

**Tennessee Department of Environment and Conservation
Division of Underground Storage Tanks
Initial Response and Hazard Management Report Guidelines
Part A**

Instructions:

The Initial Response and Hazard Management Report (IRHMR) is due within sixty (60) calendar days after the Responsible Party has been directed by the Division to begin an investigation. The IRHMR shall contain **all** data gathered during field activities. Environmental assessment activities and evaluation of the subsurface investigation shall be directed by a registered professional geologist under the Tennessee Geologist Act (*T.C.A. §62-36-101 et seq.*) or a registered professional engineer under the Tennessee Architects, Engineers, Landscape Architects, and Interior Designers Law and Rules (*T.C.A. §62-2-101 et seq.*).

If petroleum hydrocarbons are detected in any drinking water supplies, then the Division and the well user(s) shall be notified within seventy-two (72) hours of the receipt of the sample results. If the contaminant concentration exceeds the drinking water Maximum Contaminant Level (MCL) for any Chemical of Concern (COC) (see Reference 3), then an alternate drinking water supply shall be supplied to the user(s) of any of these drinking water supplies within twenty-four (24) hours of the receipt of the sample results. Discuss possible long-term planning for provision of a permanent source of potable drinking water. Prior to implementation, a proposal including costs shall be submitted in accordance with rule 1200-1-15-.06(4)(b)1.(ii).

If the IRHMR has not been submitted by the established deadline, then a written request, justifying an extension shall be submitted to the appropriate environmental field office before the deadline. An extension is not automatic and enforcement actions may be taken to insure prompt compliance with established deadlines. Failure to meet established deadlines may place the Responsible Party out of substantial compliance and may result in the loss of fund coverage.

Each section of the IRHMR shall be prepared and assembled in the order presented within these guidelines. Text shall be provided explaining the associated tables and maps. All variations from the procedures detailed in the Environmental Assessment Guidelines (EAG) shall be justified. All maps and tables shall be in the appropriate sections, not in appendices. All maps shall be on 8.5 × 11 or 11 × 17 inch paper and contain, at a minimum, a north arrow, legend, scale bar and figure number. These guidelines are intended to provide a structured outline. Any information that is not specifically requested but is relevant to the project shall also be included. The preparer shall assemble the required information in each section so as to provide a comprehensive document. All pages of the report, including the tables and figures, shall be consecutively numbered. Each section and subsection heading shall be clearly printed in the report. A table of contents shall be provided listing the location of all sections, maps, tables, and appendices.

All correspondence, reports, laboratory analysis sheets, etc. shall contain the TN UST Facility ID Number. Photostatic copies of the laboratory analysis sheets are not acceptable unless the originals have previously been submitted in another report.

A. Facility and General Information

1. Date of Report: _____
2. Facility ID # : _____
3. Facility Name: _____
4. Facility Address: _____
5. Latitude and Longitude of UST system:
Latitude: _____° _____' _____"; Longitude: _____° _____' _____"
If decimal seconds were recorded, then convert to seconds.
6. Owner/Operator Name: _____
7. Owner/Operator Address: _____
8. Corrective Action Contractor (CAC) responsible for hazard management measures:
CAC: _____
Subcontractor(s): _____

B. Release History

1. Date release confirmed: _____
2. Date release reported to the Division: _____
Method of contact: Mail Electronic Mail Telephone
 Facsimile Other Explain: _____
Division personnel contacted: _____
Reported by: _____
3. Type of petroleum released, if known: Gasoline Diesel Kerosene
 Waste Oil Aviation Fuel Other Explain: _____
4. Source of release: UST Line Dispenser Sump area
 Fill port area Other Explain: _____
5. Provide specific details about the release point, if known (i.e. Tank #2, line leak detector failure, Regular unleaded flex connector failure at dispenser # 3, etc.): _____

6. Volume of the release: _____-gallons Known Estimated

7. Describe actions taken to prevent further release to the environment (i.e. removal of product from tank, repair to or removal of the tank system, etc.) and prevent further migration of the petroleum (i.e. removal of free product, removal of contaminated soil, etc.): _____

