>Gasoline Vehicles</i> section.</p>	<p>Phased in from model year 2004–2007 (Passenger Cars, LDT 1&amp;2)</p> <p>Phased-in from model year 2008–2009 (LDT3 &amp; LDT4 and MDPV)</p>	40 CFR 86.1811	NMOG,NO <sub>x</sub> , PM
Light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles	<p>Federal Tier 3 emission standards for model year 2017 and beyond LDV, LDT, and MDPV (Adopted March 3, 2014)</p> <p>See notes under <i>Gasoline Vehicles</i> section.</p>	Phased in from model year 2017–2025	40 CFR 86.1811-17	NO <sub>x</sub> , NMOG, CO, HCHO, PM

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																																																	
<i>On-Road Sources: Diesel Vehicles</i>																																																					
Heavy-Duty Vehicles (Class 2b & Class 3)	Federal Tier 3 emission standards for model year 2018 and beyond chassis-certified heavy-duty vehicles (Adopted March 3, 2014)  See notes under <i>Gasoline Vehicles</i> section.	Voluntary from model year 2016–2017  Phased in from model year 2018–2022	40 CFR 86.1816-18	NO <sub>x</sub> , NMOG, CO, HCHO, PM																																																	
Heavy-Duty Diesel Engines	Federal emission standards for On-Highway Heavy-Duty Diesel Engines.  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Model Year</th> <th colspan="4" style="text-align: center;">On-Highway Heavy-Duty Diesel Engine Emission Standards (g/bhp-hr)</th> </tr> <tr> <th style="text-align: center;">CO</th> <th style="text-align: center;">HC</th> <th style="text-align: center;">NO<sub>x</sub></th> <th style="text-align: center;">PM</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1984 -1987</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">10.7</td> <td style="text-align: center;">0.60</td> </tr> <tr> <td style="text-align: center;">1988 - 1990</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">6.0</td> <td style="text-align: center;">0.60</td> </tr> <tr> <td style="text-align: center;">1991 - 1993</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">0.25</td> </tr> <tr> <td style="text-align: center;">1994 - 1997</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">0.10</td> </tr> <tr> <td style="text-align: center;">1998 - 2003</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">4.0</td> <td style="text-align: center;">0.10</td> </tr> <tr> <th style="text-align: center;">Model Year</th> <th style="text-align: center;">CO</th> <th style="text-align: center;">NMHC</th> <th style="text-align: center;">NO<sub>x</sub></th> <th style="text-align: center;">PM</th> </tr> <tr> <td style="text-align: center;">2004 - 2006*</td> <td style="text-align: center;">15.5</td> <td colspan="2" style="text-align: center;">NMHC+ NO<sub>x</sub> = 2.4</td> <td style="text-align: center;">0.10</td> </tr> <tr> <td style="text-align: center;">2007+</td> <td style="text-align: center;">15.5</td> <td style="text-align: center;">0.14</td> <td style="text-align: center;">0.2</td> <td style="text-align: center;">0.01</td> </tr> </tbody> </table> See: <a href="http://www.epa.gov/otaq/hd-hwy.htm">http://www.epa.gov/otaq/hd-hwy.htm</a>	Model Year	On-Highway Heavy-Duty Diesel Engine Emission Standards (g/bhp-hr)				CO	HC	NO <sub>x</sub>	PM	1984 -1987	15.5	1.3	10.7	0.60	1988 - 1990	15.5	1.3	6.0	0.60	1991 - 1993	15.5	1.3	5.0	0.25	1994 - 1997	15.5	1.3	5.0	0.10	1998 - 2003	15.5	1.3	4.0	0.10	Model Year	CO	NMHC	NO <sub>x</sub>	PM	2004 - 2006*	15.5	NMHC+ NO <sub>x</sub> = 2.4		0.10	2007+	15.5	0.14	0.2	0.01	Phased in from 1984 to 2007	40 CFR 86.091-11 40 CFR 86.093-11 40 CFR 86.094-11 40 CFR 86.099-11 40 CFR 86.004–11 40 CFR 86.007-11	CO, HC, NO <sub>x</sub> , PM
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Heavy-Duty Diesel Engines	<p>Federal In-use emissions standard – Not-To-Exceed (NTE) Standards – Upper limit standards for emissions tests conducted under in-use conditions.</p> <p>Consent Decree (CD) required most manufacturers to meet NTE standards by no later than October 1, 2002. Under the CD, the NTE standards are 1.25 x 2004 federal heavy duty diesel engine standard (65 FR 59896, Oct. 6, 2000).</p> <p>For 2007 model year NTE standards are 1.5 x applicable federal heavy duty diesel engine standard (<a href="#">66 FR 5002, Jan. 18, 2001</a>).</p>	Phased in from model year 2003	40 CFR 86.007–11	CO, HC, NO <sub>x</sub> , PM																																																																			
Heavy-Duty Diesel Engines	<p>Federal regulations requiring Onboard Diagnostic (OBD) Systems on 2010 and Later Heavy-duty Engines used in Highway Applications Over 14,000 Pounds.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">OBD Emissions Thresholds for Diesel Fueled CI Engines over 14,000 Pounds</th> </tr> <tr> <th style="text-align: left;">Component/Monitor</th> <th style="text-align: center;">MY</th> <th style="text-align: center;">NMHC</th> <th style="text-align: center;">CO</th> <th style="text-align: center;">NO<sub>x</sub></th> <th style="text-align: center;">PM</th> </tr> </thead> <tbody> <tr> <td rowspan="2">NO<sub>x</sub> catalyst system</td> <td style="text-align: center;">2010-2012</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.6</td> <td style="text-align: center;">--</td> </tr> <tr> <td style="text-align: center;">2013+</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">--</td> </tr> <tr> <td rowspan="2">DPF system</td> <td style="text-align: center;">2010-2012</td> <td style="text-align: center;">2.5x</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">0.05/+ 0.04</td> </tr> <tr> <td style="text-align: center;">2013+</td> <td style="text-align: center;">2x</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">0.05/+ 0.04</td> </tr> <tr> <td rowspan="2">Air-fuel ratio sensors upstream</td> <td style="text-align: center;">2010-2012</td> <td style="text-align: center;">2.5x</td> <td style="text-align: center;">2.5x</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">0.03/+ 0.02</td> </tr> <tr> <td style="text-align: center;">2013+</td> <td style="text-align: center;">2x</td> <td style="text-align: center;">2x</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">0.03/+ 0.02</td> </tr> <tr> <td rowspan="2">Air-fuel ratio sensors downstream</td> <td style="text-align: center;">2010-2012</td> <td style="text-align: center;">2.5x</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">0.05/+ 0.04</td> </tr> <tr> <td style="text-align: center;">2013+</td> <td style="text-align: center;">2x</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">0.05/+ 0.04</td> </tr> <tr> <td rowspan="2">NO<sub>x</sub> sensors</td> <td style="text-align: center;">2010-2012</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.6</td> <td style="text-align: center;">0.05/+ 0.04</td> </tr> <tr> <td style="text-align: center;">2013+</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">+0.3</td> <td style="text-align: center;">0.05/+</td> </tr> </tbody> </table>	OBD Emissions Thresholds for Diesel Fueled CI Engines over 14,000 Pounds						Component/Monitor	MY	NMHC	CO	NO <sub>x</sub>	PM	NO <sub>x</sub> catalyst system	2010-2012	--	--	+0.6	--	2013+	--	--	+0.3	--	DPF system	2010-2012	2.5x	--	--	0.05/+ 0.04	2013+	2x	--	--	0.05/+ 0.04	Air-fuel ratio sensors upstream	2010-2012	2.5x	2.5x	+0.3	0.03/+ 0.02	2013+	2x	2x	+0.3	0.03/+ 0.02	Air-fuel ratio sensors downstream	2010-2012	2.5x	--	+0.3	0.05/+ 0.04	2013+	2x	--	+0.3	0.05/+ 0.04	NO <sub>x</sub> sensors	2010-2012	--	--	+0.6	0.05/+ 0.04	2013+	--	--	+0.3	0.05/+	Phased in from model year 2010	40 CFR 86.010-18	CO, NMHC, NO <sub>x</sub> , PM
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Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
 Revised: April 23, 2015

