Reset Form

QUARTERLY MONITORING REPORT (QMR) COVER SHEET AND REPORT FORMAT

State Form 56087 (6-16)
329 IAC 9-5
Indiana Department of Environmental Management
Office of Land Quality
Leaking Underground Storage Tank Section

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Attention: Leaking UST Section
Office of Land Quality
100 N. Senate Ave., MC 67-18, IGCN 1101
Indianapolis, IN 46204-2251

INSTRUCTIONS:

1. *This form is intended to assist with the organization of the Quarterly Monitoring Report (QMR). Additional information and guidance may be found in Rule 329 IAC 9-5-7(f)(1)(L) and Chapter 3 of the Remediation Program Guide.*
2. *The Cover Sheet should be attached as cover to your QMR submittal. The directions for the required QMR format are not required to be attached.*
3. *Depending on the nature of the project, some of the following sections or appendices may not be applicable. If this is the case, do not leave the section blank, omit, or reorder the appendices. Instead, enter "Not Applicable" or other explanation to indicate that the section does not apply or that information is not available, and why.*

A. FACILITY INFORMATION			
Quarter:	Year:	**FACILITY IDENTIFICATION NUMBER:**	
Facility Name:		LUST Incident Number(s):	
Street Address *(number and street)*:			
City:	County:		ZIP Code:

B. CURRENT SITE PRIORITY INFORMATION		
Was free product present this quarter?	☐ YES	☐ NO
Are vapors detected in any confined spaces (basements, sewers, etc.)?	☐ YES	☐ NO
Are utilities impacted or likely to be acting as conduits for contaminant migration?	☐ YES	☐ NO
Are any drinking water wells impacted?	☐ YES	☐ NO

C. SAMPLING INFORMATION	
Purpose for monitoring:	☐ Site Characterization ☐ Remediation Progress ☐ Plume Stability ☐ Closure
Product type:	☐ Gasoline ☐ Diesel ☐ Waste Oil ☐ Other
Number of monitoring wells sampled this quarter:	
Number of monitoring wells installed:	
Groundwater sampling method:	☐ Low Flow ☐ No Purge ☐ Purge
Groundwater analytical method(s):	☐ VOCs ☐ SVOCs ☐ PAHs ☐ Metals

D. SYSTEM INFORMATION		
Active remediation system:	System type:	Start-up date *(month, day, year)*:
Number of extraction wells:		
Number of air sparge wells:		
Percent of time system was operational this quarter:		%

E. TANK(S) OWNER INFORMATION		
Owner Name:		
Street Address *(number and street)*:		
City:	State:	ZIP Code:
Contact Person:	Telephone Number:	
E-mail Address:		

F. REPORT PREPARER INFORMATION		
Company Name:		
Street Address *(number and street)*:		
City:	State:	ZIP Code:
Contact Person:	Telephone Number:	
E-mail Address:		

G. CERTIFICATION OF REPORT COMPLETION

I, the undersigned environmental professional, hereby attest to the best of my knowledge and belief that the statements in this document and all attachments are true, accurate, and completed per 329 IAC 9-5-7(f)(1)(L). I certify that the attached report was submitted to IDEM Leaking Underground Storage Tank Section on the date listed below.

Name	Position	Company	Date *(month, day, year)*

Environmental Professional Credentials

Signature: _____ Date *(month, day, year)*: _____

Please note, per 329 IAC 9, this document must be signed by a Registered Professional Engineer, a Licensed Professional Geologist, a Certified Hazardous Materials Manager, or a Professional Soil Scientist. All must be specifically certified in the State of Indiana.

Additional Signatures (as appropriate or desired)

Signature: _____ Date *(month, day, year)*: _____

Printed name: _____

Signature: _____ Date *(month, day, year)*: _____

Printed name: _____

REQUIRED QMR REPORT FORMAT

Please attach the Quarterly Monitoring Report (QMR) Cover Sheet to your QMR submittal. The QMR should follow the outline and section headings one (1) through six (6) provided below.

EXECUTIVE SUMMARY

Provide a brief discussion and summary of the project.

1. SITE DESCRIPTION

Regional Location

Describe the regional location and provide figures.

1. *Township**,** range, and section on a 7.5-minutes series United States Geological Survey (USGS) topographic map as **Figure 1**.*
2. *An appropriately scaled regional map of the site as **Figure 2.***

Site Location

Describe the site location.

