Reset Form

REMEDIATION WORK PLAN COMPLETENESS CHECKLIST

State Form 53413 (R / 2-13)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY
VOLUNTARY REMEDIATION SECTION
100 N. Senate Avenue
Indianapolis, IN 46204-2251

*INSTRUCTIONS: This checklist shall be **completed and returned** for all Remediation Work Plan (RWP) submittals required under IC 13-25-5-7. When completed, please return this form and support documents to the address given in the box above.*

The RWP provides the basis for IDEM to evaluate the proposed remedy for each VRP site. All of the following information is required to evaluate the selected remedy's effectiveness and to demonstrate that it is the most effective remedy for the site. The remediation work plan must provide a complete description of the past operations, the site investigation and the selected remedy for the site.

Required Elements	Present	Location
Site Delineated *(Required for Approval)*	*If "No" Explain*	Page 2
2 Paper Copies and 1 Electronic Copy of RWP *(Large QA/QC data packets can be submitted as 1 electronic copy)*	REQUIRED	

I. INTRODUCTION

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Sources of contamination 1. Site name, address, and telephone	Y	Page 1
2. Current owner and contact information	Y	Page 1
3. Historical summary of site ownership	Y	Page 1
4. Type of facility, past and present operations	Y	Page 1
5. Site contact responsible for VRP process	Y	Page 1
6. Overview of initial discovery of contamination, spill history, & previous investigations conducted at the site	Y	Page 1
B. Supporting Documents 1. Discussion of relevant previous reports	Y	Page 3
2. Data and documentation regarding site	Y	Page 3
C. Remedial Action Objectives 1. Remediation and cleanup objectives for all affected source areas, media, contaminants, and exposure pathways	Y	Page 3
2. Work items planned for remediation	Y	Page 3

II. INVESTIGATION ACTIVITIES

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Summary of Information Used to Select Remedy 1. Baseline assessment and literature search a. Geologic and hydrogeologic summary	Y	Page 3
b. Physical and political geographic information	Y	Page 4
2. Extent of subsurface work, including: a. Copies of all boring logs and monitoring well construction logs	Y	Page 4
b. Boring and well location maps	Y	Page 4
c. Field screening results for soils and groundwater	Y	Page 4
d. Sample location map, cross sections, groundwater flow, and isoconcentrations maps	Y	Page 4

Report/Plan Element	Present (Y,N, or NA)	Location in Document
B. Summary of Site Investigation 1. Identification of all contaminants a. Chemical and physical properties	Y	Page 5
b. Contaminant toxicological data	Y	Page 5
c. Potential effects of residual contamination	Y	Page 5
2. Summary of site-specific Geology & Hydrogeology	Y	Page 5
3. Discussion of Sources of Contamination	Y	Page 5
4. Summary and Map of Extent of Contamination a. Impacted media, such as soil, soil vapor, sediment, groundwater, surface water, and air	Y	Page 5
b. Concentrations of contaminants with tables	Y	Page 5
c. Concentration trends	Y	Page 5
C. Summary of Risks Associated with Site 1. Human, ecological, and environmental risks for each contaminant & impacted media, including discussion of long and short-term risks, environmentally sensitive areas, and endangered species	Y	Page 6
2. Impact of current and future land-use issues, if applicable, including need for environmental deed restrictions and restrictive ordinances	Y	Page 6
D. Background Concentration Assessment 1. Summary of naturally occurring site contaminants	Y	Page 6
2. Background data in tabular format & background sampling location map	NA	
3. Statistical comparison of background concentrations to concentrations in potentially contaminated media	NA	
4. Reliability and applicability of background data	NA	
E. Additional Field Investigation Requirements 1. Additional investigations required to effectively complete the design or the installation of the selected remedial method	NA	
2. Reasons for additional investigation	NA	
3. Description of additional work to be completed	NA	

VAPOR INTRUSION

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Discussion of ground water results compared with the Tables in the IDEM Remediation Closure Guide	Y	Page 6
B. Description of further monitoring required until detected levels are below the screening levels in the Remediation Closure Guide	Y	Page 6

III. REMEDIATION PLAN

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Evaluation of Remedial Alternatives		
1. The remedial alternatives evaluated must be identified, and the rationale for their selection must be provided. In addition, the remediation work plan should describe parameters evaluated for each of the selected alternatives. The parameters should include, but not necessarily be limited to, the following:	Y	Page 7
a. Extent of remediation effort	Y	Page 7
b. Technical feasibility to address physical and chemical characteristics of media	NA	
c. Projected contamination removal & treatment rates	NA	
d. Protectiveness of human health	NA	
e. Cleanup criteria	NA	
f. Ability of each alternative to achieve cleanup criteria	NA	
g. Community acceptance	NA	
h. Anticipated volume of contaminated materials to be treated	NA	
i. Ease of technology application or implementation	NA	
j. Dimensions of major technologies & space limitations	NA	
k. Process parameters	NA	
l. Clean up time frames	NA	
m. Transportation distances	NA	
n. O&M Costs	NA	
o. Any other special considerations	NA	
2. Summarize conclusions for each of the technologies evaluated, and provide reasons each technology would or would not be appropriate	NA	
3. Need for treatability study or pilot test. Describe the treatability study or pilot test and the reasons it is required, and provide the following information:	NA	
a. Proposed study methodology	NA	
b. Clear statement of treatability study or waste characterization objectives	NA	
c. Proposed scale of study (e.g., bench, pilot, etc.)	NA	
d. Data requirements and evaluation	NA	
e. Pilot plan startup and O&M	NA	
f. Schedule for pilot study	NA	
g. Remedial technologies to be tested & equipment required	NA	
h. Treatability assessment and waste characterization	NA	
i. Proposed disposal arrangements for wastes caused during remediation, plus approvals & necessary documentation	NA	
j. Installation and startup procedures, including:	NA	
- Data requirements and analytical methods	NA	
- Pilot Plan O&M requirements	NA	
- Data analysis & interpretation of results to be used	NA	
- Full-scale technology application requirements and notation of limitations & optimum operating conditions	NA	

