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FOSTER WHEELER ENVIRONMENTAL CORPORATION

November 1, 1996
A96-427
No Response Required

Mr. David Dickerson
Remedial Project Manager
US EPA - Region I (HBO)
JFK Federal Building
Boston, MA 02203

Subject: ARCS I - EPA CONTRACT NO. 68-W9-0034
WORK ASSIGNMENT NO. 12-1L43
NEW BEDFORD HARBOR - POST FS SUPPORT
REVISION OF FS COST ESTIMATES

Dear Dave:

Please find attached a set of tables which include the revised feasibility cost estimates for the eleven (11) remedial alternatives for the New Bedford Harbor Superfund site. The cost estimates include actual costs realized during the Hot Spot sediments remediation activities, revised CDF construction cost estimates based on new locations and sizes, air monitoring, and a escalation factor for 1996 costs.

Should you have any questions concerning the cost tables provided please contact Jim Brinkman at (617) 457-8238 or myself at (617) 457-8277.

Sincerely,

Alan S. Fowler
ARCS I Program Manager

Attachment

cc: D. Dickerson (USEPA)
L. Horzempa
J. Brinkman

File: PM 1.1
NBH 12, 9.8.1

Table 1 - Summary of Revised Feasibility Study Cost Estimate (Revised)
 New Bedford Harbor Superfund Site
 New Bedford, Massachusetts

| ALTERNATIVE | DESCRIPTION | FS COST - 1989 | | | REVISED COST |
|-------------|--|----------------|---------------|---------------|---------------|
| | | EST | LHB | TOTAL | |
| 1 | Minimal No-Action | \$4,092,000 | \$3,386,000 | \$7,478,000 | \$9,513,581 |
| 2 | Capping | \$46,121,000 | \$59,792,000 | \$105,913,000 | \$147,573,195 |
| 3 | Removal and On-Site Disposal | \$55,723,000 | \$47,675,000 | \$103,398,000 | \$145,859,660 |
| 3d | Removal, Dewatering & On-site Disposal | \$86,240,000 | \$77,811,000 | \$164,051,000 | \$184,499,268 |
| 4 | Removal, Solidification & On-Site Disposal | \$170,740,000 | \$137,092,000 | \$307,832,000 | \$305,706,531 |
| 5 | Removal, Solvent Extraction & On-Site Disposal | \$292,193,000 | \$237,391,000 | \$529,584,000 | \$533,435,056 |
| 6 | Removal, Incineration & On-Site Disposal | \$346,740,000 | \$280,196,000 | \$626,936,000 | \$575,903,952 |
| 7 | Removal and Capping | -- | -- | \$36,164,000 | \$81,660,564 |
| 8 | Removal and On-Site Disposal | -- | -- | \$33,274,000 | \$85,417,556 |
| 9 | Removal, Solvent Extraction & On-Site Disposal | -- | -- | \$92,999,000 | \$176,076,319 |
| 9a | Removal, Incineration & On-Site Disposal | -- | -- | \$80,634,000 | \$171,083,162 |
| 10 | Preferred Alternative | -- | -- | -- | \$115,545,872 |
| 11 | Old Preferred Alternative | -- | -- | \$40,158,000 | \$117,751,570 |