C. Receptor Information

For questions with check boxes below, check all that apply:

1. Water supply on the UST property:
 Municipal Private Well Private Spring
2. Water supply on adjacent properties within 0.10 mile of the UST property:
 Municipal Private Well Private Spring
3. Address, distance, and direction to the nearest drinking water well within one-half (0.5) mile radius of the UST site, if applicable: _____

4. Distance and direction to the nearest well head protection area within one-half (0.5) mile radius of the UST site, if applicable: _____

5. Name, distance, and direction to the nearest surface water within one-half (0.5) mile radius of the UST site, if applicable: _____

6. Land use on the UST property: Commercial Residential
7. Type of structural foundation(s) on the UST property:
 Basement Crawl Space Slab-on-grade
8. Current land use on adjacent properties:
 Commercial Residential Agricultural
9. Type of structural foundation(s) on adjacent properties:
 Basement Crawl Space Slab-on-grade
10. a. Address, distance, and direction to the nearest off property occupied residence within one-half (0.5) mile radius of the UST site, if applicable: _____

- b. What is the type of foundation for the building?
 Basement Crawl Space Slab-on-grade

D. Hazard Information

1. Identify petroleum hazard(s) discovered (Mark all that apply):
 Impacted Drinking Water Petroleum Vapors Free Product
 Other Explain: _____

2. Date hazard(s) discovered: _____

3. Location of hazard(s) discovered (Mark all that apply):
 Residence Commercial Building Sanitary Sewer
 Storm Sewer Surface Water Observation/monitoring well
 Other Explain: _____

4. Address(es) and phone number(s) of locations where hazard(s) discovered:

E. Hazard Management

Complete applicable sections (Section 1, 2, 3, and/or 4).

1. Petroleum Impacted Drinking Water:
 - a. Has a drinking water supply been impacted? Yes No
 If no, then proceed to Section 2.

 - b. Date impact reported to the Division: _____

 - c. Method of contact: Mail Electronic Mail Telephone
 Facsimile Other Explain: _____

 - d. Division personnel contacted: _____

 - e. Impact reported by: _____

 - f. Date the water supply laboratory results were received by the owner/operator or their consultant: _____

 - g. If a drinking water supply has been impacted, then has either:
 1. A temporary water supply been provided? Yes No
 If yes, then what date was the temporary supply provided? _____
 If yes, then what type of temporary supply was provided?
 Bottled Water Filtration System Other Explain: _____

2. Or, a permanent water supply been provided? Yes No

If yes, then what date was the permanent supply provided? _____

If yes, then what type of permanent supply was provided?

Connect to Public Water Supply Install New Water Well

Permanent Filtration System

Other Explain: _____

h. Provide a detailed cost analysis in Appendix 6 of costs incurred to address impacted water supplies. The cost analysis shall be completed in accordance with the current approved reimbursable rates and shall list all costs incurred to date.

2. Petroleum Vapor Impact:

a. Has a petroleum vapor impact been identified? Yes No

If no, then proceed to Section 3.

b. Date impact reported to the Division: _____

c. Method of contact: Mail Electronic Mail Telephone

Facsimile Other Explain: _____

d. Division personnel contacted: _____

e. Impact reported by: _____

f. Describe the temporary action taken to mitigate hazards posed by vapors:

g. Were explosive concentrations of vapors ever detected? Yes No

If yes, then describe where and when: _____

h. Has a permanent vapor abatement solution been implemented? Yes No

If yes, then describe the permanent vapor abatement solutions implemented:

- i. Provide a detailed cost analysis in Appendix 6 of costs incurred to abate vapor impacts. The cost analysis shall be completed in accordance with the current approved reimbursable rates and shall list all costs incurred to date.

