Conceptual Site Model Considerations - Vapor Intrusion	
Site Name	
Site Description	Location:
	Size:
	Site Status: ☐ Active ☐ Inactive ☐ Unknown
Site Conditions	
Current Conditions (Request maps of site and adjacent areas)	Describe present site conditions using information obtained during property inspection or site-specific documents to identify: ☐ On-site land use (e.g. residential, industrial, recreational, commercial, school) ☐ Land use on adjacent property ☐ Site topography and surface water runoff patterns ☐ Surface features (pavement, buildings, landscaping, etc.) ☐ Subsurface infrastructure (pipelines, french drains, utility conduits, etc.) ☐ Number/type of people (residents [adults/children], industrial workers, construction workers) ☐ Distance from base boundary, beneficial use wells, or other sensitive resources ☐ Distance to nearest off-base community (residential and non-residential) ☐ Site investigation phase, cleanup, or post-cleanup phase ☐ Identify other site resources such as surface water bodies ☐ Site ownership/control and easements
Future Conditions	Describe potential future conditions (obtain from Base Master Plans or redevelopment plans for property transfers), consider including information as was identified under "current conditions" above
Geology and Hydrogeology	☐ Description of regional and site geology ☐ Physical properties of subsurface materials (e.g., porosity, bulk density, moisture content) ☐ Stratigraphy, including thickness, lateral extent, continuity of units, and presence of depositional features, such as channel deposits, that may provide preferential pathways for, or barriers to, contaminant transport or implementation of remedial options ☐ Geologic structures that may form preferential pathways for contaminant migration, zones of accumulation, or may potentially impact in situ or ex situ remedial options ☐ Aquifer characteristics including: • Groundwater current and potential use (potable vs. non-potable) • Depth to groundwater and seasonal variation • Hydraulic gradients (horizontal and vertical) (natural vs. induced)

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	• Groundwater recharge and discharge information • Groundwater flow direction and hydraulic gradients (horizontal and vertical) (natural vs. induced) ☐ Presence and thickness of a clean groundwater lens at the top of the aquifer
Nature and Extent of Contamination	
Impacted Media	☐ Surface soil ☐ Subsurface soil ☐ Groundwater ☐ NAPL ☐ Soil gas
Description (Request figures)	List all known or suspected contaminant sources For each source area, record the following information: ☐ Describe history of contamination ☐ Describe previous remedial/removal actions ☐ Depth to top of source/plume ☐ Depth to bottom of source/plume ☐ Source/plume area ☐ Source/plume length parallel to groundwater; plume orientation, direction, and speed; indicate if plume is migrating under residential vs. non-residential developments (with or w/o basements) ☐ Identify contaminants/concentrations (typical constituents, components, additives, etc. stored or handled on the property or constituents detected in the environment): ☐ volatile organics ☐ semi-volatile organics ☐ other organics ☐ metals ☐ other inorganics ☐ NAPLs
Special Considerations for Vapor Intrusion CSMs	
Contaminant Sources for Vapor Intrusion	What are the source(s) of vapor intrusion at the site? ☐ Dissolved plume ☐ NAPL ☐ Contaminated soil ☐ Soil gas Are there COCs of sufficient volatility and toxicity in subsurface? (Refer to Table A-1 of the DoD VI Handbook [January 2009] for chemical-specific toxicity and volatility assessment)

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	Do concentrations exceed generic screening criteria based on appropriate exposure scenarios/contaminated media? [For generic screening criteria refer to: 1) Appendix H of the ITRC [2007] guidance; 2) Use of USEPA Johnson & Ettinger model for Subsurface VI to Indoor Air; 3) State-specific screening levels/guidance]
Assess Quality of Data	Are there sufficient data of adequate quality to support a quantitative vapor intrusion assessment? ☐ Age of the data ☐ Number of sampling events/number of samples per each medium of interest ☐ Sample collection methods ☐ Analyses conducted for all suspected chemicals and degradation products ☐ Reporting limits sufficiently low for comparison to screening criteria ☐ Sampling locations relative to source area and buildings
Background Levels	Identify background contributions to indoor air ☐ Outdoor Sources: ☐ Indoor Sources: What are the background concentrations for each COC at the site (refer to Appendix G of the DOD Vapor Intrusion Handbook for assessment of background conditions, including literature values)?
Migration Mechanisms	What are the dominant migration mechanisms at the site? ☐ Diffusion in the unsaturated zone ☐ Diffusion through the capillary zone immediately above the top of the water table ☐ Advective/convective transport ☐ Migration through preferential pathways
Building Uses and Characteristics	Record relevant building information: ☐ Building use (e.g., residential, non-residential) ☐ Exposed population (e.g., adult, children) ☐ Foundation type/material (e.g., slab on grade, basement) ☐ Distance from source area ☐ Floor thickness ☐ Length of structure ☐ Width of structure ☐ Height of structure

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	☐ Floor-wall seam crack width Evaluate the enclosed inhabited space of the building, "Building Envelope" ☐ HVAC system ☐ Leaky or tight (sumps/open pits) ☐ Differential pressure monitoring
Factors Affecting Vapor Migration	Define the key vadose zone characteristics and vapor migration pathways: ☐ Depth to source ☐ Soil type ☐ Horizontal extent of contamination ☐ Distance of vapor source from buildings ☐ Sufficient delineation of the source area(s) ☐ Identify locations and depths of major underground utilities
Risk Assessment Exposure Pathways and Receptors for Vapor Intrusion	
Current and Future Land Use	Current: ☐ residential ☐ industrial ☐ commercial ☐ agricultural ☐ recreational ☐ other Future: ☐ residential ☐ industrial ☐ commercial ☐ agricultural ☐ recreational ☐ other Surrounding: ☐ residential ☐ industrial ☐ commercial ☐ agricultural ☐ recreational ☐ other
Media affected or potentially affected	Source #: ☐ soil ☐ groundwater Source #: ☐ soil ☐ groundwater
Identify Potential Receptors	Current Human: ☐ residents ☐ visitors ☐ workers ☐ other Future Human: ☐ residents ☐ visitors ☐ workers ☐ other
Identify	

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Appropriate Chemical-Specific Screening Level for Exposure	Human: ☐ generic ☐ site-specific
Is the Vapor Intrusion Exposure Complete?	☐ yes ☐ no Rationale for exclusion of exposure pathway(s):