| ALTERNATIVE | DESCRIPTION | CAPPING | | DREDGING | | WATER TREATMENT | | SEDIMENT TREATMENT | | MATERIAL HANDLING | | CDF CONSTRUCTION | | AIR MONITORING | |
|-------------|--|--------------|--------------|-------------|--------------|-----------------|--------------|--------------------|---------------|-------------------|-------------|------------------|--------------|----------------|-------------|
| | | FS | Revised | FS | Revised | FS | Revised | FS | Revised | FS | Revised | FS | Revised | FS | Revised |
| 1 | Minimal No-Action | | | | | | | | | | | | | | |
| 2 | Capping | \$50,413,000 | \$56,529,648 | \$1,185,000 | \$6,250,688 | \$4,535,000 | \$13,007,483 | \$0 | \$0 | \$104,000 | \$0 | \$4,833,000 | \$9,148,969 | \$0 | \$582,800 |
| 3 | Removal and On-Site Disposal | \$0 | \$0 | \$8,944,000 | \$34,190,903 | \$14,031,000 | \$34,001,246 | \$0 | \$0 | \$1,082,000 | \$0 | \$42,719,000 | \$42,184,424 | \$0 | \$3,117,600 |
| 3d | Removal, Dewatering & On-Site Disposal | \$0 | \$0 | \$8,944,000 | \$32,977,497 | \$64,319,000 | \$69,425,570 | \$0 | \$0 | \$9,017,000 | \$4,179,663 | \$26,430,000 | \$32,678,872 | \$0 | \$2,871,200 |
| 4 | Removal, Solidification & On-Site Disposal | \$0 | \$0 | \$8,944,000 | \$34,190,903 | \$64,319,000 | \$71,824,100 | \$92,593,000 | \$90,709,550 | \$10,305,000 | \$5,634,291 | \$35,307,000 | \$42,184,424 | \$0 | \$3,117,600 |
| 5 | Removal, Solvent Extraction & On-Site Disposal | \$0 | \$0 | \$8,944,000 | \$37,782,171 | \$64,319,000 | \$75,264,615 | \$283,711,000 | \$317,671,520 | \$2,445,000 | \$2,712,522 | \$12,377,000 | \$17,338,698 | \$0 | \$2,699,200 |
| 6 | Removal, Incineration & On-Site Disposal | \$0 | \$0 | \$8,944,000 | \$37,782,171 | \$64,319,000 | \$75,264,615 | \$353,518,000 | \$354,370,589 | \$2,445,000 | \$2,712,522 | \$12,377,000 | \$17,338,698 | \$0 | \$2,699,200 |
| 7 | Removal and Capping | \$14,200,000 | \$21,539,537 | \$1,082,000 | \$4,782,279 | \$2,050,000 | \$12,767,374 | \$0 | \$0 | \$0 | \$0 | \$2,771,000 | \$9,782,620 | \$0 | \$594,400 |
| 8 | Removal and On-Site Disposal | \$0 | \$0 | \$3,292,000 | \$17,103,954 | \$4,781,000 | \$22,611,736 | \$0 | \$0 | \$0 | \$0 | \$10,448,000 | \$12,695,648 | \$0 | \$1,199,200 |
| 9 | Removal, Solvent Extraction & On-Site Disposal | \$0 | \$0 | \$3,292,000 | \$17,103,954 | \$7,090,000 | \$35,137,837 | \$42,762,000 | \$50,458,688 | \$312,000 | \$415,164 | \$6,815,000 | \$12,695,648 | \$0 | \$1,199,200 |
| 9a | Removal, Incineration & On-Site Disposal | \$0 | \$0 | \$3,292,000 | \$17,103,954 | \$7,090,000 | \$35,137,837 | \$34,124,000 | \$46,966,848 | \$312,000 | \$415,164 | \$6,815,000 | \$12,695,648 | \$0 | \$1,199,200 |
| 10 | Preferred Alternative | \$0 | \$0 | NA | \$22,320,348 | NA | \$27,173,051 | NA | \$0 | NA | \$0 | NA | \$27,121,318 | NA | \$2,148,800 |
| 11 | Old Preferred Alternative | \$0 | \$0 | NA | \$24,138,051 | NA | \$28,312,570 | NA | \$0 | NA | \$0 | NA | \$26,198,186 | NA | \$2,085,500 |

Table 1
 COST ESTIMATE: ALTERNATIVE - 1 (Revised)
 MINIMAL NO ACTION
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|--|-------------|
| I. DIRECT COSTS | |
| A. Fencing | \$330,400 |
| TOTAL DIRECT COST (TDC) | \$330,400 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$16,520 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$33,040 |
| C. Engineering (@ 10% of TDC) | \$33,040 |
| D. Services During Construction (@ 10% of TDC) | \$33,040 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$49,560 |
| TOTAL INDIRECT COST (TIC) | \$165,200 |
| SUBTOTAL COSTS | \$495,600 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$99,120 |
| TOTAL CAPITAL COST | \$594,720 |
| MONITORING PROGRAM (present worth @ 7% for 30 years) | \$8,695,122 |
| O&M COST | |
| Fence Maintenance | \$16,520 |
| Site Inspections | \$755 |
| Institutional Controls | \$755 |
| TOTAL O&M COST (present worth @ 7% for 30 years) | \$223,739 |
| TOTAL COST - ALTERNATIVE -1 | \$9,513,581 |

