This Petroleum Risk Evaluation Checklist is designed to help you conduct a detailed site assessment. The Petroleum Risk Evaluation Checklist assists project managers in ensuring that they have considered many site issues in developing a Conceptual Site Model (CSM) for a specific site. It provides links to specific sections of the three ITRC Guidance Documents for quick reference.

Download the interactive Risk Evaluation Checklist

ITRC Petroleum Risk Evaluation Checklist

Screening Questions	References**						Applicable to Scenario? (Y/N)	Notes
STEP 1: Emergency Response/Initial Investigation (LNAPL: does not address emergency responses)								
Was emergency response required?	PVI Figure 1-1	TPH Section 2.4	TPH Section 9.2					Maintain surveillance of any location where an exposure has already occurred (identifies preferential migration pathways)
STEP 2: Site Characterization to Create the Conceptual Site Model								
How to create an Initial Conceptual Site Model.	LNAPL Section 4 4.3	TPH Section 5.9	PVI Section 2.3					
Where is the release source location? Is there an ongoing release of LNAPL?	TPH Table 5-1	LNAPL Section 3.2.1	PVI Section 3.1.4					
Site Type - Classify site as either: Petroleum UST/AST Site: Petroleum UST/AST sites generally include: a) facilities used for vehicle fueling (e.g., gas stations, municipal fleet yards, bus terminals, fire stations, etc.) and b) commercial/home heating oil tanks. Fuels and oils at these sites are typically stored in USTs, but could be stored in similarly sized ASTs. Petroleum Industrial Site: Includes: a) bulk fuel terminals, b) refineries, c) exploration and production sites, d) crude oil and product pipelines, and e) former manufactured gas plants.	PVI Section 2.5	PVI Table 2-2	PVI Section 3.1.1	PVI Appendix E				
What is the predominant type of petroleum released? (e.g., gasoline, diesel, historical leaded gasoline)	TPH Table 5.1 & Section 5.1	PVI Sections 2.4 & 2.5	PVI Figure 2-3	PVI Table 2-2	PVI Section 3.1.4			
Are physical and chemical properties of the petroleum type known? (this will help identify concerns and subsequent LNAPL behavior)	LNAPL Section 3							
Identify individual constituents that are contaminants of concern.	TPH Section 4.5.4	TPH Section 5.5	TPH Section 5.7	PVI Section 3.1.4				
What is the areal and vertical extent of contamination? What is the range of groundwater level fluctuation (smear zone) and flow direction variation? Identify migration pathways (bedding, fractures, manmade paths).	TPH Section 5.2	PVI Section 3.1.3	LNAPL Appendix D					
Is mobile LNAPL present? What is the extent of mobile LNAPL (in wells)? Is LNAPL migrating, stable or receding?	LNAPL Section 3.5.3	TPH Section 5.2	LNAPL Section 3.5.1	LNAPL Table 4-1				
Is the LNAPL hydrogeologic condition known? (i.e. confined, unconfined, perched, submerged)?	LNAPL Section 4.2							
Are dissolved and vapor phase issues expected based on LNAPL composition?	LNAPL Section 4.2							
What media have been impacted by the release? (e.g. soil, groundwater, soil vapor)	TPH Section 5.3							
Identify points of exposure, e.g.: - Property boundaries - Surficial soils - Subsurface utilities - Structures - Groundwater wells - Surface water - Sensitive environments (parks, wetlands)	LNAPL Section 4.2	LNAPL Appendix E	TPH Section 5.4	PVI Section 3.1.5	PVI Section 3.1.6			

Identify exposure pathways to a receptor, e.g.: - Surficial soil - ingestion, dermal contact, inhalation - Groundwater ingestion - Groundwater (or LNAPL) to indoor air - Subsurface soil to indoor air - Subsurface soil leaching to groundwater	LNAPL Section 4.2	TPH Section 6	PVI Section 1					
What is current, historical, and future land use?	TPH Section 5.7	LNAPL Section 4.2	PVI Section 6	PVI Appendix F				
Are geotechnical or aesthetics issues present?	LNAPL Section 5.1							
Is the distance between any current or future building foundations and the edge of petroleum vapor source < 30 ft? - List buildings that fall within the 30 ft inclusion zone.	PVI Section 3.1.4	PVI Section 3.1.5	PVI Section 3.2	PVI Appendix F				
Determine the vertical separation distance (Z) between the bottom of the building foundation and the top of the petroleum vapor source based on petroleum site type and petroleum vapor source. Dissolved Phase: Z > 5 ft LNAPL: Z > 15 (UST/AST) or Z > 18 ft (Industrial Sites) List buildings that fall within their respective vertical screening distance.	PVI	LNAPL Section 5.1.1						
Determine the type of petroleum vapor source (dissolved-phase or LNAPL) underlying each building of interest. - List buildings and vapor source as appropriate.	PVI							
Are there precluding factors requiring theses distances to be increased? - Preferential pathways (natural - e.g., karst or fractured geology or anthropogenic - e.g., sanitary sewers, piping corridors)? - Expanding/advancing plume? - Certain fuel types (e.g., lead scavengers or > 10% vol/vol ethanol)? - Certain soil types (e.g., peat or excessively dry soils between the source and the building)? - How does the stratigraphy relate to impacts and potential migration?	PVI Section 3.1.4	PVI Section 3.1.5	PVI Section 3.2	PVI Figure 3-2, 3-3 & 3-4	PVI Appendix F	LNAPL Section 4.2		
Are dissolved and vapor plumes characterized?	LNAPL Section 4.2	PVI Figure 1-2	PVI Appendix C.2	PVI Section 2.3 & Figure 3-2 (CSM)	PVI Section 2.5	PVI Section 3.0 (Screening)		
Are degradation (i.e. weathering) compounds present? What attenuation mechanisms are taking place?	LNAPL Appendix B	TPH Section 4.4	TPH Section 4.5.3	TPH Section 5.3	TPH Table 5-2	TPH Section 5.12		
What TPH analytical methods will be used to analyze the samples?	TPH Section 5.9	TPH Section 5.10	TPH Section 5.11	TPH Section 5.12				
STEP 3: Additional Assessment								
Have the site contaminants been properly delineated? Is additional information/data needed to complete the CSM? If so, will additional field work be required?	TPH Section 5.2	TPH Section 5.7	PVI Section 4.4	PVI Appendix G				
Has the potential for PVI at all possibly affected buildings been assessed? Are there sufficient data to reach a vapor control decision at the site?	PVI Section 4.4	PVI Appendix G						
Where will samples be collected and in which media (e.g. soil, groundwater, soil vapor, etc.)?	TPH Section 5.7							
**(All PVI references can be accessed through the Table of Contents links on page 12 of the PVI Guidance Document PDF File)								