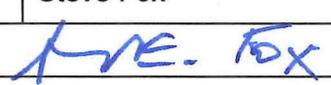


| | | |
|--|---------------------|---|
| Client, Project and Location | Project Note | Delivery Order/Task Order TO 0007 |
| USACE New Bedford Resident Office | | Project No. 35-BG07-07 |
| New Bedford Harbor Superfund Site | | |
| New Bedford, Massachusetts USACE Contract Number DACW33-03-D-0006 | Note No.: | |

| | | |
|--|--|-------------|
| Confirmation of: | Date Held | |
| <input checked="" type="checkbox"/> Project note-P1 | Location | |
| <input type="checkbox"/> Client Meeting-P4 | Date Issued: | 2/6/13 |
| <input type="checkbox"/> Other | Recorded By: | Carl Wilson |
| Subject: | Issued By: | Steve Fox |
| Air Sample Results for the Lower Harbor CAD Cell Construction – Phase I |  | |

| Item | Remarks | Action Required By |
|----------|--|--------------------|
| 1 | PURPOSE | |
| | The purpose of the Project Note is to provide a summary of actions taken and data collected pursuant to the <i>Final Plan for the Sampling of Ambient Air PCB Concentrations During Lower Harbor CAD Cell (LHCC) Construction (LHCC Air Plan), New Bedford Harbor Superfund Site, New Bedford, Massachusetts, October 2013</i> , DCN: ACE-J23-35BG0708-M17-0016. | |
| 2 | METHODS AND RESOURCES | |
| | <ul style="list-style-type: none"> Coordinated with the City of New Bedford's dredging contractor (Mr. Pyne Tripp) to access the dredging barge via a work boat. Air samples were collected from four locations by the method described in the LHCC Air Plan. The samples were collected by Cashins and Associates, Waltham, MA. Likewise, the samples collected over four biweekly events were analyzed by Test America Laboratory in Knoxville, TN using the analytical method detailed in the LHCC Air Plan. | |
| 3 | DISCUSSION | |
| | <p>The EPA CAD Cell Phase 1 is being constructed to accommodate low level PCB impacted sediments from other areas of the Acushnet River and New Bedford Harbor. The top two feet of sediment from the cell footprint is contaminated with PCBs and as such is being dredged first to segregate the impacted sediment from the non-impacted sediment below the top two feet. Figure 1 shows the locations of the air sample stations in relation to the area of the CAD Cell.</p> <p>The following four tables present the Total PCB Homologue air sample results and the relationship with the cumulative exposure budget value. The established budgets are 220 ng/m³ and 344 ng/m³ for residential and commercial receptors, respectively.</p> | |