Source Category	Control Measure Description						Implementation Began	Regulatory Authority	Affected Pollutants
<i>On-Road Sources: Diesel Vehicles</i>									
						0.04			
	“Other monitors” with emissions thresholds	2010-2012	2.5x	2.5x	+0.3	0.03/+0.02			
		2013+	2x	2x	+0.3	0.03/+0.02			
Notes: MY=Model Year; 2.5x means a multiple of 2.5 times the applicable emissions standard or family emissions limit (FEL); +0.3 means the standard or FEL plus 0.3; 0.05/+0.04 means an absolute level of 0.05 or an additive level of the standard or FEL plus 0.04, whichever level is higher.									
See: <a href="http://www.epa.gov/otaq/regs/im/obd/regtech/heavy.htm">http://www.epa.gov/otaq/regs/im/obd/regtech/heavy.htm</a>									

Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																																																	
<i>Non-Road Sources: Gasoline Equipment</i>																																																					
Lawn & Garden Equipment	Federal Emission Standards for New Non-Road Spark Ignition Engines <19 kW (25 HP) – <u>Handheld</u> small gasoline engines	Phased in from model year 1997–2007	40 CFR 90.103	HC, NO <sub>x</sub> , CO																																																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Examples of equipment</th> <th rowspan="2" style="text-align: center;">Engine Class</th> <th rowspan="2" style="text-align: center;">Engine Size</th> <th colspan="2" style="text-align: center;">Emission Standards (g/kW-hr)</th> <th rowspan="2" style="text-align: center;">Model Year Effective for HC+NO<sub>x</sub></th> </tr> <tr> <th style="text-align: center;">CO</th> <th style="text-align: center;">HC+NO<sub>x</sub></th> </tr> </thead> <tbody> <tr> <td rowspan="8" style="text-align: center;">Household equipment (string trimmers, leaf blowers, chain saws)</td> <td style="text-align: center;">III</td> <td style="text-align: center;">&lt;20cc</td> <td rowspan="4" style="text-align: center;">805g (Effective MY 2002)</td> <td style="text-align: center;">238g</td> <td style="text-align: center;">2002</td> </tr> <tr> <td style="text-align: center;">III</td> <td style="text-align: center;">&lt;66cc</td> <td style="text-align: center;">175g</td> <td style="text-align: center;">2003</td> </tr> <tr> <td style="text-align: center;">III</td> <td style="text-align: center;">&gt;66&lt;100cc</td> <td style="text-align: center;">113g</td> <td style="text-align: center;">2004</td> </tr> <tr> <td style="text-align: center;">III</td> <td style="text-align: center;">&gt;66&lt;100cc</td> <td style="text-align: center;">50g</td> <td style="text-align: center;">2005</td> </tr> <tr> <td rowspan="4" style="text-align: center;">IV</td> <td rowspan="4" style="text-align: center;">&gt;20&lt;50cc</td> <td rowspan="4" style="text-align: center;">805g (Effective MY 2002)</td> <td style="text-align: center;">196g</td> <td style="text-align: center;">2002</td> </tr> <tr> <td style="text-align: center;">148g</td> <td style="text-align: center;">2003</td> </tr> <tr> <td style="text-align: center;">99g</td> <td style="text-align: center;">2004</td> </tr> <tr> <td style="text-align: center;">50g</td> <td style="text-align: center;">2005</td> </tr> <tr> <td rowspan="4" style="text-align: center;">Commercial chainsaws</td> <td rowspan="4" style="text-align: center;">V</td> <td rowspan="4" style="text-align: center;">&lt;50cc</td> <td rowspan="4" style="text-align: center;">603g (Effective MY 2004)</td> <td style="text-align: center;">143g</td> <td style="text-align: center;">2004</td> </tr> <tr> <td style="text-align: center;">119g</td> <td style="text-align: center;">2005</td> </tr> <tr> <td style="text-align: center;">96g</td> <td style="text-align: center;">2006</td> </tr> <tr> <td style="text-align: center;">72g</td> <td style="text-align: center;">2007</td> </tr> </tbody> </table>				Examples of equipment	Engine Class	Engine Size	Emission Standards (g/kW-hr)		Model Year Effective for HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>	Household equipment (string trimmers, leaf blowers, chain saws)	III	<20cc	805g (Effective MY 2002)	238g	2002	III	<66cc	175g	2003	III	>66<100cc	113g	2004	III	>66<100cc	50g	2005	IV	>20<50cc	805g (Effective MY 2002)	196g	2002	148g	2003	99g	2004	50g	2005	Commercial chainsaws	V	<50cc	603g (Effective MY 2004)	143g	2004	119g	2005	96g	2006	72g	2007
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Lawn & Garden Equipment	Federal Emission Standards for New Non-Road Spark Ignition Engines <19 kW (25 HP) – <u>Non-Handheld</u> small gasoline engines	Phased in from model year 1997–2007	40 CFR 90.103	HC, NO <sub>x</sub> , CO																																																	
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Mobile Source Control Programs Applicable to Texas (Current and Known Future)  
Revised: April 23, 2015

Source Category	Control Measure Description						Implementation Began	Regulatory Authority	Affected Pollutants
<i>Non-Road Sources: Gasoline Equipment</i>									
	lawn mowers	I	100cc<225cc	610g	16.1g	2007			
	Lawn and garden tractors	II	>225cc	N/A	18.0g	2001			
		II	>225cc		16.6g	2002			
		II	>225cc		15.0g	2003			
		II	>225cc		13.6g	2004			
		II	>225cc	610g	12.1g	2005			
	See: <a href="http://www.epa.gov/otaq/smallsi.htm">http://www.epa.gov/otaq/smallsi.htm</a>								
Lawn & Garden Equipment	Federal Phase 3 Emission Standards for New Non-Road Handheld Spark Ignition Engines <19 kW (25 HP) – ( <a href="#">73 FR 59034, October 8, 2008</a> )						Beginning with model year 2010	40 CFR 1054.103	HC, NO <sub>x</sub> , CO
	Model Year		Engine displacement class	Emission standard (g/kW-hr)					
				HC + NO <sub>x</sub>	CO				
	2010+		Class III	50	805				
			Class IV	50	805				
			Class V	72	603				
	See: <a href="http://www.epa.gov/otaq/smallsi.htm">http://www.epa.gov/otaq/smallsi.htm</a>								
Lawn & Garden Equipment	Federal Phase 3 Emission Standards for New Non-Road Nonhandheld Spark Ignition Engines <19 kW (25 HP) – ( <a href="#">73 FR 59034, October 8, 2008</a> )						Beginning with model year 2011 for engine displacement ≥ 225 cc and model year 2012 for < 225 cc.	40 CFR 1054.105	HC, NO <sub>x</sub> , CO
	Model Year		Engine displacement class	Emission standard (g/kW-hr)		CO standard for marine generator engines			
				HC + NO <sub>x</sub>	CO				
	2011+		Class I	10.0	610	5.0			
			Class II	8.0	610	5.0			

