Guidance for Developing a Work Plan for the PCB Remediation of Maritime Vessels

Below is an EPA outline providing ***general guidance*** *as to the scope and content of a complete work plan for remediating maritime vessels. This general guidance includes a basic outline of the elements typically required in a work plan for remediation of a vessel, with a focus on PCB remediation. EPA does not require a specific outline or organization for a logical and complete plan. However, EPA has found, through experience, that a dialogue between EPA and the consultants developing the work plan often helps the process go more smoothly and efficiently.*

In EPA's experience, maritime vessel remediation work plans are vessel specific. Prior acceptable plans have been hundreds of pages long, identified the specific materials and items requiring sampling and/or removal, and included plans for the collection of hundreds of post-remediation verification samples. Accordingly, EPA expects that an acceptable work plan will contain the elements described in the outline below. Note, however, that the development and implementation of a work plan consistent with this outline and EPA's subsequent review and comments on such work plan will not establish that it is technically adequate or create a presumption that the vessel will be compliant with the PCB regulations and other applicable environmental laws upon implementation of the work plan. Implementation of the work plan will in no way relieve the vessel owner or its contractors of their responsibility to comply with applicable federal, state, and local laws, regulations, and permits.

Those persons responsible for the remediation of PCBs and other environmental contaminants onboard a maritime vessel will remain strictly liable for compliance with all applicable laws and permits. Therefore, the final measure of success is <u>not</u> the development of a complete and acceptable workplan: it is compliance with the substantive and procedural requirements and standards of the PCB regulations and other applicable environmental laws and regulations.

I. Introduction and Project Overview

II. Statement of goals and objectives - covering the following:

A. Complete remediation of the vessel to achieve compliance with 40 CFR Part 761, with specific reference to the use and disposal provisions set forth at:

1. 40 CFR 761.20(a) and (c) prohibiting unauthorized uses and distribution of PCBs (This applies to everything on the vessel containing PCBs at a concentration of 50 ppm or greater.);

2. PCB cleanup, disposal, and remediation standards at 40 CFR 761.61, 761.62, and 761.79. (PCBs present on the vessel at detectable concentrations of 2 ppm or greater as a result of spills, leaks or other releases of PCBs having a concentration of 50 ppm or greater must be remediated or decontaminated to meet these standards);

3. 40 CFR 761.30(u) authorizing use of decontaminated materials;
4. 40 CFR Part 761, Subpart D requirements regarding storage and disposal of PCBs.

B. Description of anticipated/potential uses of the vessel including identification of any portions of the vessel might be demolished during remediation or renovation.

III. Description of remediation facility or shipyard and initial preparations

A. Facility Description
B. Facility Location
C. Map or diagram of facility, including location of any HM/HW storage areas
D. Preparation for Towing, including proposed USCG tow plans and copies of tow contracts
E. Dockside Security including limitations on access to vessel
F. Preliminary Vessel Survey and Preparation for Work
G. Onboard Hazard Assessment
H. Copies of contracts with facility and proof of payment(s) to facility, when available

IV. Characterization of PCB levels on the entire vessel

A. Identification of materials, equipment, and items to be sampled –Description of all locations where the materials, equipment, and items to be sampled and/or removed are present on the vessel.

1. At a minimum this list must include: electrical cable, rubber and felt gaskets including ventilation system gaskets and water-tight door and hatch gaskets, thermal and acoustical insulation material including fiberglass, felt, foam, and cork, adhesives and tapes, paints/coatings, caulking, hydraulic fluids, and rubber applications including isolation mounts, rubber foundation mounts, pipe hangers, shock mounts, cable hangers, vibration mounts; any liquid-filled electrical equipment remaining onboard, such as transformers, capacitors, and fluorescent light ballasts, and any other labeled PCB-containing equipment. (Note that any mercury switches and fluorescent lamps which contain mercury are a regulated hazardous waste under RCRA. Also asbestos is regulated under the Clean Air Act National Emission Standards for Hazardous Air Pollutants (NESHAP).)

2. List of materials, equipment, and items that will be assumed to contain regulated PCBs and removed without the need for sampling.