| Item | Remarks | Action Required By | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|-----------------------|-----------------------|-----------------------|----------------------|-----------------|--------------|-----------|-----|-----|----|-------------|-----------|------|-----|----|------------|-----------|-----------|-----|----|-------------|-----------|------|-----|----|-------------|---------|-----------------------|----------------------|-----------------|--------------|-----------|----------|-----|----|-------------|-----------|---------|-----|----|------------|-----------|------|-----|----|-------------|-----------|------|-----|----|-------------|---------|-----------------------|-----------------------|-----------------|--------------|-----------|------|-----|----|-------------|-----------|------|-----|----|------------|-----------|-------|-----|----|-------------|-----------|-----------|-----|----|--|
| | <p data-bbox="224 283 712 310"><u>Table 1 Air Monitoring Station #44 - Taber</u></p> <table border="1" data-bbox="269 346 1290 561"> <thead> <tr> <th>Sample Date</th> <th>Analyte</th> <th>Sample Result (ng/m3)</th> <th>Budget Value (ng/m3)</th> <th>Exceeds Budget?</th> </tr> </thead> <tbody> <tr> <td>26-Mar- 2013</td> <td>PCB total</td> <td>1.1</td> <td>220</td> <td>No</td> </tr> <tr> <td>20-Nov 2013</td> <td>PCB total</td> <td>2.17</td> <td>220</td> <td>No</td> </tr> <tr> <td>4-Dec-2013</td> <td>PCB total</td> <td>3.31/3.0d</td> <td>220</td> <td>No</td> </tr> <tr> <td>19-Dec-2013</td> <td>PCB total</td> <td>2.32</td> <td>220</td> <td>No</td> </tr> </tbody> </table> <p data-bbox="224 604 716 668">ng/m3 = nanograms per cubic meter of air d = duplicate sample</p> <p data-bbox="224 817 733 844"><u>Table 2 Air Monitoring Station #45 - Pilgrim</u></p> <table border="1" data-bbox="265 880 1290 1095"> <thead> <tr> <th>Sample Date</th> <th>Analyte</th> <th>Sample Result (ng/m3)</th> <th>Budget Value (ng/m3)</th> <th>Exceeds Budget?</th> </tr> </thead> <tbody> <tr> <td>26-Mar- 2013</td> <td>PCB total</td> <td>1.8/1.8d</td> <td>220</td> <td>No</td> </tr> <tr> <td>20-Nov 2013</td> <td>PCB total</td> <td>1.68/2d</td> <td>220</td> <td>No</td> </tr> <tr> <td>4-Dec-2013</td> <td>PCB total</td> <td>2.16</td> <td>220</td> <td>No</td> </tr> <tr> <td>19-Dec-2013</td> <td>PCB total</td> <td>3.13</td> <td>220</td> <td>No</td> </tr> </tbody> </table> <p data-bbox="224 1138 716 1202">ng/m3 = nanograms per cubic meter of air d = duplicate sample</p> <p data-bbox="224 1351 728 1378"><u>Table 3 Air Monitoring Station #50 - Area D</u></p> <table border="1" data-bbox="269 1415 1290 1630"> <thead> <tr> <th>Sample Date</th> <th>Analyte</th> <th>Sample Result (ng/m3)</th> <th>Budget Value (ng/m3))</th> <th>Exceeds Budget?</th> </tr> </thead> <tbody> <tr> <td>26-Mar- 2013</td> <td>PCB total</td> <td>0.49</td> <td>344</td> <td>No</td> </tr> <tr> <td>20-Nov 2013</td> <td>PCB total</td> <td>3.55</td> <td>344</td> <td>No</td> </tr> <tr> <td>4-Dec-2013</td> <td>PCB total</td> <td>0.643</td> <td>344</td> <td>No</td> </tr> <tr> <td>19-Dec-2013</td> <td>PCB total</td> <td>3.5/3.02d</td> <td>344</td> <td>No</td> </tr> </tbody> </table> <p data-bbox="224 1672 716 1736">ng/m3 = nanograms per cubic meter of air d = duplicate sample</p> | Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | 26-Mar- 2013 | PCB total | 1.1 | 220 | No | 20-Nov 2013 | PCB total | 2.17 | 220 | No | 4-Dec-2013 | PCB total | 3.31/3.0d | 220 | No | 19-Dec-2013 | PCB total | 2.32 | 220 | No | Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | 26-Mar- 2013 | PCB total | 1.8/1.8d | 220 | No | 20-Nov 2013 | PCB total | 1.68/2d | 220 | No | 4-Dec-2013 | PCB total | 2.16 | 220 | No | 19-Dec-2013 | PCB total | 3.13 | 220 | No | Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3)) | Exceeds Budget? | 26-Mar- 2013 | PCB total | 0.49 | 344 | No | 20-Nov 2013 | PCB total | 3.55 | 344 | No | 4-Dec-2013 | PCB total | 0.643 | 344 | No | 19-Dec-2013 | PCB total | 3.5/3.02d | 344 | No | |
| Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26-Mar- 2013 | PCB total | 1.1 | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20-Nov 2013 | PCB total | 2.17 | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Dec-2013 | PCB total | 3.31/3.0d | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19-Dec-2013 | PCB total | 2.32 | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26-Mar- 2013 | PCB total | 1.8/1.8d | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20-Nov 2013 | PCB total | 1.68/2d | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Dec-2013 | PCB total | 2.16 | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19-Dec-2013 | PCB total | 3.13 | 220 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3)) | Exceeds Budget? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26-Mar- 2013 | PCB total | 0.49 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20-Nov 2013 | PCB total | 3.55 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Dec-2013 | PCB total | 0.643 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19-Dec-2013 | PCB total | 3.5/3.02d | 344 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Item | Remarks | Action Required By | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--|-----------------------|----------------------|-----------------------|----------------------|-----------------|--------------|-----------|-------------|-----|----|-------------|-----------|------|-----|----|------------|-----------|------|-----|----|-------------|-----------|-------|-----|----|-----------|
| | <p data-bbox="221 278 794 306"><u>Table 4 Air Monitoring Station #65 - Tripp Dredge</u></p> <table border="1" data-bbox="265 342 1285 555"> <thead> <tr> <th data-bbox="265 342 452 410">Sample Date</th> <th data-bbox="452 342 601 410">Analyte</th> <th data-bbox="601 342 811 410">Sample Result (ng/m3)</th> <th data-bbox="811 342 1025 410">Budget Value (ng/m3)</th> <th data-bbox="1025 342 1285 410">Exceeds Budget?</th> </tr> </thead> <tbody> <tr> <td data-bbox="265 410 452 449">26-Mar- 2013</td> <td data-bbox="452 410 601 449">PCB total</td> <td data-bbox="601 410 811 449">Not sampled</td> <td data-bbox="811 410 1025 449">344</td> <td data-bbox="1025 410 1285 449">No</td> </tr> <tr> <td data-bbox="265 449 452 487">20-Nov 2013</td> <td data-bbox="452 449 601 487">PCB total</td> <td data-bbox="601 449 811 487">6.21</td> <td data-bbox="811 449 1025 487">344</td> <td data-bbox="1025 449 1285 487">No</td> </tr> <tr> <td data-bbox="265 487 452 525">4-Dec-2013</td> <td data-bbox="452 487 601 525">PCB total</td> <td data-bbox="601 487 811 525">3.57</td> <td data-bbox="811 487 1025 525">344</td> <td data-bbox="1025 487 1285 525">No</td> </tr> <tr> <td data-bbox="265 525 452 555">19-Dec-2013</td> <td data-bbox="452 525 601 555">PCB total</td> <td data-bbox="601 525 811 555">0.890</td> <td data-bbox="811 525 1025 555">344</td> <td data-bbox="1025 525 1285 555">No</td> </tr> </tbody> </table> <p data-bbox="221 597 715 661">ng/m3 = nanograms per cubic meter of air d = duplicate sample</p> <p data-bbox="221 697 1351 795">On or about January 22, 2014, direction was given by the EPA to include the post-dredge air sampling round as part of the 2014 pre-dredge sampling round that is anticipated to be completed the first week of March, 2014.</p> <p data-bbox="208 840 1351 904">The meteorological data collected during the four sampling periods is included in the attached Table 5 – Meteorological Data for LHCC Sample Rounds.</p> | Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | 26-Mar- 2013 | PCB total | Not sampled | 344 | No | 20-Nov 2013 | PCB total | 6.21 | 344 | No | 4-Dec-2013 | PCB total | 3.57 | 344 | No | 19-Dec-2013 | PCB total | 0.890 | 344 | No | completed |
| Sample Date | Analyte | Sample Result (ng/m3) | Budget Value (ng/m3) | Exceeds Budget? | | | | | | | | | | | | | | | | | | | | | | | |
| 26-Mar- 2013 | PCB total | Not sampled | 344 | No | | | | | | | | | | | | | | | | | | | | | | | |
| 20-Nov 2013 | PCB total | 6.21 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Dec-2013 | PCB total | 3.57 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | |
| 19-Dec-2013 | PCB total | 0.890 | 344 | No | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | CONCLUSION | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p data-bbox="208 1019 1351 1117">All of the air sampling equipment functioned properly even in the cold weather. The laboratory analyses were completed without issue and the data validated without any discrepancies.</p> <p data-bbox="208 1132 1351 1229">None of the air results exceeded the cumulative exposure budget value. The measured data is quite low when compared to the respective budgets. The maximum being 1.8% of the commercial budget and 1.5% of the residential budget.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 5
Meteorological Data/Tide Data Summary,
New Bedford Harbor Superfund Site - Lower Harbor Top of CAD Cell Dredging - 2013 Season

