Owner: King County  
Project: Lower Duwamish Waterway ENR/AC Pilot  
Dates: January 9, 2017 to January 13, 2017

Weekly Progress Meeting Summary:

- Schedule:
  - No work performed Monday January 16, 2017. (MLK - Govt. Holiday)
  - Sub-tidal plot placement of Sand+AC started on January 9, 2017.
  - Placement of Sand+AC scheduled to be completed on Jan 18, 2017. Barge dewatering will then be completed and any remain material be removed.
  - The loading the Sand on the KP-3 was completed on Friday, Jan 13th.
  - The placement of the Sand in the subplot expected to start at the end of the week.
  - Subtidal plot is scheduled to be completed by Jan 25th.

- Issues:
  - No issues at this time; but when placing at Sub-tidal Plot which is within the Navigation channel be aware of the minimum depth requirements that must be maintained.
  - Vessel traffic has not been issue.

Construction Progress:

- Schedule (updated weekly by contractor – Attached)
- General progress with respect to schedule
  - Completed ~80% of the placement grid in the Sand+AC Sub-tidal subplot.
  - Loading of the Sand ENR was performed on Jan 13th.
- Work scheduled for this week:
  - Complete Sand+AC placement in Subtidal plot.
  - Dewater the KP-2 (Sand+AC barge) and remove any remaining material in the barge.
  - Daily hydrographic surveys performed at the end of each shift.

Problems Encountered (If Any) & Associated Action Items: ☐ None ☒ See Comments below:

<table>
<thead>
<tr>
<th>Problems Encountered</th>
<th>Date</th>
<th>Required Action</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen blocks of sand at the Cal-Portland Dupont facility made loading of the KP-3 more difficult. The freezing conditions increased the loading time from approximate 1 hour to more than 3 hours.</td>
<td>01/13/2017</td>
<td>No action required. Freezing conditions only increased the time it took to load the barge. If sand was to be amended with AC it would be difficult to</td>
<td></td>
</tr>
</tbody>
</table>

Water Quality Monitoring:

- Observed non-construction-related events that impacted water quality.
  - None
- Summary of water quality criteria violations and actions taken.
Weekly Progress Report No. 007  
Prepared By: DJP  
Date: January 16, 2017

- No exceedances at the 150 or 300 foot compliance points to report during the 5 monitoring events that took place during the week. The table below summarizes the WQM data.

### WQM Data for Jan 09, 2017 - Jan 11, 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Turbidity Reading (NTU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/09/2017</td>
<td>4.5</td>
</tr>
<tr>
<td>01/10/2017</td>
<td>1.0</td>
</tr>
<tr>
<td>01/10/2017</td>
<td>5.0</td>
</tr>
<tr>
<td>01/11/2017</td>
<td>2.0</td>
</tr>
<tr>
<td>01/11/2017</td>
<td>3.0</td>
</tr>
</tbody>
</table>

- **QA Inspections:**
  - Results:
    - QA Inspections:
      - DOF representative was at Cal-Portland’s Dupont facility to observe the loading of the Sand ENR. No samples were collected per the QAPP.
    - Surveying (Performed at the end of each shift. Attached is the Jan 13, 2017 survey)
    - Monitoring Activities:
      - Divers performed post placement measurements and dock inspection at Scour Plot on Jan 9th and 10th. Average thickness for the Gravelly Sand + AC and Gravelly Sand subplots were 9 inches and 10 inches respectively.
      - Year Zero monitoring occurred at the Intertidal Plot on Wed, Jan 11, 2017.
  - Out of Spec Conditions (if encountered) & Corrective Actions: ☒ None ☐ See Comments below:

<table>
<thead>
<tr>
<th>Out of Spec condition</th>
<th>Date</th>
<th>Corrective Action</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Photo 1-A: RSS dive boat prepping to perform post placement stake measurements.

Photo 1-B: Terrasond representative establishing RTK GPS base station at Lafarge dock prior to placement activities at the Sub-tidal plot.
Photo 2-A: AMECFW performing WQM downstream of placement activities at the Sub-tidal plot.