Table 2
 COST ESTIMATE: ALTERNATIVE - 2 (Revised)
 CAPPING - > 10 ppm
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|----------------------|
| I. DIRECT COSTS | |
| A. Hydraulic Control Structure | \$1,150,500 |
| B. Geotextile Placement | \$12,666,347 |
| C. Sand Placement | \$40,690,167 |
| D. Stone Placement | \$698,674 |
| E. Surveying & Monitoring | \$1,323,960 |
| F. Ship Channel Dredging | \$6,250,688 |
| G. Dewatering/Water Treatment | \$13,007,483 |
| H. Material Hauling | \$0 |
| I. CDF Construction | \$9,148,969 |
| J. Air Monitoring | \$592,800 |
| TOTAL DIRECT COST (TDC) | \$85,529,588 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$4,276,479 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$8,552,959 |
| C. Engineering (@ 10% of TDC) | \$8,552,959 |
| D. Services During Construction (@ 10% of TDC) | \$8,552,959 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$12,829,438 |
| TOTAL INDIRECT COST (TIC) | \$42,764,794 |
| SUBTOTAL COSTS | \$128,294,382 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$25,658,876 |
| TOTAL CAPITAL COST | \$153,953,258 |
| PRESENT WORTH - 1996 (@ 7% for 2 years for dredging, 6 years for cap) | \$128,023,272 |
| O&M COST (Cap & CDFs) (Present Worth @ 7% for 30 years upon completion) | \$10,854,801 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 2 | \$147,573,195 |

| cap | dredging |
|---------------|--------------|
| \$1,150,500 | |
| \$12,666,347 | |
| \$40,690,167 | |
| \$698,674 | |
| \$1,323,960 | |
| \$0 | \$6,250,688 |
| \$0 | \$13,007,483 |
| \$0 | \$0 |
| \$0 | \$9,148,969 |
| \$0 | \$592,800 |
| \$56,529,648 | \$28,999,940 |
| \$2,826,482 | \$1,449,997 |
| \$5,652,965 | \$2,899,994 |
| \$5,652,965 | \$2,899,994 |
| \$5,652,965 | \$2,899,994 |
| \$8,479,447 | \$4,349,991 |
| \$28,264,824 | \$14,499,970 |
| \$84,794,472 | \$43,499,910 |
| \$16,958,894 | \$8,699,982 |
| \$101,753,366 | \$52,199,892 |

Table 3
 COST ESTIMATE: ALTERNATIVE - 3/ 3d (Revised)
 DREDGE/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST | |
|---|----------------------|----------------------|
| | ALT-3 | ALT-3d |
| I. DIRECT COSTS | | |
| A. Dredging | \$34,190,903 | \$32,977,497 |
| B. Dewatering/Water Treatment | \$34,001,246 | \$69,425,570 |
| C. Material Handling | \$0 | \$4,179,663 |
| D. CDF Construction | \$42,184,424 | \$32,678,872 |
| E. Air Monitoring | \$3,117,600 | \$2,871,200 |
| TOTAL DIRECT COST (TDC) | \$113,494,173 | \$142,132,802 |
| II. INDIRECT COSTS | | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$5,674,709 | \$7,106,640 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$11,349,417 | \$14,213,280 |
| C. Engineering (@ 10% of TDC) | \$11,349,417 | \$14,213,280 |
| D. Services During Construction (@ 10% of TDC) | \$11,349,417 | \$14,213,280 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$17,024,126 | \$21,319,920 |
| TOTAL INDIRECT COST (TIC) | \$56,747,086 | \$71,066,401 |
| SUBTOTAL COSTS | \$170,241,259 | \$213,199,203 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$34,048,252 | \$42,639,841 |
| TOTAL CAPITAL COST | \$204,289,511 | \$255,839,043 |
| PRESENT WORTH - 1996 (@ 7% for 12 years for 3 & 11 years for 3d) | \$135,217,525 | \$174,405,476 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$1,947,013 | \$1,398,670 |
| MONITORING PROGRAMS (Present Worth @ 7% for 30 years) | \$8,695,122 | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 3/ 3d | \$145,859,660 | \$184,499,268 |

Table 4
 COST ESTIMATE: ALTERNATIVE - 4 (Revised)
 DREDGE/SOLIDIFY/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|--|-------------------|
| I. DIRECT COSTS | |
| A. Dredging | \$34,190,903 |
| B. Dewater/Water Treatment | \$71,824,100 |
| C. Sediment Treatment | \$90,709,550 |
| D. Material Hauling | \$5,634,291 |
| E. CDF Construction | \$42,184,424 |
| F. Air Monitoring | \$3,117,600 |
| TOTAL DIRECT COST (TDC) | \$247,660,868 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$12,383,043 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$24,766,087 |
| C. Engineering (@ 10% of TDC) | \$24,766,087 |
| D. Services During Construction (@ 10% of TDC) | \$24,766,087 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$37,149,130 |
| TOTAL INDIRECT COST (TIC) | \$123,830,434 |
| SUBTOTAL COSTS | \$371,491,302 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$74,298,260 |
| TOTAL CAPITAL COST | \$445,789,563 |
| PRESENT WORTH - 1996 (@ 7% for 12 years) | \$295,064,397 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$1,947,013 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 4 | \$305,706,531 |