Report/Plan Element	Present (Y,N, or NA)	Location in Document
B. Selected Remediation Technology – If more than one remedial alternative will be used to address different on-site areas, the remediation work plan must describe how the remediation system, as a whole, will work. A flow diagram, conceptual sketch, or other approach should be used to illustrate the components of the remediation system. Major equipment, such as pumps, air strippers, and in-situ treatment equipment, must be indicated. The work plan should include a site map showing areas to be remediated and proposed locations of major equipment.	NA	
1. Identify which evaluated technology or combination of technologies will be implemented at the site, including the technical, economic and social acceptance rationales for the final selection.	NA	
2. Identify the need for risk assessment and provide:	NA	
a. Parameters to be addressed	NA	
b. Proposed risk assessment methodologies	NA	
c. Potential exposure pathways	NA	
d. Exposure assumptions	NA	
e. Environmental fate and transport data	NA	
f. Tabulated parameters and resulting cleanup levels	NA	
3. Provide a detailed description of the selected technology and system setup, including the following information:	NA	
a. Technical specifications of all equipment & processes	NA	
b. Proposed locations of all remediation equipment on a scaled site map, including piping runs and electrical wiring where applicable	NA	
c. State or federal permit requirements for the system	NA	
d. Waste disposal approvals needed to implement system	NA	
C. Monitoring and Sampling Plan	NA	
1. Sampling plan details, including:	NA	
a. Sampling and monitoring parameters	NA	
b. Sampling and monitoring frequency	NA	
c. Schedule for submitting results to IDEM for review and evaluation (quarterly progress reporting is minimum requirement)	NA	
Provide data management details, including a discussion of how the monitoring & confirmation sampling data will be documented & reported, & proposed progress reports formatting	NA	
D. Project Work Schedule	NA	
1. Projected installation and startup	NA	
2. Sampling and monitoring schedule	NA	
3. Contaminant removal & treatment rates, including remediation progress milestones & projected completion dates	NA	
4. O&M Plan, including:	NA	
a. Optimal operating conditions	NA	
b. Necessary O&M tasks, their frequency, replacement schedule & planned O&M replacement events	NA	
c. Proposed inspection schedule	NA	

Report/Plan Element	Present (Y,N, or NA)	Location in Document
d. Potential problems and their remedies	NA	
e. Contingency plan indicating how the applicant plans to respond in the event of a system failure, including the following information: - Description of alternate operation procedures to prevent undue hazards if the system fails	NA	
- Notification procedure for system shutdown or failure	NA	
- System modification procedures	NA	
5.0 RISK ASSESSMENT *(if applicable, appendix to the Remediation Work Plan)*	NA	
A. List of parameters to be addressed by Risk Assessment	NA	
B. Description of proposed Risk Assessment methodologies (e.g., types of modeling)	NA	
C. Identification of potential pathways of exposure	NA	
D. Identification of exposure assumptions	NA	
E. Environmental Fate and Transport data development procedures	NA	
F. Summary table listing parameters and calculated cleanup levels	NA	
G. List all Lines of Evidence to demonstrate that exposure pathways are incomplete and will remain incomplete (required for closure with levels above RCG screening levels)	Y	Page 8

IV. REFERENCES

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. References used to prepare remediation work plan should be cited or listed, including author, full title, publisher, company, date, etc.	Y	Appendix K

V. APPENDICIES

Report/Plan Element	Present	Location in Document
A. A QAPP is required for the remediation work plan. The QAPP should contain all elements discussed on page 29 of the Remediation Closure Guide (RCG). If a QAPP was submitted as part of the investigation report, it need not be re-submitted.	Y	Appendix G
B. A site Health and Safety Plan is required.	Y	Appendix H

VI. ENVIRONMENTAL RESTRICTIVE COVENANT OR ORDINANCE

Report/Plan Element	Present (Y,N, or NA)	Location in Document
Text of the restrictions or ordinance	Y	Appendix I
Table of Last Known Concentrations of COC's and the closure standard	NA	
Site Plan showing covered areas with detailed boundary description. IDEM data policy for reference: http://www.in.gov/idem/files/olq_spatial_data_collection_standards.pdf	Y	Appendix I

OTHER VRP REQUIREMENTS

COMMUNITY RELATIONS

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Mailing list of nearby properties; interested community groups; and local, state, and national officials (e.g., mayor, local newspaper, county health department, representatives, and senators).	Y	Page 9
B. Name and address of local library that will be the repository for the Remediation Work Plan during the public notice period.	Y	Page 9
C. Copy of the RWP notification letter	Y	Appendix J

PUBLIC MEETINGS

Report/Plan Element	Present (Y,N, or NA)	Location in Document
A. Discussion of plans to hold public information meetings about the proposed remediation process.	NA	
B. Format of meetings.	NA	
C. Proposed public meeting schedule and notification procedures.	NA	
D. Discussion of plans to prepare and distribute information bulletins regarding the remediation system.	NA	
E. Description of the format and types of information included in the bulletins.	NA	
F. Description of the types of media that will be used to inform the general public (newspaper, radio, etc.).	NA	
G. Description of the type of information that will be released to the media.	NA	

COMPLETION OF REMEDIAL ACTION

COMPLETION REPORT

Report/Plan Element	Present	Location in Document
A. Statement that a Completion Report detailing the remediation system and confirmation sampling will be submitted upon completion of the remediation to the cleanup criteria.	Y	Page 10