3. List of materials, equipment, and items that will be sampled to determine whether they contain regulated PCBs which must be removed from the vessel.

B. Sampling, Analysis and QA/QC methods for PCBs:

1. EPA requires statistically valid sampling plans.

2. For the materials on the vessel, the EPA Extraction (Soxhlet) Method 3540C and Analysis Method 8082 must be used. If a lab proposes to use a different but equivalent method, it must follow 40 CFR Part 761, subpart Q to validate the alternative method.

3. If any sample cannot be analyzed by using a particular solvent, the extraction must be attempted with an alternative solvent as allowed by Method 3540C, which allows a choice of extraction solvents.

4. Wipe sampling is generally not applicable to most of the equipment and material on this vessel. Paint chips and samples of other materials such as wire insulation, felt, rubber, etc. must be reduced to fine particles before analysis in accordance with the standard methods.

5. Approved methods must be used for other hazardous materials as applicable.

C. Characterization data reporting/interpretation plan:

1. Present all data and compare it to the required cleanup levels (see 40 CFR 761.61, 761.62, and 761.79). All materials, equipment, and items containing PCBs exceeding regulated levels must be identified for removal or remediation.

- The cleanup levels shall be specified on a case-by-case basis. In general, target clean up levels will be as specified at 40 CFR 761.61(a)(4). "Excluded PCB Products" (<50 ppm) as defined at 40 CFR 761.3 need not be removed. Some of the paint on the vessel may be within the scope of this definition.

V. PCB removal and remediation procedures

A. Identify all equipment and materials that will be removed by location and category throughout the vessel.

B. Describe removal/remediation methods for each category of equipment and material.

- Remediation of PCB-contaminated equipment and materials must be accomplished without using high temperature methods such as torches, burning, or thermal methods of any form because the PCBs will be volatilized and released into the environment when heated. Consequently, only cold, mechanical methods, with appropriate means to capture dust, may be employed.

C. Describe PCB waste-handling and disposal methodology and responsibilities for each type of PCB-containing equipment and material.

VI. Statistically valid post-remediation sampling plan sufficient to confirm removal of all regulated PCBs with 95% confidence, including statistical sampling to identify any remaining equipment or material (including painted surfaces) that exceeds the regulatory limit. (This sampling should be done by a party independent from the company performing the removal/remediation.)

VII. Data report for post-remediation sampling, including quantities and concentrations of PCB-contaminated equipme nt and materials remaining on the vessel and identification of any that do not meet cleanup standards.

VIII. Contingent followup procedures to remove/remediate any PCBs that exceed the cleanup standards.

IX. Project Management-- Identify PCB Remediation contractor with experience, facility and financial resources to perform the necessary work. Identify disposal facilities and transporters.

A. Management and Organization
B. Subcontractor Management and approval of their work plans
C. Performance Schedule
D. Timelines and Milestones
E. Description of Work Force
   - Marine Experience
   - Resumes of Key Personnel
   - Key Personnel Certifications
F. Subcontractor Qualifications and Certification for sampling, lab analysis, transportation, and management of wastes

G. Other Information
   - Ship Diagrams, Deck Plans
   - Financial Assurance/Insurance Certificates/Proof of Payment

X. Regulatory Compliance

A. Written Environmental Compliance Operating Procedures
B. Monitoring Environmental Compliance
C. Environmental Compliance Record Keeping
D. Procedures for Mitigating Releases
E. Employee Training and Certification
F. Hazardous Material/Waste Company Policy
G. Hazardous Material/Waste Control Procedures, including storage, marking and labeling of HW/HM
H. Tank Cleaning and Ship Stability

XI. Health and Safety Program

A. Environmental Safety and Health Policy
B. Shipyard Health and Safety Plan
   1. Emergency/disaster procedures
   2. Training about PCBs, possible risk from exposure
   3. Proper selection, use and care of PPE
   4. Respiratory Protection Program
   5. Signage and Barricades
   6. Safety Equipment
   7. Installation of Portable Decontamination/Showers/Clean Rooms
   8. Monitoring Employee Health and Safety

XII. Additional elements of work plan

A. Maintaining watertight integrity after removal of contaminated gaskets (recommended)