

SCOPE OF WORK FOR A CORRECTIVE MEASURES STUDY  
AT  
COOK COMPOSITES AND POLYMERS  
SAUKVILLE, WISCONSIN  
ATTACHMENT 5

PURPOSE

The purpose of the Corrective Measures Study (CMS) is to develop and evaluate the corrective action alternatives and to recommend the corrective measures to be taken at Cook Composites and Polymers, Saukville, Wisconsin. Cook Composites and Polymers (CCP) shall furnish the personnel, materials, and services necessary to prepare the corrective measures study, except as otherwise specified.

SCOPE

Cook Composites and Polymer shall prepare a Corrective Measures Study Work Plan which consists of four tasks:

- Task I: Identification and Development of the Corrective Measure Alternatives
- A. Description of Current Situation
  - B. Establishment of Corrective Action Objectives
  - C. Screening of Corrective Measure Technologies
  - D. Identification of the Corrective Measure Alternatives
- Task II: Necessary Laboratory and Bench-Scale Studies
- Task III: Evaluation of the Corrective Measures Alternatives
- A. Technical/Environmental/Human Health/Institutional
  - B. Cost Estimates
- Task IV: Justification and Recommendation of the Corrective Measures
- A. Technical
  - B. Environmental
  - C. Human Health
- Task V: Reports
- A. Progress
  - B. Draft
  - C. Final

TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURE ALTERNATIVES

CCP shall identify, screen, and develop the alternatives for removal, containment, treatment, and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

CCP shall submit 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 Additional Work Report. CCP shall provide an update to the information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have been implemented at the facility. CCP shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

CCP, in conjunction with the U.S. EPA and WDNR, shall establish site specific objectives for the corrective action needed to protect human health and the environment. These objectives shall be based on public health and environmental criteria, information gathered during the Additional Work Investigation, U.S. EPA and WDNR guidance, and the requirements of any applicable Federal statutes. All corrective actions concerning groundwater releases must be consistent with, and as stringent as, those required under 40 CFR 264.100 or ch. NR 140, Wis. Admin. Code.

C. Screening of Corrective Measure Technologies

CCP shall review the results of the Additional Work Report and other pertinent information and identify and assess any technologies which are applicable at the facility. CCP shall screen the proposed corrective measure technologies and eliminate those that may not prove feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on elimination those technologies which have several limitations for a given set of waste and site specific condition. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

CCP shall develop the corrective measure alternatives based on the corrective action objectives and analysis of Corrective Measure Technologies, and as supplemented following the preparation of the RFI Report. CCP shall rely on sound engineering practices to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective measure alternatives. The alternatives developed should represent a workable number of options that appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. CCP shall document the reasons for excluding technologies identified in Task II, as supplemented in the development of the alternatives.

TASK II: LABORATORY AND BENCH-SCALE STUDIES

CCP shall conduct laboratory and/or bench-scale studies to determine the applicability of corrective measure technologies to facility conditions. CCP shall analyze the technologies based on literature review, vendor contacts, and past experience to determine the testing requirements.

CCP shall develop a testing plan identifying the types and goals of the studies, the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, CCP shall evaluate the testing results to assess the technologies with respect to the site-specific questions identified in the test plan.

CCP shall prepare a report summarizing the testing program and its results, both positive and negative.

TASK III: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

CCP shall describe each corrective measure alternative that passes through the Initial Screening in Task I and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health, and institutional concerns. CCP shall also develop cost estimates for each corrective measure.

A. Technical/Environmental/Human Health/Institutional

CCP shall provide a description of each corrective measure alternative which includes, but is not limited to the following: preliminary process flow sheets; preliminary sizing and types of construction for buildings and structures; and rough quantities of utilities required. CCP shall evaluate each alternative in the four following areas:

1. Technical

CCP shall evaluate each corrective measure alternative based on performance, reliability, implementability, and safety.

a. CCP shall evaluate each corrective measure alternative based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristic which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. CCP shall provide information on the reliability of each corrective measure including its operation and maintenance requirements and demonstrated reliability:

- i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and
  - ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. CCP shall evaluate whether the technologies have been used effectively under analogous conditions; whether the combinations of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.
- c. CCP 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:
- i) Constructability is determined by conditions both internal and external to the facility conditions, and includes such items as location of underground utilities, depth to water table, homogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). CCP shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and
  - ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure; and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.
- d. CCP shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as threats to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

## 2. Environmental

CCP shall assess each alternative to determine its short and long-term beneficial and adverse effects on the environment. Each

alternative will be evaluated for its impact on habitat types and plant and animal receptors located in, adjacent to, or affected by the facility. Receptor impacts should include those occurring at the individual level (e.g., mortality, growth and reproductive impairments) and those occurring at higher levels of biological organization (i.e., at population, community, and ecosystem levels). The assessment should include proposed measures for mitigating adverse impacts.