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Lawn & Garden Equipment	Federal Portable Fuel Container evaporative emissions standard – ( <a href="#">72 FR 8432, February 26, 2007</a> )	Beginning January 1, 2009.	40 CFR 59.611	HC																																
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Recreational Marine	Federal emission standards for recreational marine spark-ignition (SI) outboard and personal watercraft engines	Phased in from model year 1998	40 CFR 91.104	HC, NO <sub>x</sub>																																
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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																											
<i>Non-Road Sources: Gasoline Equipment</i>																															
Recreational Marine	Federal Emission Standards For Outboard And Personal Watercraft Spark Ignition Engines – ( <a href="#">73 FR 59034, October 8, 2008</a> )	Beginning with model year 2010	40 CFR 1045.103	HC, NO <sub>x</sub> , CO																											
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<sup>1</sup> Power (P) = maximum engine power for the engine family, in kilowatts (kW).																															
Recreational Marine	Federal Emission Standards For Sterndrive/Inboard Spark Ignition Engines – ( <a href="#">73 FR 59034, October 8, 2008</a> )	Beginning with model year 2010	40 CFR 1045.105	HC, NO <sub>x</sub> , CO																											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Duty Cycle</th> <th rowspan="2" style="text-align: center;">Model Year</th> <th rowspan="2" style="text-align: center;">Power <sup>1</sup></th> <th colspan="2" style="text-align: center;">Emission standard (g/kW-hr)</th> </tr> <tr> <th style="text-align: center;">HC + NO<sub>x</sub></th> <th style="text-align: center;">CO</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Conventional</td> <td style="text-align: center;">2010</td> <td style="text-align: center;">All</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">75.0</td> </tr> <tr> <td rowspan="4" style="text-align: center;">High Performance</td> <td rowspan="2" style="text-align: center;">2010</td> <td style="text-align: center;">P ≤ 485 kW</td> <td style="text-align: center;">20.0</td> <td style="text-align: center;">350</td> </tr> <tr> <td style="text-align: center;">P &gt; 485 kW</td> <td style="text-align: center;">25.0</td> <td style="text-align: center;">350</td> </tr> <tr> <td rowspan="2" style="text-align: center;">2011+</td> <td style="text-align: center;">P ≤ 485 kW</td> <td style="text-align: center;">16.0</td> <td style="text-align: center;">350</td> </tr> <tr> <td style="text-align: center;">P &gt; 485 kW</td> <td style="text-align: center;">22.0</td> <td style="text-align: center;">350</td> </tr> </tbody> </table>				Duty Cycle	Model Year	Power <sup>1</sup>	Emission standard (g/kW-hr)		HC + NO <sub>x</sub>	CO	Conventional	2010	All	5.0	75.0	High Performance	2010	P ≤ 485 kW	20.0	350	P > 485 kW	25.0	350	2011+	P ≤ 485 kW	16.0	350	P > 485 kW	22.0	350
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Commercial, Industrial (Large spark ignition engines)	TCEQ regulations under 30 TAC 114.420-429 require all new large nonroad spark-ignition (LSI) engines greater than 25 HP sold in Texas to be certified to meet the California emission standards specified under Title 13 California Code of Regulations (13 CCR) §2433(b), effective on November 18, 1999. These rules were adopted in April 2000 and further revised in December 2000. In November 2002, EPA adopted federal emission standards for MY2004 LSI engines that were	April 19, 2000	30 TAC 114.420-429	HC, NO <sub>x</sub> , CO																											
		<b><u>This rule was repealed in 2008.</u></b>																													

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Commercial, Industrial (Large spark ignition engines)	<p>Federal Emission Standards for New Large Non-Road Spark-Ignition Engines &gt;19 kW (25 HP). (<a href="#">67 FR 682242, November 8, 2002</a>)</p> <table border="1" data-bbox="323 591 1295 834"> <thead> <tr> <th rowspan="2">Model Year</th> <th rowspan="2">Phase-in Stage</th> <th rowspan="2">Test Type</th> <th colspan="2">Emission Standard (g/kW-hr)</th> </tr> <tr> <th>HC+ NO<sub>x</sub></th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>2004–2006</td> <td>Tier 1</td> <td>Steady state</td> <td>4.0</td> <td>50</td> </tr> <tr> <td>2007+</td> <td>Tier 2</td> <td>Transient &amp; Steady state</td> <td>2.7</td> <td>4.4</td> </tr> <tr> <td>2007+</td> <td></td> <td>Field testing</td> <td>3.8</td> <td>6.5</td> </tr> </tbody> </table> <table border="1" data-bbox="323 867 1295 1143"> <thead> <tr> <th rowspan="2">Model Year</th> <th rowspan="2">Phase-in Stage</th> <th rowspan="2">Test Type</th> <th colspan="2">Alternate Severe Duty Emission Standard (g/kW-hr)</th> </tr> <tr> <th>HC+ NO<sub>x</sub></th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>2004–2006</td> <td>Tier 1</td> <td>Steady state</td> <td>4.0</td> <td>130.0</td> </tr> <tr> <td>2007+</td> <td>Tier 2</td> <td>Transient &amp; Steady state</td> <td>2.7</td> <td>130.0</td> </tr> <tr> <td>2007+</td> <td></td> <td>Field testing</td> <td>3.8</td> <td>200.0</td> </tr> </tbody> </table> <p>Evaporative hydrocarbon emissions may not exceed 0.2 grams per gallon of fuel tank capacity.</p> <p>See: <a href="http://epa.gov/otaq/largesi.htm">http://epa.gov/otaq/largesi.htm</a></p>	Model Year	Phase-in Stage	Test Type	Emission Standard (g/kW-hr)		HC+ NO <sub>x</sub>	CO	2004–2006	Tier 1	Steady state	4.0	50	2007+	Tier 2	Transient & Steady state	2.7	4.4	2007+		Field testing	3.8	6.5	Model Year	Phase-in Stage	Test Type	Alternate Severe Duty Emission Standard (g/kW-hr)		HC+ NO <sub>x</sub>	CO	2004–2006	Tier 1	Steady state	4.0	130.0	2007+	Tier 2	Transient & Steady state	2.7	130.0	2007+		Field testing	3.8	200.0	Phased in from model year 2004–2007	40 CFR 1048.101  Fed. Rules are more stringent than TCEQ regulations cited under 30 TAC 114.420-429.	HC, NO <sub>x</sub> , CO
Model Year	Phase-in Stage				Test Type	Emission Standard (g/kW-hr)																																										
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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants
<i>Non-Road Sources: Gasoline Equipment</i>				
Recreational Vehicles	Federal emission standards for snowmobiles, off-highway motorcycles, and all-terrain vehicles (ATV's) ( <a href="#">67 FR 682242, November 8, 2002</a> )		40 CFR 1051.103 40 CFR 1051.105 40 CFR 1051.107	HC, NO <sub>x</sub> , CO
	<b>Snow mobiles</b>			
	Phase	Model Year	Phase-in (%)	Emission Standards (g/k W-hr)
				HC      HC+NO <sub>x</sub> CO
	Phase 1	2006	50	100      –      275
	Phase 1	2007–2009	100	100      –      275
	Phase 2	2010 and 2011	100	75      –      275
	Phase 3	2012+	100	75      *      200
	*See 40 CFR 1051.103(a)(2).			
	<b>Off-highway Motorcycles</b>			
Phase	Model Year	Phase-in (%)	Emission Standards (g/Km)	
			HC+NO <sub>x</sub> CO	
Phase 1	2006	50	2.0      25	
	2007–2009	100	2.0      25	
<b>All Terrain Vehicles (ATV) and off-road utility vehicles</b>				
Phase	Model Year	Phase-in (%)	Emission Standards (g/Km)	
			HC+NO <sub>x</sub> CO	
Phase 1	2006	50	1.5      35	
	2007–2009	100	1.5      35	
See: <a href="http://epa.gov/otaq/recveh.htm">http://epa.gov/otaq/recveh.htm</a>				

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants								
<i>Non-Road Sources: Gasoline Equipment</i>												
Recreational Vehicles	Federal evaporative emission standards limiting permeation emissions from fuel tanks and fuel hoses. This standard applies to all recreation vehicles and engines.	Phased in from model year 2008	40 CFR 1051.110	VOC								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Model Year</th> <th style="text-align: center;">Emission component</th> <th style="text-align: center;">Permeation Standards (g/m<sup>2</sup>/day)</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">2008+</td> <td style="text-align: center;">Fuel Tank</td> <td style="text-align: center;">1.5</td> </tr> <tr> <td style="text-align: center;">Fuel hoses</td> <td style="text-align: center;">15.0</td> </tr> </tbody> </table>				Model Year	Emission component	Permeation Standards (g/m <sup>2</sup> /day)	2008+	Fuel Tank	1.5	Fuel hoses	15.0
	Model Year				Emission component	Permeation Standards (g/m <sup>2</sup> /day)						
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	Fuel hoses	15.0										
See: <a href="http://epa.gov/otaq/recveh.htm">http://epa.gov/otaq/recveh.htm</a>												

Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants
<i>Non-Road Sources: Diesel Equipment</i>				
Diesel fuel	<p>Federal standards for nonroad, locomotive and marine (NRLM) diesel fuels (<a href="#">69 FR 38958, June 29, 2004</a>)</p> <ul style="list-style-type: none"> <li>• 500 ppm maximum – effective June 2007 for NRLM diesel fuels</li> <li>• 15 ppm maximum – effective June 2010 for NR diesel fuel</li> <li>• 15 ppm maximum – effective June 2012 for LM diesel fuels</li> <li>• 500 ppm maximum – effective June 2014 for Transmix LM diesel fuels*</li> <li>• 1000 ppm maximum – effective June 2014 for ECA Marine fuels (Cat 3 marine vessels) (<a href="#">75 FR 22896, April 30, 2010</a>)</li> </ul> <p>See: <a href="http://epa.gov/otaq/fuels/dieselfuels/regulations.htm">http://epa.gov/otaq/fuels/dieselfuels/regulations.htm</a></p>	Phased in from 2007–2012	40 CFR 80.500 40 CFR 80.510 *40 CFR 80.513	
Diesel Fuel	<p>Texas Low Emission Diesel Fuel (TxLED) Program.</p> <p>See notes under <i>On-Road Sources: Diesel Vehicles</i> section.</p> <p>See: <a href="http://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html">http://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html</a></p>	<p>Phase in completed on January 31, 2006.</p> <p>Marine diesel rules to be phased in October 1, 2007 to January 1, 2008.</p>	30 TAC 114 Subchapter H, Div. 2	NO <sub>x</sub>

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants							
<i>Non-Road Sources: Diesel Equipment</i>											
Construction, Industrial, Agricultural, Airport Ground Support, Light Commercial Equipment	Federal Tier 1–Tier 3 Non-Road Engine Emission Standards		Phased in from model year 1996–2008	40 CFR 89.112	HC, CO, NO <sub>x</sub> , PM						
	Federal Tier 1-3 Non-road Diesel Engine Emission Standards, g/kW-hr (g/bhp-hr)										
	Engine Power	Tier				Year	CO	HC	NMHC+ NO <sub>x</sub>	NO <sub>x</sub>	PM
	kW < 8 (hp < 11)	Tier 1				2000	8.0 (6.0)	-	10.5 (7.8)	-	1.0 (0.75)
		Tier 2				2005	8.0 (6.0)	-	7.5 (5.6)	-	0.8 (0.6)
	8 ≤ kW < 19 (11 ≤ hp < 25)	Tier 1				2000	6.6 (4.9)	-	9.5 (7.1)	-	0.8 (0.6)
		Tier 2				2005	6.6 (4.9)	-	7.5 (5.6)	-	0.8 (0.6)
	19 ≤ kW < 37 (25 ≤ hp < 50)	Tier 1				1999	5.5 (4.1)	-	9.5 (7.1)	-	0.8 (0.6)
		Tier 2				2004	5.5 (4.1)	-	7.5 (5.6)	-	0.6 (0.45)
	37 ≤ kW < 75 (50 ≤ hp < 100)	Tier 1				1998	-	-	-	9.2 (6.9)	-
		Tier 2				2004	5.0 (3.7)	-	7.5 (5.6)	-	0.4 (0.3)
		Tier 3				2008	5.0 (3.7)	-	4.7 (3.5)	-	
	75 ≤ kW < 130 (100 ≤ hp < 175)	Tier 1				1997	-	-	-	9.2 (6.9)	-
		Tier 2				2003	5.0 (3.7)	-	6.6 (4.9)	-	0.3 (0.22)
		Tier 3				2007	5.0	-	4.0 (3.0)	-	

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Source Category	Control Measure Description								Implementation Began	Regulatory Authority	Affected Pollutants	
<i>Non-Road Sources: Diesel Equipment</i>												
				(3.7)								
	130 ≤ kW < 225 (175 ≤ hp < 300)	Tier 1	1996	11.4 (8.5)	1.3 (1.0)	-	9.2 (6.9)	0.54 (0.4)				
		Tier 2	2003	3.5 (2.6)	-	6.6 (4.9)	-	0.2 (0.15)				
		Tier 3	2006	3.5 (2.6)	-	4.0 (3.0)	-					
	225 ≤ kW < 450 (300 ≤ hp < 600)	Tier 1	1996	11.4 (8.5)	1.3 (1.0)	-	9.2 (6.9)	0.54 (0.4)				
		Tier 2	2001	3.5 (2.6)	-	6.4 (4.8)	-	0.2 (0.15)				
		Tier 3	2006	3.5 (2.6)	-	4.0 (3.0)	-					
	450 ≤ kW < 560 (600 ≤ hp < 750)	Tier 1	1996	11.4 (8.5)	1.3 (1.0)	-	9.2 (6.9)	0.54 (0.4)				
		Tier 2	2002	3.5 (2.6)	-	6.4 (4.8)	-	0.2 (0.15)				
		Tier 3	2006	3.5 (2.6)	-	4.0 (3.0)	-					
	kW ≥ 560 (hp ≥ 750)	Tier 1	2000	11.4 (8.5)	1.3 (1.0)	-	9.2 (6.9)	0.54 (0.4)				
		Tier 2	2006	3.5 (2.6)	-	6.4 (4.8)	-	0.2 (0.15)				
	See: <a href="http://www.epa.gov/otaq/nonroad-diesel.htm">http://www.epa.gov/otaq/nonroad-diesel.htm</a>											

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants						
<i>Non-Road Sources: Diesel Equipment</i>										
Construction, Industrial, Agricultural, Airport Ground Support, Light Commercial Equipment	Federal Tier 4 Non-Road Engine Emission Standards ( <a href="#">69 FR 38958, June 29, 2004</a> )						Phased in from model year 2008–2015	40 CFR 1039.101 40 CFR 1039.102	NMHC, CO, PM, NO <sub>x</sub>	
	Federal Tier 4 Non-road Diesel Engine Emission Standards [2008-2014] —Engines Up To 560 kW, g/kW-hr (g/bhp-hr)									
	Engine Power	Year	CO	NMHC	NMHC+ NO <sub>x</sub>	NO <sub>x</sub>				PM
	kW < 8 (hp < 11)	2008	8.0 (6.0)	-	7.5 (5.6)	-				0.4 <sup>a</sup> (0.3)
	8 ≤ kW < 19 (11 ≤ hp < 25)	2008	6.6 (4.9)	-	7.5 (5.6)	-				0.4 (0.3)
	19 ≤ kW < 37 (25 ≤ hp < 50)	2008	5.5 (4.1)	-	7.5 (5.6)	-				0.3 (0.22)
		2013	5.5 (4.1)	-	4.7 (3.5)	-				0.03 (0.022)
	37 ≤ kW < 56 (50 ≤ hp < 75)	2008	5.0 (3.7)	-	4.7 (3.5)	-				0.3 <sup>b</sup> (0.22)
		2013	5.0 (3.7)	-	4.7 (3.5)	-				0.03 (0.022)
	56 ≤ kW < 130 (75 ≤ hp < 175)	2012-2014 <sup>c</sup>	5.0 (3.7)	0.19 (0.14)	-	0.40 (0.30)				0.02 (0.015)
130 ≤ kW ≤ 560 (175 ≤ hp ≤ 750)	2011-2014 <sup>d</sup>	3.5 (2.6)	0.19 (0.14)	-	0.40 (0.30)	0.02 (0.015)				
a - hand-startable, air-cooled, DI engines may be certified to Tier 2 standards										