1. *Physical description of the site and discussion of present and potential future land use of the subject property (i.e. industrial, commercial, or residential).*
2. *Identify all adjacent properties in the four (4) principal compass directions and include historical (if known) uses.*
3. *A scaled plan of the subject site and adjacent properties should be provided as **Figure 3**. The figure should also include site buildings or former buildings, location of current and former USTs and excavation extents, groundwater monitoring wells, underground utilities, storm drains, spill areas, etc.*

2. FREE PRODUCT RECOVERY

*Provide a brief description of free product recovery activities for this quarter. Submit data in **Table 1.***

3. ACTIVE REMEDIATION SYSTEM INFORMATION

Discuss remediation system and function.

1. *Details on type of system. List wells used as part of the engineered system (soil vapor extraction, dual-phase extraction or air sparge). Provide details on pulsed operation.*
2. *Details on history of system (original start-up date, extensive down time, repairs other than standard maintenance, rebound check).*
3. *Percent of time system was operational this quarter. Explanation if system was off anytime during the quarter (e.g. maintenance, repair, rebound check).*
4. *Details on methods for air, water, and vacuum sampling.*

4. SAMPLING METHOD DESCRIPTION

Provide a general overview of the groundwater sampling event.

1. *Method used to measure depth to water in each well (also depth to free product if applicable) and describe the method used for well purging (e.g., dedicated well pump, bailer, pump) and include the volume purged.*
2. *How the groundwater samples were collected from each well and describe the sample container(s) into which they were transferred.*
3. *Identify any duplicate samples or any samples that will be submitted for matrix spike/matrix spike duplicate (MS/MSD) analysis. Note: MS/MSD samples are not required during corrective action monitoring activities (Remediation Closure Guide: Chapter 3, Table 3-A) unless otherwise directed by IDEM staff.*
4. *State whether samples for metals analysis were filtered or unfiltered. If filtered, state the reason why and the size (in microns) of the filter used.*
5. *Describe all decontamination procedures if non-dedicated sampling equipment was used. Describe how decontamination and purge water was managed.*
6. *Depth-to-groundwater measurements should be included in **Table 2**.*
7. *Groundwater sample location should be presented on **Figure 4**.*
8. *Field notes, stability parameter measurements, and field screening data should be presented in **Appendix E**.*

5. DATA DISCUSSION AND RESULTS

Groundwater Analytical Results

Provide a brief overview of the groundwater analytical results including the results of the quality control samples (e.g., MS/MSD, duplicates, trip, blanks).

1. *The groundwater analytical results should be compared against the appropriate screening levels and presented in **Table 3**.*
2. *Analytical results are also required to be presented on a site map as **Figure 4**.*
3. *Gauging data and groundwater flow direction should be presented in **Figure 5**.*
4. *Map(s) displaying the lateral extent of individual Chemicals of Concern (COCs) (i.e., Benzene, Naphthalenes, Trimethylbenzenes, or any other COCs driving investigation and cleanup) should be included as **Figures 6 a, b, c, etc.***
5. *Graphs or plots depicting trend data for individual COCs driving investigation and cleanup should be presented in **Appendix D**.*
6. *A hard copy of the laboratory certificates of analysis and chain of custody form(s) should be included as **Appendix E**.*
7. *Groundwater data summary tables should be included in **Appendix B**.*

Miscellaneous Sampling Data and Results

*Provide a general overview of any additional sampling activities that occurred at the site during the quarter. Examples include: surface water sampling, soil sampling, air monitoring, vapor sampling, etc. Discuss the method by which the samples were collected and all observations made during sampling activities. Analytical data should be included in **Table 4**. Data summary tables should be included in **Appendix C**.*

6. CONCLUSIONS

Provide a professional conclusion and recommendations regarding the quarterly monitoring activities conducted for the subject release(s). Identify any information or data gaps that exist. Any requests to change the approved corrective action plan, including system and sampling modifications must be submitted under separate cover for staff consideration.

TABLES

1. Free Product
2. Current Groundwater Gauging
3. Current Groundwater Data
4. Current Miscellaneous Data

Presentation formats attached.

FIGURES

1. Site Map 7.5 Topographic
2. Regional/Area Map
3. Site Map With Soil Boring Locations And Soil Summary Data
4. Site Map With Monitoring Well Locations And Current Quarterly Data
5. Site Map With Current Groundwater Flow Direction Identified
6. Site Map(s) With Groundwater Contaminant Extent(s) (COCs Driving Cleanup)

All maps must show graphic scale and indicate north.

