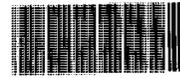




DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149



SDMS DocID **46258**

REPLY TO  
ATTENTION OF

April 13, 1993

Superfund Records Center

SITE: New Bedford

BREAK: 04.01

OTHER: 46258

Programs/Project Management Directorate

Ms. Gayle Garman  
EPA  
Waste Management Division  
J.F. Kennedy Building  
Boston, MA 02203

Dear Ms. Garman:

This letter concerns the New Bedford Harbor Superfund Site and provides a response to questions received during the comment period on the proposed plan for the Estuary, Lower Harbor/Bay portion of the site that related to the leaching of PCBs from Confined Disposal Facilities (CDFs).

The Corps of Engineers evaluated the leaching of contaminants from CDFs during the Engineering Feasibility Study (EFS) conducted at the Waterways Experiment Station. Report 5 of the EFS describes the study conducted to evaluate the quality of leachate and Report 11 presents estimates of contamination released to the harbor from CDFs for the remedial alternatives that appear in that report.

Following the approach described in Report 11, the estimates of leachate loss have been recomputed by Mr. Averett at the Waterways Experiment Station (see Attachment A) to reflect the CDFs proposed for use in the remediation of the Estuary, Lower Harbor/Bay portion of the site (CDFs 1, 1B, and 7). Estimates of the volume of leachate flowing through the bottom of the dredged material in the CDFs were made using the Hydrologic Evaluation of Landfill Performance (HELP) Model. Important parameters and conditions used in the HELP Model analysis are as follows:

- \* CDF surface areas at the dredged material surface (see Attachment B which provides the physical characteristics of CDFs 1, 1A and 7);
- \* depth of dredged material (see Attachment B);
- \* dredged material hydraulic conductivity ( $6.5E-07$  cm/sec - see Attachment C which provides information on leaching tests and consolidation testing performed on New Bedford Harbor sediment from which this value was determined);
- \* contaminant concentration in leachate - 266 ug/l (value determined from batch leaching tests, Report 5 of the Engineering Feasibility Study).

Attachment A includes the results of the HELP model evaluation for both capped and uncapped CDFs. The sensitivity of the model to two major assumptions used in the analysis (hydraulic conductivity and initial water content) were also evaluated.

The results show that leaching is reduced considerably after the first two years. The higher values the first two years result from drainage of the water initially placed in the site with the dredged material. Once this water is released, the leaching rate is relatively steady and responds to changes in climatic conditions. Capping each site with a relatively impermeable material and synthetic membrane reduces the leaching after the second year to a minimal value.

CDFs are not likely to be capped for 2-3 years after they are filled with dredged material. This delayed installation of the cap is due to the need to allow for the dredged material to consolidate somewhat and for the caps to be designed based on the specific conditions encountered at each CDF site. Estimates for the mass of PCB released to the harbor in leachate from CDFs are shown in the following table. The leachate volume for an uncapped CDF is used in computing the estimate for the first 3 years of the facility's life. The values represent annual totals.

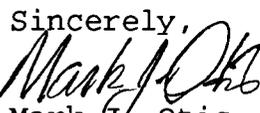
Year	CDF 1	CDF 1B	CDF 7
1	13.8 kg	4.7 kg	4.5 kg
2	7.2	2.3	1.9
3	2.4	0.9	1.0
4	0.001	0.0003	0.0004
5	0.0009	0.0004	0.0005

6-20 (Less than 1 kg in total is released from each facility from year 6 - 20.)

Note: Several studies have determined that approximately 1 kg of PCB is transported out of the upper estuary on each tidal cycle (2 kg/day or 730 kg/year) under existing conditions.

The sequence for building, filling, and capping the CDFs will be determined during the projects design phase. At this point it is anticipated that the CDFs will be constructed sequentially and will be at different stages relative to leachate losses throughout their life.

Please review this information and contact me at 647-8895 if there are any questions.

Sincerely,  
  
Mark J. Otis  
Project Manager