

## **CORRECTIVE MEASURES STUDY SCOPE OF WORK**

### **PURPOSE**

The purpose of this Corrective Measures Study (CMS) is to develop and evaluate the corrective action alternative(s) and to recommend the corrective measure(s) be taken at the facility. The Respondent shall furnish the personnel, materials, and services necessary to prepare the Corrective Measures Study, except as otherwise specified.

### **SCOPE**

The Corrective Measures Study consists of four tasks:

#### **TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVE(S)**

- A. Description of Current Situation
- B. Establishment of Media Clean Up Objectives
- C. Identification of the Corrective Measures Alternative or Alternatives

#### **TASK II: EVALUATION OF THE CORRECTIVE MEASURES ALTERNATIVE(S)**

- A. Long-term Effectiveness
- B. Reduction in the Toxicity, Mobility or Volume of Wastes
- C. Short-term Effectiveness
- D. Implementability
- E. Community Acceptance
- F. State Acceptance
- G. Cost

#### **TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE(S)**

#### **TASK IV: REPORTS**

- A. Corrective Measures Report
- B. Progress Reports

## **TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVE(S)**

Based on the results of the RCRA Facility Investigation, Respondent shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment, and/or other remediation of the contamination based on the media clean up objective established for the corrective action.

### A. Description of Current Situation

Respondent shall submit a summary of, and if necessary an update to, the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. In addition to summarizing the environmental conditions, this section should describe any interim actions implemented or ongoing.

### B. Establishment of Media Clean Up Objectives

Respondent, in conjunction with the EPA, shall establish site specific media clean up objectives for the corrective action. These objectives shall be based on EPA guidance, public health and environmental criteria, information gathered during the RCRA Facility Investigation, and the requirements of any applicable Federal statutes. Media clean up objectives include the following components:

1. clean up levels which are the site-specific concentrations in a given media that a final remedy must achieve for the remedy to be considered complete;
2. points of compliance which represents where the media clean up levels are to be achieved; and
3. remediation time frame which is the site-specific schedule for a remedy. It includes both the time frame to construct the remedy and estimate of the time frame to achieve the clean up levels at the point of compliance.

At a minimum, all corrective actions concerning groundwater releases from RCRA regulated units must be consistent with, and as stringent as, those required under 40 C.F.R. 264.100.

### C. Identification of the Corrective Measures Alternative(s)

Respondent shall identify the corrective measure alternative or alternatives that are applicable to the facility and that will achieve the media clean up objectives. Technologies can be combined to form the overall corrective action alternative(s). The

alternative or alternatives developed should represent a workable number of option(s). These alternatives should be screened against RCRA's threshold criteria which are:

1. protection of human health and the environment;
2. attainment of media clean up objectives; and
3. controlling the sources.

Alternatives which do not meet these threshold criteria do not warrant further consideration.

## **TASK II: EVALUATION OF THE CORRECTIVE MEASURES ALTERNATIVE(S)**

Respondent shall describe each corrective measures alternative that passes through the initial screening in Task I and evaluate each corrective measures alternative and its components relative to the following evaluation/balancing criteria: long-term effectiveness; implementability; short-term effectiveness; toxicity, mobility and volume reduction; community acceptance; state acceptance; and cost.

### A. Long-term Effectiveness

Respondent shall demonstrate the expected effectiveness, reliability and risk of failure of the alternative(s). In this demonstration, Respondent should discuss the following:

1. The effectiveness of the alternative under analogous site conditions;
2. The potential impact resulting from a failure of the alternative, including failures from uncontrollable changes at the site (e.g. heavy rain storms, induced groundwater flow changes from off-site pumping wells); and
3. Estimates of the projected useful life of the overall alternative and of its component technologies.

### B. Reduction in the Toxicity, Mobility or Volume of Wastes

As a general goal, EPA prefers remedies which employ techniques, such as treatment technologies, that are capable of eliminating or substantially reducing the inherent potential for the wastes in the contaminated media to cause future environmental releases or other risks to human health and the environment. There may be some situations where achieving substantial reductions in toxicity, mobility or volume may not be practical or even desirable. Examples include large, municipal-type landfills, or wastes such as

unexploded munitions which would be extremely dangerous to handle, and for which short-term risks of treatment outweigh potential long-term benefits.

To the extent practical, Respondent shall estimate how much the corrective measures alternatives will reduce the waste, toxicity, volume and/or mobility. Respondent should complete this assessment through a comparison of initial site conditions to expected post-corrective measure conditions.

C. Short-term Effectiveness

The short-term effectiveness may be particularly relevant when Respondent will be conducting remedial activities in densely populated areas, or where waste characteristics are such that risks to workers or to the environment are high and special protective measures are needed. The Respondent shall consider the following types of factors: fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation and redisposal, or containment of waste material.

D. Implementability

Respondent shall describe the implementability of each corrective measure, including the relative ease of installation (constructability) and the time required to achieve a given level of response. Respondent should include the following type of information:

1. The administrative activities needed to implement the corrective measure alternative (e.g. permits, off-site approvals) and the length of time these activities will take;
2. The constructability, time for implementation, and time for beneficial results;
3. The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and
4. The availability of prospective technologies for each corrective measure alternative.

E. Community Acceptance

Respondent is responsible for including community involvement as an ongoing part of the corrective action. This section shall include a discussion of any concerns raised by the community during the investigation. It also shall discuss any aspects associated with an alternative, in which there is a potential for community objections.

F. State Acceptance

The Respondent shall include a discussion of how the specific corrective measures activities will be conducted in compliance with all applicable State regulations (i.e. permit requirements).

G. Cost Estimate

Respondent shall develop an estimate of the cost of each corrective measures alternative. Cost estimates shall include costs for engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, training, operation and maintenance etc.

**TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE(S)**

Respondent shall justify and recommend a corrective measures alternative based on an evaluation of the balancing criteria. Such a recommendation shall include a description and supporting rationale for the proposed remedy, including how it will achieve the media clean up objectives and the proposed remedy's relationship to the decision factors discussed above. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. The Respondent shall highlight tradeoffs among the balancing factors for the alternatives under consideration. EPA will select the corrective measures alternative to be implemented, based on the results of Tasks I and II.

**TASK IV: REPORTS**

A. Corrective Measures Report

Respondent shall prepare a draft and final Corrective Measures Study Report presenting the results of Tasks I through III and recommending a corrective measures alternative.

B. Progress Reports

Respondent will continue to submit bimonthly progress reports. The bimonthly progress reports shall, at a minimum contain the following information:

1. Description and estimate of the percentage of the CMS completed;
2. Summaries of all findings;
3. Summaries of all changes made in the CMS during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups, or state government during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during the reporting period;
8. Projected work for the next reporting period; and
9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.