| Date | Avg Wind Speed (mph) | Wind Direction | Min Temp (°F) | Max Temp (°F) | Min Humidity (%) | Max Humidity (%) | Barometric Pressure (in Hg) | Avg Radiation (watts/m ²) | Max Radiation (watts/m ²) | Tide Min (ft msl) | Tide Min Time ⁽¹⁾ | Tide Max (ft msl) | Tide Max Time ⁽¹⁾ |
|-------------|----------------------|----------------|---------------|---------------|------------------|------------------|-----------------------------|---------------------------------------|---------------------------------------|-------------------|------------------------------|-------------------|------------------------------|
| 26-Mar-2013 | 10 | WNW | 33 | 49 | 39 | 100 | 29.53 | 197 | 793 | -0.5 | 1330 | 4.3 | 2012 |
| 21-Nov-2013 | 6 | SW | 29 | 47 | 34 | 79 | 30.40 | 125 | 534 | 0.2 | 232 | 3.8 | 953 |
| 5-Dec-2013 | 5 | SSW | 33 | 50 | 59 | 100 | 29.95 | 52 | 446 | -0.6 | 222 | 4.9 | 919 |
| 20-Dec-2013 | 8 | SSW | 29 | 52 | 62 | 100 | 29.94 | 95 | 441 | 0 | 212 | 3.8 | 927 |

Notes:

(1) The tide data are based upon the tides at the New Bedford, Harmonic Station (41°38'N 70°55'W) as predicted by the National Oceanic and Atmospheric Administration (NOAA).

°F = degrees Fahrenheit

% = percent

ft msl = feet mean sea level

in Hg = inches of mercury

mph = miles per hour

watts/m² = watts per square meter.