### 3. Human Health

CCP shall assess each alternative in terms of the extent to which it mitigates short and long-term potential exposure to any residual contamination and how it protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants onsite, potential exposure routes, and the potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to U.S. EPA, in consultation with WDNR.

### 4. Institutional

CCP shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulation, guidance, advisories, ordinances, or community relation on the design, operation, and timing of each alternative.

## B. Cost Estimate

CCP shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.
  - a. Direct capital costs include:
    - i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation); and equipment required to install the corrective measure;
    - ii) Equipment costs: Cost of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

- iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and
- b. Indirect capital costs include:
  - i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
  - ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
  - iii) Startup and shakedown costs: Costs incurred during corrective measure startup; and
  - iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.
- 2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. CCP consider the following operation and maintenance cost components:
  - a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;
  - b. Maintenance materials and labor costs: Cost for labor, parts, and other resources required for routine maintenance of facilities and equipment;
  - c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;
  - d. Purchased services: Sampling cost, laboratory fees, and professional fees for which the need can be predicted;
  - e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;
  - f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;



- g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;
- h. Maintenance reserve and contingency funds: Annual payments into escrow to cover: (1) costs of anticipated replacement or rebuilding of equipment; and (2) any large unanticipated operation and maintenance costs; and
- i. Other costs: Items that do not fit any of the above categories.

TASK IV: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURES

CCP shall justify and recommend corrective measure alternatives using technical, human health, and environmental criteria. The recommendation shall include summary tables which allow the alternatives to be easily understood. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The U.S. EPA, in consultation with WDNR, will select the corrective measure alternatives to be implemented based on the results of Tasks III and IV. At a minimum, the following criteria will be used to justify the final corrective measures.

A. Technical

1. Performance - corrective measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be preferred;
2. Reliability - corrective measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be preferred;
3. Implementability - corrective measures which can be constructed and operated to reduce levels of contamination that attain or exceed applicable standards in the shortest period of time will be preferred; and
4. Safety - corrective measures which pose the least threat to the safety of nearby residents and environment as well as workers during implementation will be preferred.

B. Human Health

The corrective measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time will be preferred.

C. Environmental

The corrective measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be preferred.

TASK V: REPORTS

CCP shall prepare a Corrective Measures Study (CMS) Report presenting the results of Tasks I through IV and recommending corrective measure alternatives. Three (3) copies of the draft report shall be provided by Respondent.

A. Progress

CCP shall at a minimum provide U.S. EPA and WDNR with signed, monthly progress reports containing:

1. A 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.

B. Draft

The Report shall, at a minimum, include:

1. A description of the facility, including a site topographic map (which includes depiction of plant communities and fish and wildlife habitat types) and preliminary layouts;
2. A summary of the corrective measures:
  - a. Description of the corrective measures and rationale for selection;
  - b. Performance expectations;
  - c. Preliminary design criteria and rationale;

- d. General operation and maintenance requirements; and
  - e. Long-term monitoring requirements to assess attainment of goals relative to groundwater, surface waters and ecological integrity (ecological monitoring, where applicable, could include assessment of wetland vegetation, soils and hydrology; biotoxicity of surface waters, soils and/or sediments; analysis of biological tissues; and assessment of stream fish and benthic macroinvertebrate communities);
3. A summary of the RCRA Facility Investigation and impact on the selected corrective measures;
  4. A summary of any necessary laboratory and bench-scale studies;
  5. Design and Implementation Precaution:
    - a. Special technical problems;
    - b. Additional engineering data required;
    - c. Permits and regulatory requirements;
    - d. Access, easements, right-of-way;
    - e. Health and safety requirements; and
    - f. Community relations activities; and
  6. Cost Estimates and Schedules:
    - a. Capital cost estimate;
    - b. Operation and maintenance cost estimate; and
    - c. Project schedule (design, construction, operation).

B. Final

CCP shall finalize the Corrective Measures Study Report, incorporating comments received from the public, U.S. EPA, and WDNR on the Draft Final Corrective Measures Study Report.