Photo 2-A: Sand ENR stockpile at the Cal-Portland’s Dupont facility. Note the blocks of frozen sand. These blocks of frozen sand made loading difficult.
<table>
<thead>
<tr>
<th>ID</th>
<th>Task Mode</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ENR</td>
<td>Placement Activities</td>
<td>14 days</td>
<td>Mon 1/9/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>2</td>
<td>Subtidal</td>
<td>Clean KP2 Barge, Place Any Remaining Sand + AC Material</td>
<td>1 day</td>
<td>Thu 1/19/17</td>
<td>Thu 1/19/17</td>
</tr>
<tr>
<td>3</td>
<td>Place Sand + AC</td>
<td></td>
<td>7 days</td>
<td>Mon 1/9/17</td>
<td>Wed 1/18/17</td>
</tr>
<tr>
<td>4</td>
<td>Place Sand</td>
<td></td>
<td>6 days</td>
<td>Fri 1/20/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>5</td>
<td>Survey Activities</td>
<td></td>
<td>10 days</td>
<td>Mon 1/16/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>6</td>
<td>Subtidal: Post-Placement Survey</td>
<td></td>
<td>0 days</td>
<td>Fri 1/27/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>7</td>
<td>Remove Basestation Equipment</td>
<td></td>
<td>0 days</td>
<td>Fri 1/27/17</td>
<td>Fri 1/27/17</td>
</tr>
</tbody>
</table>
NOTES
1. SURVEY FOR THE SCOUR AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 13, 2017
NOTES
1. SURVEY FOR THE SCOUR AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 13, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz, APLANK, AML APPLANK,
   WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML; AVE; SOUNDB VEL OCITY PRO E, AND HYPACK
   HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. BACKGROUND INFORMATION IS FOR VISUAL REFERENCE ONLY

TARGET ZONE

EXISTING STRUCTURES AND BEACH

MATERIAL THICKNESS
(PRE VS CURRENT)

SURVEY CONTROL

DATUM INFORMATION

Horizontal: WASHINGTON STATE PLANE NORTH, NAD 3, U.S. FEET
Vertical: MEAN LOWER LOW WATER (MLLW) NOS SEATTLE EPOCH 1983-2001

NOTE: SURVEY FOR THE SCOUR AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 13, 2017.
NOTES
1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 13, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT “LAFARGE 1”
4. PROFILE VERTICAL EXAGGERATION IS x1.0

SURVEY CONTROL

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS

Please refer to the PDF for detailed surveying notes and control information.
NOTES
1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOUND LIMITED ON JANUARY 13, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERITAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0

PROFILES LEGEND
- SAND SUBPLOT
- SAND+AC SUBPLOT
- CURRENT SURVEY
- PRE-SURVEY (DEC 29, 2016)

SURVEY CONTROL
- LAFARGE 1:
  N: 205,146.676
  E: 1,267,798.908
  Z: 19.327
- LAFARGE 2:
  N: 205,410.865
  E: 1,267,710.952
  Z: 19.072

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS
SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 13, 2017

HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016

REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"

PROFILE VERTICAL EXAGGERATION IS x1.0
Owner: King County  
Project: Lower Duwamish Waterway ENR/AC Pilot  
Dates: January 16, 2017 to January 20, 2017

Weekly Progress Meeting Summary:

- Schedule:
  - Placement of the Sand ENR material in Sub-tidal plot to be complete by Friday, Jan 27th.
  - No work was performed on Monday, 01/16/2017, for government holiday.
- Issues & Challenges:
  - No issues encountered.
  - Traffic on the waterway has not significantly impacted operations. Over the last week all vessel and barge traffic has been able to pass on the east side of the waterway without PPM having to clear out of the nav-channel.
  - Higher than predicted tides slowed the placement process in the Sub-tidal plot. See Problems Encountered below.

Construction Progress:

- Schedule (updated weekly by contractor – Attached)
  - Attached is the schedule dated 01/18/2017. The schedule has not changed since this schedule was submitted by PPM.
- General progress with respect to schedule
  - Completed placement of the Sand+AC in the Subtidal plot on 01/19/2017.
  - Dewatered and demobilized the KP-2 material barge.
  - Water was pumped into the KP-3 material barge to saturate the Sand ENR Material.
  - Started placement of Sand ENR Material in the Subtidal Plot.
  - Work scheduled for this week:
    - Complete Sand ENR Material placement in Subtidal plot.
    - Dewater the KP-3 (Sand barge) and remove any remaining Sand ENR material in the barge.
    - Daily hydrographic surveys performed at the end of each shift.
    - Demobilize

Problems Encountered (If Any) & Associated Action Items: [ ] None  [x] See Comments below:

<table>
<thead>
<tr>
<th>Problems Encountered</th>
<th>Date</th>
<th>Required Action</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher than predicted tides throughout the week made it difficult to get the bucket down to the required 2 feet above mudline opening elevation (excavator reach too short at highest water levels).</td>
<td></td>
<td>Additional movements and spudding down required in order to position barge and excavator for placement. Operations were stopped when tide level prevented bucket from reaching required elevation above mudline.</td>
<td></td>
</tr>
</tbody>
</table>
Water Quality Monitoring:
- Observed non-construction-related events that impacted water quality.
  - None
- Summary of water quality criteria violations and actions taken.
  - No WQM activities to report. (No monitoring required or performed based on previous monitoring results).

QA Inspections:
- Results:
  - QA Inspections:
    - None.
  - Surveying (Performed at the end of each shift. Attached is the Jan 20, 2017 survey)
  - Monitoring Activities:
    - None.
- Out of Spec Conditions (if encountered) & Corrective Actions: ☒ None ☐ See Comments below:

<table>
<thead>
<tr>
<th>Out of Spec condition</th>
<th>Date</th>
<th>Corrective Action</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Photo 1-A: Vessel traffic on the waterway.

