*Table J-1 Summary of Calculated Soil Vapor Attenuation Factors using Screening and Advanced USEPA J&E Models*
*Soil Vapor Sampling Depth = 5 Ft bgs*
*RI/FS for PGOU Soil Sites in Areas 20, 21, and 49*
*Aerojet Superfund Site*
*Sacramento County, California*

| | | J&E Screen Model | | | | J&E Advanced Model | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Constituent** | **CAS No.** | **AF1** | **AF1[1]** | **AF2** | **AF2[1]** | **AF3** | **AF3[1]** | **AF4** | **AF4[1]** |
| Acetone | 67-64-1 | 4.10E-04 | 2,000 | | | | | | |
| Benzene | 71-43-2 | 3.41E-04 | 3,000 | | | | | | |
| Bromodichloromethane | 75-27-4 | 1.90E-04 | 5,000 | 3.72E-04 | 3,000 | 4.15E-05 | 24,000 | 7.20E-05 | 14,000 |
| 1,3-Butadiene | 106-99-0 | 4.68E-04 | 2,000 | | | | | | |
| Carbon Disulfide | 75-15-0 | 3.64E-04 | 3,000 | | | | | | |
| Chloroethane | 75-00-3 | 4.76E-04 | 2,000 | 5.57E-04 | 2,000 | 2.01E-04 | 5,000 | 2.62E-04 | 4,000 |
| Chloroform | 67-66-3 | 3.65E-04 | 3,000 | | | | | | |
| Chloromethane | 74-87-3 | 3.90E-04 | 3,000 | | | | | | |
| Benzyl Chloride* | 100-44-7 | 3.21E-04 | 3,000 | | | | | | |
| Cyclohexane | 110-82-7 | 4.46E-04 | 2,000 | | | | | | |
| Cumene | 98-82-8 | 2.97E-04 | 3,000 | | | | | | |
| 1,2,-Dichlorobenzene | 95-50-1 | 3.06E-04 | 3,000 | | | | | | |
| 1,1-Dichloroethane | 75-34-3 | 3.16E-04 | 3,000 | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 3.65E-04 | 3,000 | | | | | | |
| 1,1-Dichloroethene | 75-35-4 | 3.44E-04 | 3,000 | | | | | | |
| cis-1,2-Dichloroethene | 156-59-2 | 3.15E-04 | 3,000 | | | | | | |
| trans-1,2-Dichloroethene | 156-60-5 | 3.09E-04 | 3,000 | | | | | | |
| cis-1,3-Dichloropropene | 10061-01-5 | 2.91E-04 | 3,000 | | | | | | |
| trans-1,3-Dichloropropene | 10061-02-6 | 2.91E-04 | 3,000 | | | | | | |
| Ethanol | 64-17-5 | --- | --- | | | | | | |
| Ethylbenzene | 100-41-4 | 3.18E-04 | 3,000 | | | | | | |
| 4-Ethyltoluene (5) | 622-96-8 | 3.39E-04 | 3,000 | | | | | | |
| Freon 11 | 75-69-4 | 3.39E-04 | 3,000 | | | | | | |
| Freon 113 | 76-13-1 | 3.23E-04 | 3,000 | 4.83E-04 | 2,000 | 9.14E-05 | 11,000 | 1.44E-04 | 7,000 |
| Heptane (5) | 142-82-5 | 4.46E-04 | 2,000 | | | | | | |
| Hexane | 110-54-3 | 4.46E-04 | 2,000 | | | | | | |
| 2-Hexanone (methyl butyl ketone)(5) | 591-78-6 | 3.52E-04 | 3,000 | | | | | | |
| Hydrocarbons (5) | 129-00-0 | 4.05E-04 | 2,000 | | | | | | |
| Light Hydrocarbons (5) | 129-00-0 | 4.05E-04 | 2,000 | | | | | | |
| Methylene chloride | 75-09-2 | 3.61E-04 | 3,000 | | | | | | |
| Methyl ethyl ketone (2-Butanone) | 78-93-3 | 3.52E-04 | 3,000 | | | | | | |
| Methyl tert-butyl ether | 1634-04-4 | 3.64E-04 | 3,000 | | | | | | |
| Naphthalene | 91-20-3 | 2.87E-04 | 3,000 | | | | | | |
| 2-Propanol (isopropyl alcohol) | 67-63-0 | --- | --- | | | | | | |
| Propylbenzene | 103-65-1 | 2.85E-04 | 4,000 | | | | | | |
| Styrene | 100-42-5 | 3.10E-04 | 3,000 | | | | | | |
| Tetrachloroethene | 127-18-4 | 3.12E-04 | 3,000 | 4.76E-04 | 2,000 | 8.60E-05 | 12,000 | 1.37E-04 | 7,000 |
| Tetrahydrofuran | 109-99-9 | --- | --- | | | | | | |
| Toluene | 108-88-3 | 3.39E-04 | 3,000 | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 3.23E-04 | 3,000 | | | | | | |
| Trichloroethene | 79-01-6 | 3.25E-04 | 3,000 | 4.84E-04 | 2,000 | 9.24E-05 | 11,000 | 1.45E-04 | 7,000 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 2.87E-04 | 3,000 | | | | | | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 2.86E-04 | 3,000 | | | | | | |
| Vinyl chloride | 75-01-4 | 3.67E-04 | 3,000 | 5.08E-04 | 2,000 | 1.15E-04 | 9,000 | 1.73E-04 | 6,000 |
| Xylenes (m-xylene) | 108-38-3 | 3.08E-04 | 3,000 | | | | | | |
| Xylenes (o-xylene) | 95-47-6 | 3.39E-04 | 3,000 | | | | | | |
| Xylenes (p-xylene) | 106-42-3 | 3.21E-04 | 3,000 | | | | | | |

