State Laws on Soil Vapor Intrusion

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SUMMARY

This dataset captures how states address the volatilization of chemicals of concern from subsurface soils to indoor air during the soil vapor intrusion pathway.

ABOUT SOIL VAPOR INTRUSION LAWS & THE DATA

Soil vapor intrusion is caused when the fumes from underground naturally occurring and anthropogenic chemicals migrate inside a building.

Workers in office buildings and those on abatement/construction projects may be overexposed to and under-protected from harmful chemicals. Those living over or near contaminated sites may also be exposed to chemical vapors if the chemicals migrate from the subsurface into indoor air. In extreme instances, chemical vapors can accumulate and become concentrated indoors, serving as a potential explosive hazard to those occupying the buildings.

Chemicals likely to migrate into indoor air through soil vapor intrusion are now associated with multiple adverse health effects. Prolonged exposure can lead to cancer, among other negative health outcomes. These vapor-forming chemicals may include volatile organic compounds (VOC’s), semi-volatile organic compounds (sVOC’s), elemental mercury and certain chemicals common in the environment such as polychlorinated biphenyls and pesticides. Particular chemicals of concern include petroleum hydrocarbons, such as benzene, ethylbenzene, xylene, toluene, and naphthalene; as well as chlorinated solvents such as trichloroethylene (TCE), tetrachloroethylene (PCE or PERC), methylene chloride, and vinyl chloride.

Numerous states have enacted laws, regulations, and/or policy standards concerning the soil vapor intrusion pathway for chemicals that can migrate from contaminated soils and groundwater into indoor air from the subsurface. These measures are designed to protect the public health and in some cases worker safety, although the method of regulation and the standards set vary from state to state.

In addition, the Environmental Protection Agency (EPA) finalized guidance on vapor intrusion in 2015. Many states adopted their regulations prior to EPA’s guidance. In some cases the EPA standard exceeded that set by states, but in other cases the state standard remains more protective than that set by the federal government.

Some findings from the dataset include:

- Forty-three states and the District of Columbia require soil vapor sampling.
Fifteen states distinguish between types of buildings (residential, commercial, industrial, schools, and daycares) when applying soil vapor standards: Alaska, Arizona, Alabama, Connecticut, Kansas, Massachusetts, Michigan, Minnesota, Montana, North Carolina, Nebraska, New Jersey, New York, Ohio, and Wisconsin. Oregon is the only state that also distinguishes residential from urban residential when evaluating the SVI pathway.


**NAVIGATING THE DATA**

There are two ways to navigate the data by clicking the **Filter** tab or the **Explore** tab — for each option, the data can be visualized in a map and table format or in jurisdiction profiles.

**Filter**

The dataset homepage will default to the Filter tab. Here, users may answer a series of questions to learn more about the characteristics of the laws. Answering more than one question will show all the jurisdictions that meet the combined criteria. Criteria selected will be listed above the questions, and can be removed by clicking the white X or by clicking “Reset” above the questions.

**Explore**

Users can access Explore by clicking the Explore tab in the bar above the questions. Using Explore, users will see the answers to one question across all jurisdictions.

The primary questions in this dataset are:

1. Does the state require soil vapor sampling?
2. Does the state have a law, regulation or standalone guidance document regarding soil vapor intrusion?
3. What categories of chemicals does the state address in SVI Pathway?
4. Does the state specify a distance from receptor that is higher or lower than the EPA’s established distance of 100ft?
5. Does the state specify sampling requirements for pathways of the VI pathway?
6. Does the state distinguish between the following types of buildings?
7. Does the state specify requirements for SVI mitigation and/or remediation?

**DISPLAYING THE RESULTS**

There are two display modes once criteria have been selected by using either the Filter or Explore tab — **Map** display mode and **Profiles** display mode.

**Map Display**

LawAtlas.org dataset homepages default to the map display mode. When querying the data using the Filter tab, all jurisdictions that meet the criteria selected will display in one tone of yellow. Those jurisdictions that do not meet the criteria selected will be colored gray. When
querying the data using the Explore tab, the map will illuminate with colors from yellow to red that are associated with the various answer choices (the color-coding is defined by the key to the left of the map).

Below the map, a table will appear. Using the Filter or Explore tab to navigate the questions will change the display:

- Using the Filter tab, you can select an unlimited number of criteria and the applicable jurisdictions that meet the combined criteria will be displayed in the table below.
- Using the Explore tab, you can isolate a single criterion and the applicable jurisdictions will appear in the table below.

Profiles Display
The Profiles display presents the results of the criteria selected in a text-based format for each applicable jurisdiction. Using the Filter tab, jurisdictions that meet the criteria selected will display. Using the Explore tab, jurisdictions that meet the criterion selected will display. If no criteria are selected, the full profiles for each state will appear under both Filter and Explore.

Profile Legend
Within each Profile box, above the questions and answers, there are additional options and information useful in exploring the law:

<table>
<thead>
<tr>
<th>§§</th>
<th>Toggle Legal Text – Selecting this option will show all the legal text used to answer questions for this jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toggle Full Place Profile – Selecting this option will show all questions and answers for this jurisdiction, regardless of what was selected using the Filter or Explore tabs.</td>
</tr>
<tr>
<td></td>
<td>Toggle Size – Selecting this option will make the profile larger, but will not change the information displayed.</td>
</tr>
</tbody>
</table>

Legal Text History – This interactive timeline displays when changes in the law have occurred within a jurisdiction. Using the arrows to the left or right, users may explore how the law has changed over time as new amendments to the law have been enacted. The timeline will change from gray to a shade of yellow when the jurisdiction passed its first relevant law. Each change in the law after that is marked by a break in the timeline.

Map and Profile Legend
There are a few symbols to be aware of in both Map and Profiles display modes:
DATASET RESOURCES

Each dataset homepage includes the following resources available for download:

- **Data**: The Data file exports in CSV format and may contain two tabs. The “Statistical Data” tab contains the legal variables coded in the dataset, displayed as values defined in the accompanying Codebook. The “Summary Data” tab contains the legal variables coded in the dataset in text form, as well as the accompanying citations and any caution notes that may be included. Note: if there is only one tab available for download it will be the “Statistical Data” as described above.

- **Codebook**: The Codebook defines all of the coded variables in the dataset. The Codebook lists the question, question type, variable name, variable value and variable label. The Codebook should be used in conjunction with the Statistical Data extract.

- **Research Protocol**: The Research Protocol is a comprehensive document that outlines the entire methodology of the project, including the scope, inclusion and exclusion criteria, data collection methods, definitions, coding scheme decisions, as well as the quality control process.

- **Summary Report**: The Summary Report provides a snapshot of important findings from the dataset.

ADDITIONAL INFORMATION

For additional information about the Soil Vapor Intrusion (SVI) pathway, please see:


This collection of laws does not provide legal advice nor does it address enforcement of laws, administrative policies, case law, or any other sources of law. Should you have a specific question about these laws in your state, please contact an attorney in your jurisdiction.