Table 5
 COST ESTIMATE: ALTERNATIVE - 5 (Revised)
 DREDGE/SOLVENT EXTRACTION/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|----------------------|
| I. DIRECT COSTS | |
| A. Dredging | \$37,762,171 |
| B. Dewater/Water Treatment | \$75,264,615 |
| C. Sediment Treatment | \$317,671,520 |
| D. Material Hauling | \$2,712,522 |
| E. CDF Construction | \$17,338,698 |
| F. Air Monitoring | \$2,699,200 |
| TOTAL DIRECT COST (TDC) | \$453,448,725 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$22,672,436 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$45,344,873 |
| C. Engineering (@ 10% of TDC) | \$45,344,873 |
| D. Services During Construction (@ 10% of TDC) | \$45,344,873 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$68,017,309 |
| TOTAL INDIRECT COST (TIC) | \$226,724,363 |
| SUBTOTAL COSTS | \$680,173,088 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$136,034,618 |
| TOTAL CAPITAL COST | \$816,207,706 |
| PRESENT WORTH COST - 1996 (@ 7% for 13 years) | \$524,739,934 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$480,786 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 5 | \$533,435,056 |

Table 6
 COST ESTIMATE: ALTERNATIVE - 6 (Revised)
 DREDGE/INCINERATE/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|----------------------|
| I. DIRECT COSTS | |
| A. Dredging | \$37,762,171 |
| B. Dewater/Water Treatment | \$75,264,615 |
| C. Sediment Treatment | \$354,370,589 |
| D. Material Hauling | \$2,712,522 |
| E. CDF Construction | \$17,338,698 |
| F. Air Monitoring | \$2,699,200 |
| TOTAL DIRECT COST (TDC) | \$490,147,794 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$24,507,390 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$49,014,779 |
| C. Engineering (@ 10% of TDC) | \$49,014,779 |
| D. Services During Construction (@ 10% of TDC) | \$49,014,779 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$73,522,169 |
| TOTAL INDIRECT COST (TIC) | \$245,073,897 |
| SUBTOTAL COSTS | \$735,221,691 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$147,044,338 |
| TOTAL CAPITAL COST | \$882,266,030 |
| PRESENT WORTH COST - 1996 (@ 7% for 13 years) | \$567,208,830 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$480,786 |
| MONITORING PROGRAM (present worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 6 | \$575,903,952 |

Table 7
 COST ESTIMATE: ALTERNATIVE - 7 (Revised)
 DREDGE/CAP ESTUARY
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|---------------------|
| I. DIRECT COSTS | |
| A. Dredging > 500 ppm | \$4,782,279 |
| B. Capping 50 ppm < x < 500 ppm | \$21,539,537 |
| C. Water Treatment | \$12,767,374 |
| D. CDF Construction | \$9,782,620 |
| E. Air Monitoring | \$594,400 |
| TOTAL DIRECT COST (TDC) | \$49,466,210 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$2,473,310 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$4,946,621 |
| C. Engineering (@ 10% of TDC) | \$4,946,621 |
| D. Services During Construction (@ 10% of TDC) | \$4,946,621 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$7,419,931 |
| TOTAL INDIRECT COST (TIC) | \$24,733,105 |
| SUBTOTAL COSTS | \$74,199,315 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$14,839,863 |
| TOTAL CAPITAL COST | \$89,039,178 |
| PRESENT WORTH - 1996 (@ 7% for 6 years) | \$70,734,207 |
| O&M COST (Cap and CDFs) (Present Worth @ 7% for 30 years upon completion) | \$2,231,235 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 7 | \$81,660,564 |

Table 8
 COST ESTIMATE: ALTERNATIVE - 8 (Revised)
 DREDGE /DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|---------------------|
| I. DIRECT COSTS | |
| A. Dredging (>50 ppm) | \$17,103,954 |
| B. Water Treatment | \$22,611,736 |
| C. CDF Construction | \$12,695,648 |
| D. Air Monitoring | \$1,199,200 |
| TOTAL DIRECT COST (TDC) | \$53,610,538 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$2,680,527 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$5,361,054 |
| C. Engineering (@ 10% of TDC) | \$5,361,054 |
| D. Services During Construction (@ 10% of TDC) | \$5,361,054 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$8,041,581 |
| TOTAL INDIRECT COST (TIC) | \$26,805,269 |
| SUBTOTAL COSTS | \$80,415,807 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$16,083,161 |
| TOTAL CAPITAL COST | \$96,498,968 |
| PRESENT WORTH - 1996 (@ 7% for 6 years) | \$76,660,389 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$62,045 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 8 | \$85,417,556 |