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	<p>through 2009 and to an optional PM standard of 0.6 g/kW-hr starting in 2010</p> <p>b - 0.4 g/kW-hr (Tier 2) if manufacturer complies with the 0.03 g/kW-hr standard from 2012</p> <p>c - PM/CO: full compliance from 2012; NO<sub>x</sub>/HC: Option 1 (if banked Tier 2 credits used)—50% engines must comply in 2012-2013; Option 2 (if no Tier 2 credits claimed)—25% engines must comply in 2012-2014, with full compliance from 2014.12.31</p> <p>d - PM/CO: full compliance from 2011; NO<sub>x</sub>/HC: 50% engines must comply in 2011-2013</p>																																																			
	<p style="text-align: center;">Federal Tier 4 Non-road Diesel Engine Emission Standards [2011-2014] —Engines Above 560 kW, g/kW-hr (g/bhp-hr)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Year</th> <th style="width: 30%;">Category</th> <th style="width: 10%;">CO</th> <th style="width: 10%;">NMHC</th> <th style="width: 10%;">NO<sub>x</sub></th> <th style="width: 10%;">PM</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">2011-2014</td> <td style="text-align: center;">Generator sets &gt; 900 kW</td> <td style="text-align: center;">3.5 (2.6)</td> <td style="text-align: center;">0.40 (0.30)</td> <td style="text-align: center;">0.67 (0.50)</td> <td style="text-align: center;">0.10 (0.07)</td> </tr> <tr> <td style="text-align: center;">All engines except gensets &gt; 900 kW</td> <td style="text-align: center;">3.5 (2.6)</td> <td style="text-align: center;">0.40 (0.30)</td> <td style="text-align: center;">3.5 (2.6)</td> <td style="text-align: center;">0.10 (0.07)</td> </tr> </tbody> </table>	Year	Category	CO	NMHC	NO <sub>x</sub>	PM	2011-2014	Generator sets > 900 kW	3.5 (2.6)	0.40 (0.30)	0.67 (0.50)	0.10 (0.07)	All engines except gensets > 900 kW	3.5 (2.6)	0.40 (0.30)	3.5 (2.6)	0.10 (0.07)																																		
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Maximum engine power	Application	PM	NO <sub>x</sub>	NMHC	NO <sub>x</sub> + NMHC	CO																																														
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56 ≤ kW < 130	All	0.02	0.40	0.19	-	5.0																																														
130 ≤ kW ≤ 560	All	0.02	0.40	0.19	-	3.5																																														
kW > 560	Generator sets	0.03	0.67	0.19	-	3.5																																														
	All except generator sets	0.04	3.5	0.19	-	3.5																																														

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																																													
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	<p><sup>1</sup> Note that some of these standards also apply for 2014 and earlier model years. This table presents the full set of emission standards that apply after all the transition and phase-in provisions of § 1039.102 expire.</p> <p><sup>2</sup> See paragraph (c) of this section for provisions related to an optional PM standard for certain engines below 8 kW.</p> <p><sup>3</sup> The CO standard is 8.0 g/kW-hr for engines below 8 kW.</p> <p><sup>4</sup> The CO standard is 5.5 g/kW-hr for engines below 37 kW.</p> <p>See: <a href="http://www.epa.gov/otaq/nonroad-diesel.htm">http://www.epa.gov/otaq/nonroad-diesel.htm</a></p>																																																
Locomotive	<p>Federal Locomotive Emission Standards (through 2008) (<a href="#">63 FR 18978, April 16, 1998</a>)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Emission Standards for Locomotives, g/bhp-hr</th> </tr> <tr> <th style="text-align: center;">Duty Cycle</th> <th style="text-align: center;">HC*</th> <th style="text-align: center;">CO</th> <th style="text-align: center;">NO<sub>x</sub></th> <th style="text-align: center;">PM</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Tier 0</b> ( for locomotives manufactured 1973 - 2001)</td> </tr> <tr> <td>Line-haul</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">9.5</td> <td style="text-align: center;">0.60</td> </tr> <tr> <td>Switch</td> <td style="text-align: center;">2.1</td> <td style="text-align: center;">8.0</td> <td style="text-align: center;">14.0</td> <td style="text-align: center;">0.72</td> </tr> <tr> <td colspan="5"><b>Tier 1</b> (for locomotives manufactured 2002 - 2004)</td> </tr> <tr> <td>Line-haul</td> <td style="text-align: center;">0.55</td> <td style="text-align: center;">2.2</td> <td style="text-align: center;">7.4</td> <td style="text-align: center;">0.45</td> </tr> <tr> <td>Switch</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">11.0</td> <td style="text-align: center;">0.54</td> </tr> <tr> <td colspan="5"><b>Tier 2</b> (for locomotives manufactured 2005 and later)</td> </tr> </tbody> </table>	Emission Standards for Locomotives, g/bhp-hr					Duty Cycle	HC*	CO	NO <sub>x</sub>	PM	<b>Tier 0</b> ( for locomotives manufactured 1973 - 2001)					Line-haul	1.0	5.0	9.5	0.60	Switch	2.1	8.0	14.0	0.72	<b>Tier 1</b> (for locomotives manufactured 2002 - 2004)					Line-haul	0.55	2.2	7.4	0.45	Switch	1.2	2.5	11.0	0.54	<b>Tier 2</b> (for locomotives manufactured 2005 and later)					Phased in from 1998–2005	40 CFR 92.8	THC, CO, NO <sub>x</sub> , PM
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Source Category	Control Measure Description					Implementation Began	Regulatory Authority	Affected Pollutants
<i>Non-Road Sources: Diesel Equipment</i>								
	Line-haul	0.3	1.5	5.5	0.20			
	Switch	0.6	2.4	8.1	0.24			
	*HC standards are in the form of THC for diesel, bio-diesel, or any combination of fuels with diesel as the primary fuel; NMHC for natural gas, or any combination of fuels where natural gas is the primary fuel; and THCE for alcohol, or any combination of fuels where alcohol is the primary fuel.							
	Smoke Standards for Locomotives, % opacity - normalized							
		Steady-state	30-sec peak	3-sec peak				
	Tier 0	30	40	50				
	Tier 1	25	40	50				
	Tier 2	20	40	50				
	See: <a href="http://www.epa.gov/otaq/locomotives.htm">http://www.epa.gov/otaq/locomotives.htm</a>							
Locomotive	Federal Locomotive Emission Standards (2008+) ( <a href="#">73 FR 37096, June 30, 2008</a> )					Phased in from 2008–2015	40 CFR 1033.101	PM, NO <sub>x</sub> , HC, CO
	Line-Haul Locomotive Emission Standards							
	Year of original manufacture	Tier of standards	Standards (g/bhp-hr)					
			NO <sub>x</sub>	PM	HC	CO		
	1973–1992 <sup>a</sup>	Tier 0 <sup>b</sup>	8.0	0.22	1.00	5.0		
	1993 <sup>a</sup> –2004	Tier 1 <sup>b</sup>	7.4	0.22 <sup>c</sup>	0.55	2.2		
	2005–2011	Tier 2 <sup>b</sup>	5.5	0.10	0.30	1.5		
	2012–2014	Tier 3 <sup>c</sup>	5.5	0.10	0.30	1.5		
	2015 or later	Tier 4 <sup>d</sup>	1.3	0.03	0.14	1.5		
	<sup>a</sup> Locomotive models that were originally manufactured in model years 1993 through 2001, but that were not originally equipped with a separate coolant system for intake air are subject to the Tier 0 rather than the Tier 1 standards.							

