## Assumptions

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Measured Concentration in NAPL (mg/g)</th>
<th>Average Measured Concentration in Soil (ug/g)</th>
<th>Partial Pressure in the Pipe (atm)</th>
<th>Calculated Concentration in of NAPL Pipe Headspace (mg/m³)</th>
<th>Total Emissions from Pipe (lb)</th>
<th>Partial Pressure in the Pipe</th>
<th>Equilibrium Coefficient</th>
<th>Effective Diffusivity in Air (cm²/s)</th>
<th>Total Emission Emissions Potential (lb)</th>
<th>Excavation Emissions (lb)</th>
<th>Total Emission Quantity (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>1,930</td>
<td>0.85</td>
<td>2.29E-06</td>
<td>11</td>
<td>1.75E-05</td>
<td></td>
<td></td>
<td></td>
<td>3.09E-05</td>
<td>1.83E-09</td>
<td>1.75E-05</td>
</tr>
<tr>
<td>Benzene</td>
<td>23.7</td>
<td>0.13</td>
<td>3.46E-05</td>
<td>100</td>
<td>1.62E-04</td>
<td>5.78E-06</td>
<td>3.47E-03</td>
<td>7.23E-03</td>
<td>4.56E-03</td>
<td>3.29E-04</td>
<td>3.29E-04</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>15.0</td>
<td>0.09</td>
<td>7.03E-06</td>
<td>40</td>
<td>6.44E-05</td>
<td>1.77E-06</td>
<td>4.05E-02</td>
<td>4.91E-03</td>
<td>6.98E-07</td>
<td>3.35E-04</td>
<td>3.35E-04</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>6.8</td>
<td>0.09</td>
<td>9.65E-07</td>
<td>3.7</td>
<td>6.10E-06</td>
<td>2.88E-07</td>
<td>3.41E-04</td>
<td>5.82E-03</td>
<td>2.97E-06</td>
<td>1.31E-04</td>
<td>1.31E-04</td>
</tr>
<tr>
<td>Toluene</td>
<td>45.9</td>
<td>0.28</td>
<td>4.66E-05</td>
<td>157</td>
<td>2.56E-04</td>
<td>2.47E-06</td>
<td>8.01E-03</td>
<td>5.51E-03</td>
<td>2.96E-06</td>
<td>1.51E-04</td>
<td>1.51E-04</td>
</tr>
<tr>
<td>Styrene</td>
<td>39</td>
<td>&lt;0.01</td>
<td>5.68E-06</td>
<td>22</td>
<td>3.02E-05</td>
<td>0.42E-05</td>
<td>2.23E-03</td>
<td>6.75E-03</td>
<td>4.21E-05</td>
<td>3.00E-04</td>
<td>3.00E-04</td>
</tr>
<tr>
<td>m&amp;p-Xylene</td>
<td>33.9</td>
<td>0.41</td>
<td>5.22E-06</td>
<td>20</td>
<td>3.30E-05</td>
<td>1.08E-06</td>
<td>2.77E-03</td>
<td>2.72E-03</td>
<td>4.30E-06</td>
<td>3.38E-05</td>
<td>3.38E-05</td>
</tr>
<tr>
<td>o-Xylene</td>
<td>15</td>
<td>0.26</td>
<td>1.86E-06</td>
<td>7.2</td>
<td>1.17E-06</td>
<td>5.89E-07</td>
<td>2.21E-03</td>
<td>6.75E-03</td>
<td>2.94E-06</td>
<td>1.78E-05</td>
<td>1.78E-05</td>
</tr>
</tbody>
</table>

Notes:
1. All constants for m&p-xylene are the average of the individual constants for m-xylene and p-xylene.
2. The Partial Pressure in the Pipe was calculated using Raoult's Law and the Average Measured Concentration in NAPL. The Partial Pressure in Soil was calculated using Raoult's Law and the concentration in NAPL calculated by dividing the Average Measured Concentration in Soil by the TOC of Soil.
3. If the calculated Excavation Emissions exceeds the Total Excavation Emissions Potential, the Total Excavation Emissions Potential was used to calculate the Total Emission.
4. Only detected analytes with RIDEM minimum quantity values are shown. If an analyte was not detected in the soil, but was detected in the NAPL or vice versa, half the RL of the lowest RL was used to calculate the associated emissions.
5. Concentration units are in mg/kg and ug/g, both of which are equal to ppm.
6. MW = molecular weight; atm = atmosphere; kJ = kilojoules; mol = moles; NAPL = non-aqueous phase liquid; ppm = parts per million; mm Hg = millimeter mercury; cm = centimeter; m = meter; g = gram; ug = microgram; ft = feet, lb = pound; s = second; yr = year; h = hour; < = less than the reporting limit (RL); TOC = total organic carbon.
7. Yellow Highlighting indicates model inputs.
8. Blue Highlighting indicates the calculated Excavation Emissions Rate exceeds the Total Excavation Emissions Rate Potential. 
9. Red Highlighting indicates the Emissions Rate exceeds the Rhode Island Department of Environmental Management (RIDEM) Minimum Quantity.