

FEASIBILITY STUDY SCOPE OF WORK - Example

The FS process consists of the development and screening of remedial alternatives or cleanup options and a detailed analysis of a limited number of the most promising options to establish the basis for a remedy selection decision. A range of viable alternatives are developed that meet the remedial response objectives developed during scoping and refined as the feasibility study progresses. All documents must be submitted to DEQ in hard copy and modifiable electronic formats. In addition, a schedule for submittal of all required work must be included for DEQ approval.

A. Initial Alternatives Screening Table

As the first step in scoping the FS, an initial alternatives screening table is prepared and submitted to DEQ, which includes the following information:

1. Identification and description of all potential remedy alternatives that may be used at the Facility;
2. Description of the Federal Remediation Technology Roundtable (FRTR) factors of availability, implementability, effectiveness, reliability/maintainability, and cost evaluation criteria used in the initial screening of remedy alternatives (see <http://www.frtr.gov/>); and
3. Initial evaluation of remedy alternatives according to the FRTR factors to eliminate those remedies that are clearly infeasible or inappropriate for use at the Facility.

After submittal of this table, a scoping meeting is held to discuss the table. After the scoping meeting, a technical memorandum is prepared and submitted to DEQ providing discussion and rationale for the decisions reached during the scoping meeting with DEQ. Include a proposed schedule for submitting the FS Work Plan and FS for DEQ's review and approval. The initial alternatives screening table and technical memorandum are then included as an appendix in the FS Work Plan and FS Report and this table and memorandum serve as the basis for preparing the second table referenced in B(4) below.

B. Components of the FS Work Plan

The FS Work Plan includes the following information:

1. An identification of the areas and volume of contaminated media exceeding site-specific cleanup levels (SSCLs) (developed in the risk assessment or risk analysis for the Facility);
2. An identification of the preliminary remedial action objectives (PRAOs) specifying contaminants and media of concern, potential exposure pathways, and SSCLs
3. An identification and description of any interim actions that have occurred at the Facility;
4. An alternatives screening table containing the alternatives remaining after the initial screening conducted in (A) above, which includes:
 - a. Identification of the remaining potential remedy alternatives;

- b. Further evaluation of the retained technologies according to the following criteria: effectiveness, implementability, and cost. The rationale for eliminating any remedies from further detailed evaluation must be documented as a footnote to the table or in a comment column;
 - c. Remedial alternatives retained for further evaluation in the FS report; and
 - d. Identification of all retained potential remedial alternatives that may require treatability studies.
- 5. An identification and evaluation of potentially suitable technologies, including alternative treatment technologies and resource recovery technologies, based upon the table in B(4). The no action alternative is also included;
- 6. An identification of the FS tasks, including procedures for evaluation of alternative remedies;
- 7. An identification of any proposed treatability studies (if it is more appropriate, these may sometimes be proposed as part of remedial design). If treatability studies are necessary, a treatability study work plan is prepared and includes:
 - a. A project description (including a schedule) and background describing the Facility and the type, concentration, and distribution of hazardous or deleterious substances;
 - b. A remedial technology description describing the technology(ies) to be tested either in a bench scale or pilot scale test and the test(s) objective(s);
 - c. If a bench scale test is to be conducted, a description of the specialized equipment and materials required for the test and sequential description of the experimental procedures to be performed to include identification of the variable conditions to be tested; and
 - d. If a pilot scale test is to be conducted, a description of pilot test installation and start-up equipment and methods and a description of pilot test operation and maintenance procedure to include listing the various operating conditions which are to be tested.
- 8. A sampling and analysis plan (including a quality assurance project plan [QAPP]), if sampling will be performed during the FS;
- 9. An evaluation of each alternative remedy in accordance with the criteria found in § 75-10-721(1) and (2), MCA, which requires:
 - a. Attainment of a degree of cleanup of the hazardous or deleterious substance and control of a threatened release or further release of that substance that assures protection of public health, safety, and welfare and of the environment;
 - b. Compliance with and cleanup consistent with the preliminary applicable and relevant state or federal environmental requirements, criteria, or limitations (ERCLs) identified by DEQ (including a discussion of the estimated time to meet them);
 - c. With consideration of present and reasonably anticipated future uses of the Facility, an evaluation of how the alternative:
 - i. Demonstrates acceptable mitigation of exposure to risks to the public health, safety, and welfare and the environment;
 - ii. Provides long-term and short-term effectiveness and reliability;
 - iii. Is technically practicable and implementable;
 - iv. Uses treatment technologies or resource recovery technologies, if practicable, giving due consideration to engineering controls; and
 - v. Is cost effective.

10. A provision and schedule for submittal of a final FS Work Plan that incorporates all DEQ comments on the draft FS Work Plan and a provision for submittal of both a draft FS and a final FS that incorporates all DEQ comments on the draft FS. Depending on public comments received on the Proposed Plan, revisions to the FS may be necessary, resulting in a third version of the FS. Include a schedule for submitting the final FS Work Plan to DEQ for DEQ's review and proposal.

C. Components of the FS Report

The FS Report includes the following information:

1. An introduction describing the purpose and organization of the report and general background information, including an identification and description of any interim actions that have occurred and how they meet the criteria of § 75-10-721(1) and (2), MCA;
2. A presentation and discussion of results of treatability studies including an assessment of the success of the test(s) and an evaluation of the results as they pertain to the selection of the remedy;
3. A presentation and evaluation of the results of any investigations conducted subsequent to the Remedial Investigation (RI), including treatability study investigations pursuant to the final FS Work Plan approved by DEQ. This may also include a tabular summary of RI data relied on in the FS;
4. A presentation and evaluation of the quality assurance/quality control results according to the QAPP, including all appropriate data validation information;
5. All validated field and laboratory analytical results for samples collected subsequent to the RI, including those collected during any treatability studies and during the FS, all of which may be separately presented in an appendix;
6. A summary of any deviations from the final FS Work Plan approved by DEQ;
7. A presentation and discussion of results of the detailed alternatives analysis including estimated volumes of media impacted above SSCLs and detailed cost estimates;
8. Figures including, but not limited to: figures identifying the groundwater potentiometric surface and extent of contamination above SSCLs; figures identifying the estimated areal extent of contamination in surface and subsurface soils above applicable SSCLs; figures, if separate from those outlined above, used to calculate soil or groundwater volumes for treatment/removal; and other relevant Facility figures/maps demonstrating property ownership and current uses, utilities, etc.;
9. Appendices containing DEQ's analyses of preliminary ERCLs as well as both alternative screening tables from (A) and (B)(3) above;
10. A discussion of estimated time to meet SSCLs and ERCLs (may be based on trend analysis or modeling); and
11. Other pertinent information obtained during the FS.