3. Free Product:

- a. Has free product been identified? Yes No
If no, then proceed to Section 4.
- b. Date impact reported to the Division: _____
- c. Method of contact: Mail Electronic Mail Telephone
 Facsimile Other Explain: _____
- d. Division personnel contacted: _____
- e. Impact reported by: _____
- f. Provide the location(s) of identified free product: _____

- g. Provide an estimate (including calculations) of the quantity (in gallons) of free product that is present: _____

- h. Date interim free product removal activity was initiated: _____
- i. Describe the type of interim free product removal activity that was initiated:

- j. Date interim removal activity was terminated, if applicable: _____
- k. Describe the method and location of disposal for the recovered free product, liquids, soils, pads, booms, etc. (attach disposal manifests in Appendix 4):

- l. If applicable, describe the location(s) and/or thickness(es) of any free product that is still present twenty-four (24) hours after the termination of the interim free product removal activities: _____

- m. Provide the total volume of free product removed during the interim removal period:
_____ -gallons

- n. Provide the total volume of water removed by the interim removal activities:
_____ -gallons
 - o. Provide a detailed cost analysis for the free product removal activities in Appendix 6. The cost analysis shall be completed in accordance with the current approved reimbursable rates and shall list all costs incurred to date.
4. Other Petroleum Hazards
- a. Have other petroleum hazards been identified? Yes No
If no, then proceed to Part F, Preliminary Site Investigation.
 - b. Describe the hazard and impact identified: _____

 - c. Date impact reported to the Division: _____
 - d. Method of contact: Mail Electronic Mail Telephone
 Facsimile Other Explain: _____
 - e. Division personnel contacted: _____
 - f. Impact reported by: _____
 - g. Describe the type of hazard and any temporary and/or permanent abatement measures implemented: _____

 - h. Provide a detailed cost analysis for other hazard abatement activities in Appendix 6. The cost analysis shall be completed in accordance with the current approved reimbursable rates and shall list all costs incurred to date.

F. Preliminary Site Investigation

- 1. Describe the observations from the visual inspection of the petroleum release(s).
- 2. Provide a vicinity map of the area depicting the locations of all streets, buildings, subsurface structures, underground utilities, and surface water bodies within one-tenth (0.1) mile from the site. If the results of a site check are being provided in this report, then it is not necessary to provide a vicinity map in this section.
- 3. Provide a scaled site map depicting the location of the tank(s), product and vent line(s), dispensers, buildings, subsurface structures, underground and overhead utilities, soil borings, and monitoring wells. Indicate former tank systems with a dashed line. If the

results of a site check are being provided in this report, then it is not necessary to provide a site map in this section. Identify the release point, if known.

4. Water Use Determination

Provide the following information to determine the water usage in the area.

a. Documentation from the Water Use Survey

Items i. - vii. below shall be included in an appendix.

- i. Provide a color topographic map depicting the location of all drinking water supplies (wells, springs and/or surface water bodies) within a one-half (0.5) mile radius of the UST site. The topographic map shall depict the site location and the one-quarter (0.25) and one-half (0.5) mile radii from the UST site. If drinking water supplies are adjacent to the UST site, then provide a vicinity map showing the locations. A legend shall be provided detailing the water supply user name, etc.
- ii. Provide the laboratory analytical sheets from all sampling events of drinking water supplies.
- iii. Provide the completed Water Use Survey Sheets for all properties within one-tenth (0.10) mile.
- iv. Provide the completed Water Use Survey Sheets for all water supplies (wells, springs, and/or surface water bodies) identified within a one-half (0.5) mile radius of the UST site.
- v. Provide the Water Well Survey computer printout from the Tennessee Division of Water Supply or local government agency for any wells identified within a one-half (0.5) mile radius from the UST site. All applicable wells shall be highlighted on the report.
- vi. Provide documentation stating the individual contacted from the Tennessee Division of Water Supply and/or the authorized local government agency, the date, and the conclusions derived regarding the location of the UST site to any designated Wellhead Protection Area (WPA). If a request is being made that the WPA is not applicable to the impacted aquifer, then provide justification including, but not limited to, the direction of ground water flow, the hydrogeologic characteristics (i.e. hydrologic boundaries), and the characteristics of the COC(s).
- vii. If any drinking water supply (wells, springs, and/or surface water bodies) is discovered within a one-half (0.5) mile radius of the UST site, then justification may be provided describing why the water supply should not be used in the groundwater use determination. The justification shall, at a minimum, contain information pertaining to the direction of ground water flow, the hydrogeologic characteristics (i.e. hydrologic boundaries), and the characteristics of the COC(s).