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	<p><sup>b</sup> Line-haul locomotives subject to the Tier 0 through Tier 2 emission standards must also meet switch standards of the same tier.</p> <p><sup>c</sup> Tier 3 line-haul locomotives must also meet Tier 2 switch standards.</p> <p><sup>d</sup> Manufacturers may elect to meet a combined NO<sub>x</sub>+HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NO<sub>x</sub> and HC standards.</p> <p><sup>e</sup> The PM standard for newly remanufactured Tier 2 line-haul locomotives is 0.20 g/bhp-hr until January 1, 2013, except as specified in 40 CFR 1033.150(a).</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="6">Switch Locomotive Emission Standards</th> </tr> <tr> <th rowspan="2">Year of original manufacture</th> <th rowspan="2">Tier of standards</th> <th colspan="4">Standards (g/bhp-hr)</th> </tr> <tr> <th>NO<sub>x</sub></th> <th>PM</th> <th>HC</th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>1973–2001</td> <td>Tier 0</td> <td>11.8</td> <td>0.26</td> <td>2.10</td> <td>8.0</td> </tr> <tr> <td>2002–2004</td> <td>Tier 1 <sup>a</sup></td> <td>11.0</td> <td>0.26 <sup>b</sup></td> <td>1.20</td> <td>2.5</td> </tr> <tr> <td>2005–2010</td> <td>Tier 2 <sup>a</sup></td> <td>8.1</td> <td>0.13</td> <td>0.60</td> <td>2.4</td> </tr> <tr> <td>2011–2014</td> <td>Tier 3</td> <td>5.0 <sup>c</sup></td> <td>0.10</td> <td>0.60 <sup>c</sup></td> <td>2.4</td> </tr> <tr> <td>2015 or later</td> <td>Tier 4</td> <td>1.3</td> <td>0.03</td> <td>0.14</td> <td>2.4</td> </tr> </tbody> </table> <p><sup>a</sup> Switch locomotives subject to the Tier 1 through Tier 2 emission standards must also meet line-haul standards of the same tier.</p> <p><sup>b</sup> The PM standard for new Tier 2 switch locomotives is 0.24 g/bhp-hr until January 1, 2013, except as specified in 40 CFR 1033.150(a).</p> <p><sup>c</sup> Manufacturers may elect to meet a combined NO<sub>x</sub>+HC standard of 1.3 g/bhp-hr instead of the otherwise applicable Tier 4 NO<sub>x</sub> and HC standards.</p> <p><b>Note:</b> An Automatic Engine Stop/Start System (AESS) limiting idling to a maximum of 30 minutes is required on all new Tier 3 and Tier 4 locomotives and must be installed on all existing locomotives that are subject to the new remanufactured engine standards, at the point of first remanufacture under the new standards.</p> <p>See: <a href="http://www.epa.gov/otaq/locomotives.htm">http://www.epa.gov/otaq/locomotives.htm</a></p>	Switch Locomotive Emission Standards						Year of original manufacture	Tier of standards	Standards (g/bhp-hr)				NO <sub>x</sub>	PM	HC	CO	1973–2001	Tier 0	11.8	0.26	2.10	8.0	2002–2004	Tier 1 <sup>a</sup>	11.0	0.26 <sup>b</sup>	1.20	2.5	2005–2010	Tier 2 <sup>a</sup>	8.1	0.13	0.60	2.4	2011–2014	Tier 3	5.0 <sup>c</sup>	0.10	0.60 <sup>c</sup>	2.4	2015 or later	Tier 4	1.3	0.03	0.14	2.4			
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Commercial/Recreational Marine Diesel Engines	<p>Federal emission standards for Commercial and Recreational marine diesel engines greater than 50hp. (Standards are based on displacement in liters per cylinder) (Less than 50 hp marine engines are regulated under the Tier 2 and Tier 3 federal off-road engine standards.) (<a href="#">64 FR 73300, December 29, 1999</a>) (<a href="#">67 FR 68242, November 8, 2002</a>)</p> <table border="1" data-bbox="342 508 1339 1417" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">Marine Diesel Tier 2 Exhaust Emission Standards (g/kW-hr)</th> </tr> <tr> <th style="text-align: center;">Engine Displacement in liters/cylinder (D) &amp; rated power (kW)</th> <th style="text-align: center;">Category</th> <th style="text-align: center;">Model Year</th> <th style="text-align: center;">THC+N O<sub>x</sub></th> <th style="text-align: center;">CO</th> <th style="text-align: center;">PM</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">D &lt;0.9 &amp; power ≥37 kW</td> <td style="text-align: center;">Category 1, Commercial</td> <td style="text-align: center;">2005</td> <td style="text-align: center;">7.5</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">0.40</td> </tr> <tr> <td style="text-align: center;">Category 1, Recreational</td> <td style="text-align: center;">2007</td> <td style="text-align: center;">7.5</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">0.40</td> </tr> <tr> <td rowspan="2" style="text-align: center;">0.9 ≤ D &lt;1.2 &amp; 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Phased in from model year 2004–2009	40 CFR 94.8	THC, CO, NO <sub>x</sub> , PM
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Commercial Marine Diesel Engines	<p>Federal Tier 1 emission standards for new Category 3 marine diesel engines (<math>\geq 30</math> liters per cylinder displacement). (<a href="#">68 FR 9746, February 28, 2003</a>)</p> <table border="1" data-bbox="323 409 1136 675"> <thead> <tr> <th colspan="2">Tier 1 Category 3 Marine Diesel Engine Standards</th> </tr> <tr> <th>Engine Speed (n)</th> <th>NO<sub>x</sub> Emission Standards (g/kW-hr)</th> </tr> </thead> <tbody> <tr> <td>n <math>\geq</math> 2000 rpm</td> <td>9.8</td> </tr> <tr> <td>2000 &gt; n <math>\geq</math> 130 rpm</td> <td><math>45.0 \times n^{-0.2}</math></td> </tr> <tr> <td>n &lt; 130 rpm</td> <td>17.0</td> </tr> </tbody> </table> <table border="1" data-bbox="323 711 1289 899"> <thead> <tr> <th colspan="4">"Blue Sky Series" Voluntary Category 3 Marine Diesel Engine Standards</th> </tr> <tr> <th rowspan="2">Engine Speed (n)</th> <th colspan="3">Emission Standards (g/kW-hr)</th> </tr> <tr> <th>NOX</th> <th>HC</th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>n &lt; 130 rpm</td> <td><math>9.0 \times n^{-0.20}</math></td> <td>0.4</td> <td>3.0</td> </tr> </tbody> </table> <p>See: <a href="http://www.epa.gov/otaq/oceanvessels.htm">http://www.epa.gov/otaq/oceanvessels.htm</a></p>	Tier 1 Category 3 Marine Diesel Engine Standards		Engine Speed (n)	NO <sub>x</sub> Emission Standards (g/kW-hr)	n $\geq$ 2000 rpm	9.8	2000 > n $\geq$ 130 rpm	$45.0 \times n^{-0.2}$	n < 130 rpm	17.0	"Blue Sky Series" Voluntary Category 3 Marine Diesel Engine Standards				Engine Speed (n)	Emission Standards (g/kW-hr)			NOX	HC	CO	n < 130 rpm	$9.0 \times n^{-0.20}$	0.4	3.0	Model year 2004–2010	40 CFR 94.8	NO <sub>x</sub>
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n < 130 rpm	$9.0 \times n^{-0.20}$	0.4	3.0																										
Commercial/Recreational Marine Diesel Engines	<p>Federal emission standards for Commercial and Recreational Category 1 &amp; 2 marine diesel engines. (<a href="#">73 FR 37096, June 30, 2008</a>)</p> <p><b>Note:</b> To convert a standard from g/kW-hr to g/bhp-hr, multiply it by 0.7457.</p> <table border="1" data-bbox="323 1133 1339 1448"> <thead> <tr> <th colspan="6">40 CFR 1042.101 – Tier 3 Standards for Category 1 Engines Below 3700 kW<sup>a</sup> (g/kW-hr)</th> </tr> <tr> <th>Power Density and Application</th> <th>Displacement (L/cyl)</th> <th>Maximum Engine Power</th> <th>Model Year</th> <th>PM</th> <th>NO<sub>x</sub>+HC</th> </tr> </thead> <tbody> <tr> <td rowspan="3">all</td> <td rowspan="3">disp. &lt; 0.9</td> <td>kW &lt; 19</td> <td>2009+</td> <td>0.40</td> <td>7.5</td> </tr> <tr> <td rowspan="2">19 ≤ kW &lt; 75</td> <td>2009-2013</td> <td>0.30</td> <td>7.5</td> </tr> <tr> <td>2014+</td> <td>0.30</td> <td>4.7</td> </tr> </tbody> </table>	40 CFR 1042.101 – Tier 3 Standards for Category 1 Engines Below 3700 kW <sup>a</sup> (g/kW-hr)						Power Density and Application	Displacement (L/cyl)	Maximum Engine Power	Model Year	PM	NO <sub>x</sub> +HC	all	disp. < 0.9	kW < 19	2009+	0.40	7.5	19 ≤ kW < 75	2009-2013	0.30	7.5	2014+	0.30	4.7	Phased in from model year 2009–2018	40 CFR 1042.101	PM, NO <sub>x</sub> , HC
40 CFR 1042.101 – Tier 3 Standards for Category 1 Engines Below 3700 kW <sup>a</sup> (g/kW-hr)																													
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Source Category	Control Measure Description						Implementation Began	Regulatory Authority	Affected Pollutants
<i>Non-Road Sources: Diesel Equipment</i>									
	Commercial engines with kW/L $\leq 35^b$	disp. < 0.9	kW $\geq 75$	2012+	0.14	5.4			
		$0.9 \leq$ disp. < 1.2	all	2013+	0.12	5.4			
		$1.2 \leq$ disp. < 2.5	kW < 600	2014-2017	0.11	5.6			
				2018+	0.10	5.6			
		$2.5 \leq$ disp. < 3.5	kW < 600	2013-2017	0.11	5.6			
				2018+	0.10	5.6			
		$3.5 \leq$ disp. < 7.0	kW $\geq 600$	2013+	0.11	5.6			
				2012-2017	0.11	5.8			
	$3.5 \leq$ disp. < 7.0	kW < 600	2018+	0.10	5.8				
			2012+	0.11	5.8				
	Commercial engines with kW/L > 35 and all recreational engines	disp. < 0.9	kW $\geq 75$	2012+	0.15	5.8			
		$0.9 \leq$ disp. < 1.2	all	2013+	0.14	5.8			
		$1.2 \leq$ disp. < 2.5		2014+	0.12	5.8			
		$2.5 \leq$ disp. < 3.5		2013+	0.12	5.8			
		$3.5 \leq$ disp. < 7.0		2012+	0.11	5.8			