Facility Submission Summary

A summary of the information requirements contained in the Corrective Measure Study Scope of Work is presented below:

Facility Submission	Due Date
CMS Workplan	30 days after submittal of the Final Additional Work Report
Draft CMS Report (Tasks I, II, III, and IV)	90 days after submittal of the Final Additional Work Report
Final CMS Report (Tasks I, II, III, and IV)	45 days after Public, U.S. EPA, and WDNR Comments on the Draft Final CMS
Progress Reports on Tasks I Through IV	Monthly

ATTACHMENT 6

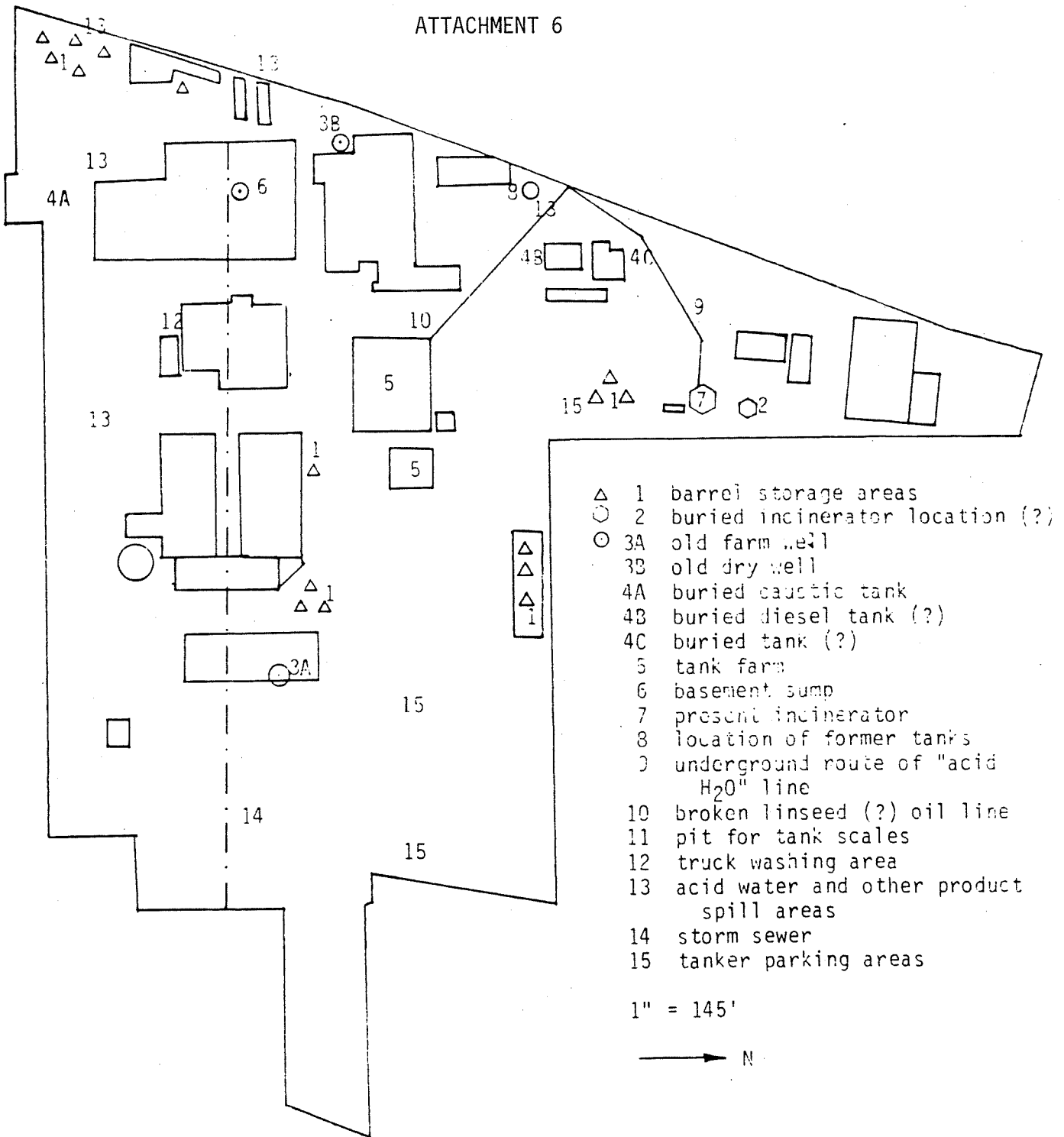


FIGURE 1 - Potential Sources of Groundwater Contamination