5. Water Analytical Results

If ground water, drinking water, and/or surface water including water supply samples were collected and analyzed, then provide a summary of the sampling activities. Include the following information.

- a. Provide water analytical results, from every sampling event (i.e. closure, site check, environmental assessment, etc.) in a table containing the following information, at a minimum:
 - i. Location of sampling points (including any water supplies and/or surface water bodies);
 - ii. Date sample was collected;
 - iii. Parameter (i.e., the appropriate COCs in accordance with Reference 1 and 2 in the EAG);
 - iv. COC analytical results (report non-detect values as less than detection limits including the actual detection limit);
 - v. Unit of measurement (Parts Per Million, PPM); and,
 - vi. The applicable Risk Based Cleanup Levels (RBCLs) (in accordance with Reference 3 in EAG).

- b. Provide all laboratory analysis and chain of custody sheets in an appendix segregated by sampling event and in chronological order. All laboratory analysis sheets shall include the following:
 - i. The TN UST Facility ID Number;
 - ii. Location of sampling points (including any water supplies and/or surface water bodies);
 - iii. Date sample was collected;
 - iv. Date sample analyzed;
 - v. Parameter analyzed (i.e. the appropriate COCs in accordance with Reference 1 and 2 in the EAG);
 - vi. COC analytical results (report non-detect values as less than detection limits including the actual detection limit);
 - vii. Dilution factor;
 - viii. Unit of measurement (PPM);
 - ix. Analytical method; and,
 - x. Original authorized laboratory signature.

Photostatic copies of the laboratory analysis sheets are not acceptable unless the originals have previously been submitted in another report.

6. Soil Source Investigation

If soil source determination was performed, then provide a summary of the soil source area investigation activities. Include the following information.

- a. Provide field screening and soil analytical results from every sampling event (e.g., closure, overexcavation, soil source identification, other initial abatement activities, site check, etc.) shall be included in a table. The table, at a minimum, shall contain the following information:
 - i. Boring number or location of additional sampling points;

- ii. Date sample was collected;
 - iii. Sample depth (feet);
 - iv. Parameter (i.e. the appropriate COCs in accordance with Reference 1 and 2 in the EAG);
 - v. Field screening results (PPM);
 - vi. COC analytical results (report non-detect values as less than detection limits including the actual detection limit);
 - vii. Unit of measurement (PPM); and,
 - viii. The applicable RBCLs (in accordance with Reference 3 in the EAG).
- b. Provide all laboratory analysis and chain of custody sheets in an appendix segregated by sampling event and in chronological order. All laboratory analysis sheets shall include the following:
- i. The TN UST Facility ID Number;
 - ii. Boring number or location of additional sampling points;
 - iii. Date sample was collected;
 - iv. Date sample analyzed;
 - v. Sample depth (feet);
 - vi. Parameter (i.e. the appropriate COCs in accordance with Reference 1 and 2 in the EAG);
 - vii. COC analytical results (report non-detect values as less than detection limits including the actual detection limits);
 - viii. Dilution Factor;
 - ix. Unit of measurement (PPM);
 - x. Analytical method; and,
 - xi. Original authorized laboratory signature.

Photostatic copies of the laboratory analysis sheets are not acceptable unless the originals have previously been submitted in another report.

- c. Provide a contoured, scaled plan view map for each COC depicting the horizontal extent of soil contamination. Contour each map to the Maximum Contaminant Level (MCL) or RBCL of the COC (as provided in Reference 3 in the EAG). The COC source width parallel to ground water flow direction shall be indicated by an arrow and the width shall be provided in feet. Include the location of tanks, product and vent lines, dispensers, buildings, subsurface structures, underground utilities, utility vaults, closure sampling locations (if applicable), soil borings, and monitoring wells. Indicate former tank systems with dashed lines. The horizontal extent of any free product shall be depicted. Plume maps are not required for any COC which does not have laboratory analytical results above the laboratory detection limit. No more than three COCs can be included on any one plan view map and a different color shall be used for each COC contoured. Identify the release point, if known.

