



CONCEPTUAL SITE MODEL CHECKLIST

The information included in this checklist may be useful for developing a site-specific conceptual migration model and in planning soil gas sampling. The investigator may use this checklist to compile information for each site.

Utilities and Process Piping

- Locate and map out all underground utilities near the soil or groundwater impacts. Pay particular attention to utilities that connect impacted areas to occupied buildings.
- Locate and map out all underground process piping near the soil or groundwater impacts.

Buildings (Receptors)

- Locate and map out existing and potential future buildings.
- Identify the occupancy and use of the buildings (e.g., residential, commercial). You may need to interview occupants to obtain this information.
- Describe the construction of the building including materials (e.g., wood frame, block), openings (e.g., windows, doors), and height (e.g., one story, two story, multistory). Determine whether there is an elevator shaft in the building.
- Describe the foundation construction:
 - Type (e.g., basement, crawl space, slab on grade)
 - Floor construction (e.g., concrete, dirt)
 - Depth below grade
- Describe the HVAC system in the building:
 - Type (e.g., forced air, radiant)
 - Equipment location (e.g., basement, crawl space, utility closet, attic, roof)
 - Source of return air (e.g., inside air, outside air, combination)
 - System design considerations relating to indoor air pressure (e.g., positive pressure is often the case for commercial buildings)

- Describe subslab ventilation systems or moisture barriers present on existing buildings, or identify building- and fire-code requirements for subslab ventilation systems (e.g., for methane) or moisture barriers below foundations.

Source Area

- Locate and map out the source area for the vapor-phase contaminants related to the subsurface vapor intrusion pathway.
- Describe the presence, distribution, and composition of any NAPL at the site.
- Identify the vapor-phase contaminants that are to be considered for the subsurface vapor intrusion pathway.
- Describe the status and results for the delineation of contamination in environmental media, specifically soil and groundwater, between the source area and the potential impacted buildings.
- Describe the environmental media (e.g., soil, groundwater, both) containing contaminants.
- Describe the depth to source area.
- Describe the potential migration characteristics (e.g., stable, increasing, decreasing) for the distribution of contaminants.

Geology/Hydrogeology

- Review all boring logs, monitoring well construction, and soil sampling data to understand the following:
 - Heterogeneity/homogeneity of soils and the lithologic units encountered and the expected/observed contaminant migration:
 - Depth and lateral continuity of any confining units that may impede contaminant migration
 - Depth and lateral continuity of any highly transmissive units that may enhance contaminant migration
 - Depth of vadose (unsaturated) zone, capillary fringe, and phreatic (saturated) zone:
 - Note any seasonal water table fluctuations and seasonal flow direction changes (hydraulic gradient).
 - Note the depth interval between the vapor source and the ground surface.

- Note the presence of any perched aquifers.
- Note where the water table intersects the well screen interval or the presence of submerged screen.

- Describe distinct strata (soil type and moisture content, e.g., moist, wet, dry) and the depth intervals between the vapor source and ground surface.

- Describe the depth to groundwater.

- Describe groundwater characteristics (e.g., seasonal fluctuation, hydraulic gradient).

Site Characteristics

- Estimate the distance from edge of groundwater plume to building.

- Determine nearby potential sources.

- Estimate the distance from vapor source area to building.

- Describe the surface cover between the vapor source area and the potentially impacted building.