<sup>a</sup> No Tier 3 standards apply for commercial Category 1 engines at or above 3700 kW. See 40 CFR 1042.1(c) and 1042.101(a)(7) for the standards that apply for these engines.

<sup>b</sup> The applicable NOX+HC standards specified for Tier 2 engines continue to apply in Appendix I of this part continue to apply instead of the values noted in this table for commercial engines at or above 2000 kW. FELs for these engines may not be higher than the Tier 1 NOX standard specified in Appendix I of this part.

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants		
<i>Non-Road Sources: Diesel Equipment</i>						
	40 CFR 1042.101– Tier 3 Standards For Category 2 Engines Below 3700 kW <sup>a</sup> (g/kW-hr)					
	Displacement (L/cyl)	Maximum engine power	Model year	PM	NO <sub>x</sub> +H C	
	7.0 ≤ disp. < 15.0	kW < 2000	2013+	0.14	6.2	
		2000 ≤ kW < 3700	2013+	0.14	7.8 <sup>b</sup>	
	15.0 ≤ disp. < 20.0 <sup>c</sup>	kW < 2000	2014+	0.34	7.0	
	20.0 ≤ disp. < 25.0 <sup>c</sup>	kW < 2000	2014+	0.27	9.8	
	25.0 ≤ disp. < 30.0 <sup>c</sup>	kW < 2000	2014+	0.27	11.0	
	<sup>a</sup> No Tier 3 standards apply for Category 2 engines at or above 3700 kW. See 40 CFR 1042.1(c) and See 40 CFR 1042.101(a)(7) for the standards that apply for these engines. <sup>b</sup> For engines subject to the 7.8 g/kW-hr NO <sub>x</sub> +HC standard, FELs may not be higher than the Tier 1 NO <sub>x</sub> standard specified in Appendix I of this part. <sup>c</sup> No Tier 3 standards apply for Category 2 engines with per-cylinder displacement above 15.0 liters if maximum engine power is at or above 2000 kW. See 40 CFR 1042.1(c) and See 40 CFR 1042.101(a)(7) for the standards that apply for these engines.					
	40 CFR 1042.101 – Tier 4 Standards For Category 2 And Commercial Category 1 Engines Above 600 kW (g/kW-hr)					
	Maximum engine power	Displacement (L/cyl)	Model year	PM	NO <sub>x</sub>	HC
	600 ≤ kW < 1400	all	2017+	0.04	1.8	0.19
	1400 ≤ kW < 2000	all	2016+	0.04	1.8	0.19
	2000 ≤ kW < 3700 <sup>a</sup>	all	2014+	0.04	1.8	0.19
		disp. <15.0	2014–2015	0.12	1.8	0.19
	kW ≥ 3700	15.0 ≤ disp.< 30.0	2014–2015	0.25	1.8	0.19
		all	2016+	0.06	1.8	0.19
	<sup>a</sup> See 40 CFR 1042.101(a)(6) for interim PM standards that apply for model years 2014 and 2015 for engines between 2000 and 3700 kW. The Tier 4 NO <sub>x</sub> FEL cap for engines at or above 2000 kW and below 3700 kW is 7.0 g/kW-hr. Starting in the 2016					

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																													
	<p><i>Non-Road Sources: Diesel Equipment</i></p> <p>model year, the Tier 4 PM FEL cap for engines at or above 2000 kW and below 3700 kW is 0.34 g/kW-hr.</p> <table border="1" data-bbox="323 407 1339 683"> <thead> <tr> <th colspan="6" data-bbox="323 407 1339 477">40 CFR 1042.101 – Optional Tier 3 And Tier 4 Standards For Category 2 Engines At Or Above 1400 kW (g/kW-hr)</th> </tr> <tr> <th data-bbox="323 477 436 547">Tier</th> <th data-bbox="436 477 716 547">Maximum engine power</th> <th data-bbox="716 477 995 547">Model year</th> <th data-bbox="995 477 1108 547">PM</th> <th data-bbox="1108 477 1201 547">NO<sub>x</sub></th> <th data-bbox="1201 477 1339 547">HC</th> </tr> </thead> <tbody> <tr> <td data-bbox="323 547 436 613">Tier 3</td> <td data-bbox="436 547 716 613">kW ≥ 1400</td> <td data-bbox="716 547 995 613">2012–2014</td> <td data-bbox="995 547 1108 613">0.14</td> <td data-bbox="1108 547 1201 613">7.8</td> <td data-bbox="1201 547 1339 613">NO<sub>x</sub>+H C</td> </tr> <tr> <td data-bbox="323 613 436 683" rowspan="2">Tier 4</td> <td data-bbox="436 613 716 651">1400 ≤ kW &lt; 3700</td> <td data-bbox="716 613 995 651">2015</td> <td data-bbox="995 613 1108 651">0.04</td> <td data-bbox="1108 613 1201 651">1.8</td> <td data-bbox="1201 613 1339 651">0.19</td> </tr> <tr> <td data-bbox="436 651 716 683">kW ≥ 3700</td> <td data-bbox="716 651 995 683">2015</td> <td data-bbox="995 651 1108 683">0.06</td> <td data-bbox="1108 651 1201 683">1.8</td> <td data-bbox="1201 651 1339 683">0.19</td> </tr> </tbody> </table> <p>See: <a href="http://www.epa.gov/otaq/marine.htm">http://www.epa.gov/otaq/marine.htm</a></p>	40 CFR 1042.101 – Optional Tier 3 And Tier 4 Standards For Category 2 Engines At Or Above 1400 kW (g/kW-hr)						Tier	Maximum engine power	Model year	PM	NO <sub>x</sub>	HC	Tier 3	kW ≥ 1400	2012–2014	0.14	7.8	NO <sub>x</sub> +H C	Tier 4	1400 ≤ kW < 3700	2015	0.04	1.8	0.19	kW ≥ 3700	2015	0.06	1.8	0.19			
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Lawn & Garden Equipment	<p>Federal Portable Fuel Container evaporative emissions standard – (<a href="#">72 FR 8432, February 26, 2007</a>)</p> <table border="1" data-bbox="323 852 1144 992"> <thead> <tr> <th data-bbox="323 852 522 922">Year</th> <th data-bbox="522 852 1144 922">Evaporative Emission standard (grams/gallon/day)</th> </tr> </thead> <tbody> <tr> <td data-bbox="323 922 522 992" rowspan="2">2009+</td> <td data-bbox="522 922 1144 959">HC</td> </tr> <tr> <td data-bbox="522 959 1144 992">0.3</td> </tr> </tbody> </table>	Year	Evaporative Emission standard (grams/gallon/day)	2009+	HC	0.3	Beginning January 1, 2009.	40 CFR 59.611	HC																								
Year	Evaporative Emission standard (grams/gallon/day)																																
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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																							
<i>Non-Road Sources: Diesel Equipment</i>																											
Commercial Marine Diesel Engines	Federal emission standards for new Category 3 marine diesel engines ( $\geq 30$ liters per cylinder displacement). ( <a href="#">75 FR 22896; April 30, 2010</a> )	Beginning model year 2011	40 CFR 1042.104	NO <sub>x</sub> , HC, CO																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">NO<sub>x</sub> Emission Standards for Category 3 Engines (g/kW-hr) Emission Standards</th> <th rowspan="2" style="text-align: center;">Model Year</th> <th colspan="3" style="text-align: center;">Maximum In-Use Engine Speed</th> </tr> <tr> <th style="text-align: center;">Less than 130 RPM</th> <th style="text-align: center;">130-2000 RPM<sub>a</sub></th> <th style="text-align: center;">Over 2000 RPM</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Tier 1</td> <td style="text-align: center;">2004-2010<sub>b</sub></td> <td style="text-align: center;">17.0</td> <td style="text-align: center;"><math>45.0 \cdot n^{(-0.20)}</math></td> <td style="text-align: center;">9.8</td> </tr> <tr> <td style="text-align: center;">Tier 2</td> <td style="text-align: center;">2011-2015</td> <td style="text-align: center;">14.4</td> <td style="text-align: center;"><math>44.0 \cdot n^{(-0.23)}</math></td> <td style="text-align: center;">7.7</td> </tr> <tr> <td style="text-align: center;">Tier 3</td> <td style="text-align: center;">2016 and later</td> <td style="text-align: center;">3.4</td> <td style="text-align: center;"><math>9.0 \cdot n^{(-0.20)}</math></td> <td style="text-align: center;">2.0</td> </tr> </tbody> </table>				NO <sub>x</sub> Emission Standards for Category 3 Engines (g/kW-hr) Emission Standards	Model Year	Maximum In-Use Engine Speed			Less than 130 RPM	130-2000 RPM <sub>a</sub>	Over 2000 RPM	Tier 1	2004-2010 <sub>b</sub>	17.0	$45.0 \cdot n^{(-0.20)}$	9.8	Tier 2	2011-2015	14.4	$44.0 \cdot n^{(-0.23)}$	7.7	Tier 3	2016 and later	3.4	$9.0 \cdot n^{(-0.20)}$	2.0
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<p><sup>a</sup> Applicable standards are calculated from n (maximum in-use engine speed, in RPM, as specified in §1042.140). Round the standards to one decimal place.</p> <p><sup>b</sup> Tier 1 NO<sub>x</sub> standards apply as specified in 40 CFR part 94 for engines originally manufactured in model years 2004 through 2010. They are shown here only for reference.</p>																											
<ul style="list-style-type: none"> <li>• The HC standard for Tier 2 and later engines is 2.0 g/kW-hr.</li> <li>• The CO standard for Tier 2 and later engines is 5.0 g/kW-hr.</li> </ul>																											
See: <a href="http://www.epa.gov/otaq/oceanvessels.htm">http://www.epa.gov/otaq/oceanvessels.htm</a>																											