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**Notes and Key:**

1 = 1 divided by attenuation factor calculated by J&E model (1/AF)
AF = Attenuation factor
bgs = Below ground surface
J&E = Johnson and Ettinger
USEPA = United States Environmental Protection Agency
°C = Degrees Celsius

AF1 = Attenuation factors calculated using USEPA's Version 2 (April 2003) of Johnson and Ettinger Soil Gas Screen model using the following site-specific parameters:
- Average Soil Temperature = 15°C - Site specific
- Dry bulk density = 1.5 grams/cubic centimeter ($g/cm^3$) - Site specific & Default
- Total porosity = 0.43 - Site specific & Default
- Water-filled porosity = 0.24 $cm^3/cm^3$. Based on average soil moisture of 16.1% for 127 soil samples.
- Soil vapor permeability = 1.00E-08 square centimeters ($cm^2$)
- Soil gas sampling depth = 152.4 cm (5 feet)
- Depth below grade to bottom of enclosed space floor = 15 cm

AF2 = Attenuation factors calculated using USEPA's Version 2 (April 2003) of Johnson and Ettinger Soil Gas Screen model using the following site-specific and default parameters:
- Average Soil Temperature = 15°C - Site specific
- Dry bulk density = 1.5 grams/cubic centimeter ($g/cm^3$) - Site specific & Default
- Total porosity = 0.43 - Site specific & Default
- Water-filled porosity = 0.15 $cm^3/cm^3$ - DTSC Default
- Soil vapor permeability = 1.00E-08 square centimeters ($cm^2$)
- Soil gas sampling depth = 152.4 cm (5 feet)
- Depth below grade to bottom of enclosed space floor = 15 cm

AF3 = Attenuation factors calculated using USEPA's Version 2 (April 2003) of Johnson and Ettinger Soil Gas Advanced model using the following site-specific and default parameters:
- Average Soil Temperature = 15°C - Site specific
- Stratum A Soil Type = Loamy Sand (LS) - Site Specific
- Dry bulk density = 1.5 grams/cubic centimeter ($g/cm^3$) - Site Specific and Model Default
- Total porosity = 0.43 - Site Specific and Model Default
- Water-filled porosity = 0.24 $cm^3/cm^3$. Based on average soil moisture of 16.1% for 127 soil samples.
- Soil vapor permeability = 1.00E-08 square centimeters ($cm^2$) - Site Specific and Model Default
- Soil gas sampling depth = 152.4 cm (5 feet)
- Depth below grade to bottom of enclosed space floor = 15 cm

AF4 = Attenuation factors calculated using USEPA's Version 2 (April 2003) of Johnson and Ettinger Soil Gas Advanced model using the following site-specific and default parameters:
- Average Soil Temperature = 15°C - Site specific
- Stratum A Soil Type = Loamy Sand (LS) - Site Specific
- Dry bulk density = 1.5 grams/cubic centimeter ($g/cm^3$) - Site Specific and Model Default
- Total porosity = 0.43 - Site Specific and Model Default
- Water-filled porosity = 0.15 $cm^3/cm^3$. USEPA and DTSC default.
- Soil vapor permeability = 1.00E-08 square centimeters ($cm^2$) - Site Specific and Model Default
- Soil gas sampling depth = 152.4 cm (5 feet)
- Depth below grade to bottom of enclosed space floor = 15 cm