7. Petroleum Vapor Readings

If vapors were present, provide the following table. Use PID/OVD¹ and CGI² readings. Sample location must correspond to a site map that designates the vapor monitoring locations

Date	Sample location	CGI reading (PPM)³	O₂ reading (PPM)	PID/OVD reading (PPM)

- 1 = Photo Ionization Detector/Organic Vapor Detector
- 2 = Combustible Gas Indicator
- 3 = Parts Per Million

8. Free Product Measurements

If free product was present, provide the following table. Sample location must correspond to a site map that designates the free product locations

Date	Sample Location	Thickness (feet)	Product removed? (Y/N)	Amount removed during visit (gallons)	Cumulative amount removed (gallons)
Total gallons removed this event:					
Total cumulative gallons removed to date:					

G. Management of Contaminated Materials

1. Provide information concerning the amount and management (storage, treatment, and/or disposal) of contaminated soil removed.
2. Provide information concerning the amount and management (storage, treatment, and/or disposal) of water removed.

H. Results of Site Check

If a site check was performed, then report the findings in this section in accordance with the Site Check Report Guidelines.

I. Appendices

Appendix 1 shall include all detailed boring logs in accordance with Technical Guidance Document (TGD) - 006 Standard Drilling Log.

Appendix 2 shall include all water usage documentation.

Appendix 3 shall include all laboratory analysis reports.

Appendix 4 shall include disposal manifests.

Appendix 5 shall include a copy of the site Health and Safety Plan written in accordance with the EAG.

Appendix 6 shall include the attached IRMHR Cost Sheet showing actual costs incurred to date and all estimated costs to perform additional assessment activities. Provide detailed estimated costs to perform additional assessment activities in the Assessment Activities Cost Estimate Sheet.

INITIAL RESPONSE & HAZARD MANAGEMENT REPORT COST SHEET

Event Category	Estimated Costs		Actual Costs	
	Activity Costs	Report Costs	Activity Costs	Report Costs
Site Check				
Initial Response				
Hazard Management				
Free Product Recovery				
Initial Site Characterization				
Exposure Assessment (TGD-017)				

ADDITIONAL ASSESSMENT ACTIVITIES COST ESTIMATE SHEET

Provide a brief description of the tasks included in this estimate. (Expand this sheet as necessary)

PROFESSIONAL SERVICES			
Personnel	Hours	Cost Per Hour	Subtotal
1.			
2.			
3.			
4.			
TOTAL:			

ASSOCIATED CHARGES		Subtotal
Event Category		
Drilling		
Excavation		
Trucking		
Surveying		
Analytical	Samples x \$/Sample	
Rentals (List Below)		
Disposal - Free Product		
Water		
Soil		
Capital Expenditures (List Below)		
Permitting		
Lodging and Per Diem	Days x \$	
Mileage	Miles x \$/mile	
Miscellaneous (List Below)		
TOTAL:		

H. Signature Page

A signature page, as shown below shall be attached to the IRHMR. The page shall be signed by the owner/operator (or authorized representative within the organization), and a registered professional geologist under the Tennessee Geologist Act (*T.C.A. §62-36-101 et seq.*) or a registered professional engineer under the Tennessee Architects, Engineers, Landscape Architects, and Interior Designers Law and Rules (*T.C.A. §62-2-101 et seq.*).

We, the undersigned, certify under penalty of law, including but not limited to penalties for perjury, that the information contained in this report form and on any attachments, is true, accurate and complete to the best of our knowledge, information, and belief. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for intentional violations.

Owner/Operator (Print name) Signature Date

Title (Print)

P.E. or P.G. (Print name) Signature Date

Tennessee Registration #

Note: Each of the above signatures shall be notarized separately with the following statement.

STATE OF _____ COUNTY OF _____

Sworn to and subscribed before me by _____ on this date

_____. My commission expires _____.

Notary Public (Print name) Signature Date

Stamp/Seal