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Source Category	Control Measure Description	Implementation Began	Regulatory Authority	Affected Pollutants																																															
<i>On &amp; Non-Road Sources:</i>																																																			
Gasoline & Diesel Fuels	<p>EPA's Boutique Fuels List - as required by Section 1541(b) of The Energy Policy Act of 2005 (EPAAct) - (<a href="http://www.federalregister.gov/?date=2006-12-28">71 FR 78192, December 28, 2006</a>)</p> <table border="1" data-bbox="323 444 1339 1349"> <thead> <tr> <th colspan="3" data-bbox="323 444 1339 553">TOTAL NUMBER OF FUELS APPROVED IN STATE IMPLEMENTATION PLANS (SIPS) UNDER CAA SECTION 211(C)(4)(C) AS OF SEPTEMBER 1, 2004</th> </tr> <tr> <th data-bbox="323 553 856 591">Type of fuel control</th> <th data-bbox="856 553 999 591">PADD</th> <th data-bbox="999 553 1339 591">Region-state</th> </tr> </thead> <tbody> <tr> <td data-bbox="323 591 856 781" rowspan="5">RVP of 7.8 psi 1</td> <td data-bbox="856 591 999 628">1</td> <td data-bbox="999 591 1339 628">1-ME (May 1-Sep 15)*</td> </tr> <tr> <td data-bbox="856 628 999 665">1</td> <td data-bbox="999 628 1339 665">3-PA</td> </tr> <tr> <td data-bbox="856 665 999 703">2</td> <td data-bbox="999 665 1339 703">5-IN</td> </tr> <tr> <td data-bbox="856 703 999 740">2</td> <td data-bbox="999 703 1339 740">5-MI</td> </tr> <tr> <td data-bbox="856 740 999 781">3</td> <td data-bbox="999 740 1339 781">6-TX (May 1-Oct 1)*</td> </tr> <tr> <td data-bbox="323 781 856 818">RVP of 7.2 psi</td> <td data-bbox="856 781 999 818">2</td> <td data-bbox="999 781 1339 818">5-IL</td> </tr> <tr> <td data-bbox="323 818 856 971" rowspan="4">RVP of 7.0 psi</td> <td data-bbox="856 818 999 855">2</td> <td data-bbox="999 818 1339 855">7-KS</td> </tr> <tr> <td data-bbox="856 855 999 893">2</td> <td data-bbox="999 855 1339 893">7-MO</td> </tr> <tr> <td data-bbox="856 893 999 930">3</td> <td data-bbox="999 893 1339 930">4-AL</td> </tr> <tr> <td data-bbox="856 930 999 971">3</td> <td data-bbox="999 930 1339 971">6-TX</td> </tr> <tr> <td data-bbox="323 971 856 1045">RVP of 7.0 with gasoline sulfur provisions</td> <td data-bbox="856 971 999 1045">1</td> <td data-bbox="999 971 1339 1045">4-GA</td> </tr> <tr> <td data-bbox="323 1045 856 1083">Low Emission Diesel</td> <td data-bbox="856 1045 999 1083">3</td> <td data-bbox="999 1045 1339 1083">6-TX</td> </tr> <tr> <td data-bbox="323 1083 856 1120">Cleaner Burning Gasoline (Summer)</td> <td data-bbox="856 1083 999 1120">5</td> <td data-bbox="999 1083 1339 1120">9-AZ (May 1-Sep 30)</td> </tr> <tr> <td data-bbox="323 1120 856 1195">Cleaner Burning Gasoline (non-Summer)</td> <td data-bbox="856 1120 999 1195">5</td> <td data-bbox="999 1120 1339 1195">9-AZ (Oct 1-Apr 30)</td> </tr> <tr> <td data-bbox="323 1195 856 1232">Winter Gasoline (aromatics &amp; sulfur)</td> <td data-bbox="856 1195 999 1232">5</td> <td data-bbox="999 1195 1339 1232">9-NV</td> </tr> <tr> <td colspan="3" data-bbox="323 1232 1339 1349">* Dates listed in parentheses refer to summer gasoline programs with different RVP control periods from the federal RVP control period, which runs from June 1 through September 15.</td> </tr> </tbody> </table> <p data-bbox="323 1386 1031 1414">See: <a href="http://www.epa.gov/otaq/fuels/boutiquefuels/index.htm">http://www.epa.gov/otaq/fuels/boutiquefuels/index.htm</a></p>	TOTAL NUMBER OF FUELS APPROVED IN STATE IMPLEMENTATION PLANS (SIPS) UNDER CAA SECTION 211(C)(4)(C) AS OF SEPTEMBER 1, 2004			Type of fuel control	PADD	Region-state	RVP of 7.8 psi 1	1	1-ME (May 1-Sep 15)*	1	3-PA	2	5-IN	2	5-MI	3	6-TX (May 1-Oct 1)*	RVP of 7.2 psi	2	5-IL	RVP of 7.0 psi	2	7-KS	2	7-MO	3	4-AL	3	6-TX	RVP of 7.0 with gasoline sulfur provisions	1	4-GA	Low Emission Diesel	3	6-TX	Cleaner Burning Gasoline (Summer)	5	9-AZ (May 1-Sep 30)	Cleaner Burning Gasoline (non-Summer)	5	9-AZ (Oct 1-Apr 30)	Winter Gasoline (aromatics & sulfur)	5	9-NV	* Dates listed in parentheses refer to summer gasoline programs with different RVP control periods from the federal RVP control period, which runs from June 1 through September 15.			December 2006	42 USC 7545(c)(4)(C)(v)(IV)	N/A
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