Table 9
 COST ESTIMATE: ALTERNATIVE - 9/9A (Revised)
 DREDGE/INCINERATE or SOLVENT EXTRACT/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST | |
|--|-------------------|-------------------|
| | (Incineration) | (Solvent Extr.) |
| I. DIRECT COSTS | | |
| A. Dredging | \$17,103,954 | \$17,103,954 |
| B. Dewater/Water Treatment | \$35,137,837 | \$35,137,837 |
| C. Sediment Treatment | \$50,458,688 | \$46,966,848 |
| D. Material Hauling | \$415,164 | \$415,164 |
| E. CDF Construction | \$12,695,648 | \$12,695,648 |
| F. Air Monitoring | \$1,199,200 | \$1,199,200 |
| TOTAL DIRECT COST (TDC) | \$117,010,491 | \$113,518,651 |
| II. INDIRECT COSTS | | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$5,850,525 | \$5,675,933 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$11,701,049 | \$11,351,865 |
| C. Engineering (@ 10% of TDC) | \$11,701,049 | \$11,351,865 |
| D. Services During Construction (@ 10% of TDC) | \$11,701,049 | \$11,351,865 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$17,551,574 | \$17,027,798 |
| TOTAL INDIRECT COST (TIC) | \$58,505,246 | \$56,759,326 |
| SUBTOTAL COSTS | \$175,515,737 | \$170,277,977 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$35,103,147 | \$34,055,595 |
| TOTAL CAPITAL COST | \$210,618,884 | \$204,333,572 |
| PRESENT WORTH - 1996 (@ 7% for 6 years) | \$167,319,152 | \$162,325,995 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$62,045 | \$62,045 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 9/9A | \$176,076,319 | \$171,083,162 |

Table 10
 COST ESTIMATE: ALTERNATIVE - 10 (Revised)
 DREDGE/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|--|-------------------|
| I. DIRECT COSTS | |
| A. Dredging | \$22,320,348 |
| B. Dewater/Water Treatment | \$27,123,051 |
| C. CDF Construction | \$27,121,318 |
| D. Air Monitoring | \$2,148,800 |
| TOTAL DIRECT COST (TDC) | \$78,713,517 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection | \$3,935,676 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$7,871,352 |
| C. Engineering (@ 10% of TDC) | \$7,871,352 |
| D. Services During Construction (@ 10% of TDC) | \$7,871,352 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$11,807,028 |
| TOTAL INDIRECT COST (TIC) | \$39,356,759 |
| SUBTOTAL COSTS | \$118,070,276 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$23,614,055 |
| TOTAL CAPITAL COST | \$141,684,331 |
| PRESENT WORTH - 1996 (@ 7% for 8 years) | \$105,754,956 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$1,095,795 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 10 | \$115,545,872 |

Table 11
 COST ESTIMATE: ALTERNATIVE - 11 (Revised)
 DREDGE/DISPOSE
 NEW BEDFORD HARBOR

| ACTIVITY | COST |
|---|----------------------|
| I. DIRECT COSTS | |
| A. Dredging | \$24,138,051 |
| B. Dewater/Water Treatment | \$28,312,570 |
| C. CDF Construction | \$26,198,186 |
| D. Air Monitoring | \$2,085,600 |
| TOTAL DIRECT COST (TDC) | \$80,734,407 |
| II. INDIRECT COSTS | |
| A. Health & Safety (@ 5% of TDC) Level D Protection [Activities: B,D] | \$4,036,720 |
| B. Legal, Administration, Permitting (@ 10% of TDC) | \$8,073,441 |
| C. Engineering (@ 10% of TDC) | \$8,073,441 |
| D. Services During Construction (@ 10% of TDC) | \$8,073,441 |
| E. Turnkey Contractor Fee (@ 15% of TDC) | \$12,110,161 |
| TOTAL INDIRECT COST (TIC) | \$40,367,203 |
| SUBTOTAL COSTS | \$121,101,610 |
| CONTINGENCY (@ 20% of TDC + TIC) | \$24,220,322 |
| TOTAL CAPITAL COST | \$145,321,933 |
| PRESENT WORTH - 1996 (@ 7% for 8 years) | \$108,470,107 |
| O&M COST (CDFs) (Present Worth @ 7% for 30 years upon completion) | \$586,341 |
| MONITORING PROGRAM (Present Worth @ 7% for 30 years) | \$8,695,122 |
| TOTAL COST - ALTERNATIVE - 11 | \$117,751,570 |