APPENDICES

A. System Performance

Tables should include the system parameters as designed in the approved Corrective Action Plan. Each system type will have its own information to provide as listed below. Develop appropriate tables to present the needed information. The system performance data should be provided for the most recent eight (8) quarters, include a cumulative total as appropriate.

Tables

Soil Vapor Extraction

1. Air flow rate for entire system in cubic feet per minute (CFM)
2. Influent and effluent contaminant concentrations in vapor
3. VOC's removed in pounds, include cumulative total

Groundwater Extraction

1. Gallons of groundwater extracted, include cumulative total
2. Extraction wells drop tube depths
3. Influent and effluent contaminant concentrations in water

Dual-Phase Extraction

1. Gallons of groundwater extracted, include cumulative total
2. Air flow rate for entire system in CFM
3. Extraction wells drop tube depths
4. Vacuum in extraction wells and monitoring wells
5. Influent and effluent contaminant concentrations in water and vapor

Air Sparge

1. Air flow rate for entire system in CFM
2. Dissolved oxygen (DO) concentrations in monitoring wells

Mobile Vacuum Extraction

1. Gallons of groundwater extracted, include cumulative total
2. Hours operated

Figures and Plots

1. Concentration vs Time plots for influent soil vapor for the COCs driving the cleanup.
2. Concentration vs Time plots for influent groundwater for the COCs driving the cleanup.
3. Vacuum reading for each monitoring well illustrated on a site map.

B. Groundwater Data Summary Tables (most recent eight (8) quarters)

Table 1. Groundwater Gauging and Well Data Summary
Table 2. Groundwater Data Summary

C. Miscellaneous Data Summary Tables (most recent eight (8) quarters)

Format needed tables using templates provided as a guide.
Add summary tables as appropriate.

D. Trend Data

Provide trend data, graphs and/or plume stability modeling for the COCs driving the cleanup.
Identify messenger, sentinel and perimeter of compliance wells for plume stability modeling.
IDEM recommends using the current version of EPA's ProUCL software when conducting trend analyses.

E. Field And Lab Data

Provide field sampling sheets.
Provide field data sheets.
Provide lab analytical information. Include data sheets, chain-of-custody forms, MDDRs documentation.

TABLE FORMATS

Table 1. Free Product Recovery

Volumes in gallons

	MW-ID	MW-ID	MW-ID	MW-ID
Total volume to date				
Date (this quarter) *(month, day, year)*				
Date (this quarter) *(month, day, year)*				

Table 2. Current Groundwater Gauging

Gauging Date *(all units in feet)*

	Top of Casing Elevation	Depth to Ground Water	Groundwater Elevation	Free Product Thickness	Corrected Groundwater Elevation	Monitoring Well Depth	Monitoring Well Screen Interval
MW-ID							
MW-ID							

Table 3. Current Groundwater Data

Sample Date *(all results in µg/l)*

	COC	COC	COC	COC	COC
Residential Tap Water Screening Level					
Residential Vapor Intrusion Screening Level					
MW-ID					
MW-ID					
MW-ID					
MW-ID					

Table 4. Current Miscellaneous Data

Format tables using templates above.

Appendix B. Groundwater Summary Tables

Table 1. Groundwater Gauging and Well Data Summary

List gauging data for only the most recent eight (8) quarters in ascending order.
All units in feet.

	Date *(month, day, year)*	Top of Casing Elevation	Depth to Ground Water	Groundwater Elevation	Free Product Thickness	Corrected Groundwater Elevation	Monitoring Well Depth	Monitoring Well Screen Interval
MW-ID	Date							
	Date							
MW-ID	Date							

Table 2. Groundwater Data Summary

List past data for only the most recent eight (8) quarters in ascending order.
All units in µg/l.

	Date *(month, day, year)*	COC	COC	COC	COC	COC
Residential Tap Water Screening Level						
Residential Vapor Intrusion Screening Level						
MW-ID	8th quarter					
	7th quarter					
	6th quarter					
	5th quarter					
	4th quarter					
	3rd quarter					
	2nd quarter					
	Current qtr					
MW-ID	8th quarter					
	7th quarter					

Bold results that are greater than residential tap water screening levels.
Use separate tables for VOCs, SVOCs, PAHs, and Metals, as site requires.