

**TABLE U10-1**  
**COMPARISON OF MEASURED TOXIC PARTICULATE MATTER FROM**  
**THE COMBUSTION OF NATURAL GAS AND RESIDUAL (#6) FUEL OIL**

<b>ORGANIC COMPOUNDS</b>	<b>Natural Gas (lb/mmcfb)</b>	<b>Natural Gas (lb/mmbtu)</b>	<b>#6 Fuel Oil (lb/tgb)</b>	<b>#6 Fuel Oil (lb/mmbtu)</b>	<b>Ratio of NG/ Fuel Oil</b>
Acenaphthene*	9.00E-07 <sup>a</sup>	8.82E-10	2.11E-05	1.40E-07	0.006
Acenaphthylene*	9.00E-07 <sup>a</sup>	8.82E-10	2.53E-07	1.68E-09	0.527
Anthracene	1.20E-06 <sup>a</sup>	1.18E-09	1.22E-06	8.08E-09	0.146
Benanthracene	9.00E-07 <sup>a</sup>	8.82E-10	4.01E-06	2.66E-08	0.033
Benzo(a)pyrene <sup>b</sup>	6.00E-07 <sup>a</sup>	5.88E-10	-----	5.88E-10	1.000
Benzo(b)fluoranthene	9.00E-07 <sup>a</sup>	8.82E-10	7.40E-07	4.90E-09	0.180
Benzo(g,h,i)perylene	6.00E-07 <sup>a</sup>	5.88E-10	2.26E-06	1.50E-08	0.039
Benzo(k)fluoranthene	9.00E-07 <sup>a</sup>	8.82E-10	7.40E-07	4.90E-09	0.180
Chrysene	9.00E-07 <sup>a</sup>	8.82E-10	2.38E-06	1.58E-08	0.056
Dibenzo(a,h)anthracene	6.00E-07 <sup>a</sup>	5.88E-10	1.67E-06	1.11E-08	0.053
Fluoranthene	1.50E-06 <sup>a</sup>	1.47E-09	4.84E-06	3.21E-08	0.046
Indeno(1,2,3-cd)pyrene	9.00E-07 <sup>a</sup>	8.82E-10	2.14E-06	1.42E-08	0.062
Phenanthrene	8.50E-06 <sup>a</sup>	8.33E-09	1.05E-05	6.95E-08	0.120
Pyrene	2.50E-06 <sup>a</sup>	2.45E-09	4.25E-06	2.81E-08	0.087
<b>Total PAHs</b>	-----	<b>2.14E-08</b>	-----	<b>3.72E-07</b>	<b>0.057</b>
<b>METALS</b>					
Antimony	-----	-----	5.25E-03	3.48E-05	-----
Arsenic	2.00E-04	1.96E-07	1.32E-03	8.74E-06	0.022
Barium	4.40E-03	4.31E-06	2.57E-03	1.70E-05	0.253
Beryllium	6.00E-06 <sup>a</sup>	5.88E-09	2.78E-05	1.84E-07	0.032
Cadmium	1.10E-03	1.08E-06	3.98E-04	2.64E-06	0.409
Chloride	-----	-----	3.47E-01	2.30E-03	-----
Chromium	1.40E-03	1.37E-06	8.45E-04	5.60E-06	0.245
Chromium VI	-----	-----	2.48E-04	1.64E-06	-----
Cobalt	8.40E-05	8.24E-08	6.02E-03	3.99E-05	0.002
Copper	8.50E-04	8.33E-07	1.76E-03	1.17E-05	0.071
Lead	-----	-----	3.73E-02	2.47E-04	-----
Manganese	-----	-----	1.51E-03	1.00E-05	-----
Manganese	3.80E-04	3.73E-07	3.00E-03	1.99E-05	0.019
Molybdenum	1.10E-03	1.08E-06	7.87E-04	5.21E-06	0.207
Nickel	2.10E-03	2.06E-06	8.45E-02	5.60E-04	0.004
Phosphorous	-----	-----	9.46E-03	6.26E-05	-----
Selenium	1.20E-05 <sup>a</sup>	1.18E-08	6.83E-04	4.52E-06	0.003
Vanadium	2.30E-03	2.25E-06	3.18E-02	2.11E-04	0.011
Zinc	2.90E-02	2.84E-05	2.91E-02	1.93E-04	0.148
<b>Total Metals:</b>	-----	<b>4.21E-05</b>	-----	<b>3.73E-03</b>	<b>0.011</b>
<b>PARTICULATE MATTER</b>					
PM (Total)	7.6	7.45E-03	5.67 <sup>c</sup>	3.76E-02	0.198

SOURCE: EPA's AP-42, Version 5, Sections 1.3 and 1.4.

- <sup>a</sup> Emission factors for natural gas that were identified as being less than method detection thresholds were assumed as one-half of the detection threshold and are identified above with an asterick.
- <sup>b</sup> AP-42 did not provide a #6 fuel oil emission factor for benzo(a)pyrene. Therefore, it was assumed to be the same as natural gas.
- <sup>c</sup> The particulate matter emission factor for #6 fuel oil is based on a sulfur content of 0.28.