Photo 1-B: Barge traffic on the waterway passing on the east side of the material barge. Note the tow bridal hanging down into the water from the bow (circle in red).
Photo 2-A: Cleanup of the KP-2 (Sand+AC ENR Material barge).

Photo 2-A: KP-3 (Sand barge) proximity to the AML’s barge Anchorage Trader. Western Towboat tug shown (yellow and blue paint) is in the process of tying up to the barge to take it downstream to Elliott Bay.
<table>
<thead>
<tr>
<th>ID</th>
<th>Mode</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>ENR Placement Activities</td>
<td>14 days</td>
<td>Mon 1/9/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Subtidal</td>
<td>14 days</td>
<td>Mon 1/9/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Place Sand + AC</td>
<td>7 days</td>
<td>Mon 1/9/17</td>
<td>Wed 1/18/17</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Clean KP2 Barge, Place Any Remaining Sand + AC Material</td>
<td>1 day</td>
<td>Thu 1/19/17</td>
<td>Thu 1/19/17</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Place Sand</td>
<td>6 days</td>
<td>Fri 1/20/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Survey Activities</td>
<td>10 days</td>
<td>Mon 1/16/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Subtidal: Post-Placement Survey</td>
<td>0 days</td>
<td>Fri 1/27/17</td>
<td>Fri 1/27/17</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Remove Basestation Equipment</td>
<td>0 days</td>
<td>Fri 1/27/17</td>
<td>Fri 1/27/17</td>
</tr>
</tbody>
</table>

**Project: 3-Week Look Ahead [1-18] Date: Wed 1/18/17**
ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15

MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS

DATUM INFORMATION
Horizontal: WASHINGTON STATE PLANE NORTH, NAD: 3, U.S. FEET
Vertical: MEAN LOWER LOW WATER (MLLW) NOS SEATTLE EPOCH 1983-2001

NOTES
1. SURVEY FOR THE SCOUR AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML: EAM, APPLIAN
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. BACKGROUND INFORMATION IS FOR VISUAL REFERENCE ONLY

SURVEY CONTROL

SURVEY CONTOURS
BUCKET PLACEMENT

MATERIAL THICKNESS
(PRE VS CURRENT)

-1.0
-0.75
-0.5
-0.3
-0.1
+0.1
+0.3
+0.5
+0.75
+1.0

N: 205,146.676
E: 1,267,798.908
Z: 19.327

N: 205,410.865
E: 1,267,710.952
Z: 19.072

LEGEND
BUCKET LIMIT
TARGET
INDEX INTERVAL
EXISTING STRUCTURES
OPTIONAL E. GEOTEX MATERIAL PLACEMENT
CURRENT SURVEY E. TENT
SHORE CONDITIONS
MATERIAL THICKNESS

TERRASOND

300 NW 42nd Street, Suite 215 | Seattle, WA 98107

PACIFIC PILE & MARINE

700 S Riverside Drive | Seattle, WA 98108

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS

PACIFIC PILE & MARINE

700 S Riverside Drive | Seattle, WA 98108

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS

PACIFIC PILE & MARINE

700 S Riverside Drive | Seattle, WA 98108

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS

PACIFIC PILE & MARINE

700 S Riverside Drive | Seattle, WA 98108
NOTES

1. SURVEY FOR THE SCOUR AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7105 400kHz, MLA: EAML APPLIAN,
   WAVE MASTER INERTIAL NAVIGATION SYSTEM, AML: JSE - SOUND VELOCITY PRO: E, AND HYPPACK
   HYSSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT “LAFARGE 1”
4. BACKGROUND INFORMATION IS FOR VISUAL REFERENCE ONLY
1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERITAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0

SURVEY CONTROL

LATITUDE: 47.629410, 56:              19.327
LAFARGE 2

N: 205,410.865
E: 1,267,710.952
Z: 19.072

**NOTES**

1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERITAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0

**PROFILES LEGEND**

- SAND, AC, PILOT
- SAND, AC, ACU
- E: TIDY (6 INCHES)
- E: TIDY (8 INCHES)
- CURRENT SURVEY PROFILE

**SAND SUBPLOT**

N: 205,146.676
E: 1,267,798.908
Z: 19.327

**SAND+AC SUBPLOT**

N: 205,410.865
E: 1,267,710.952
Z: 19.072

**DATUM INFORMATION**

Horizontal: WASHINGTON STATE PLANE NORTH, NAD 3; U. S. FEET
Vertical: MEAN LOWER LOW WATER (MLLW) NOS SEATTLE EPOCH 1983-2001

**SURVEY CONTROL**

LATITUDE: 47.629410, 56:              19.327
LAFARGE 2

N: 205,410.865
E: 1,267,710.952
Z: 19.072

**NOTES**

1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERITAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0
1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT “LAFARGE 1”
4. PROFILE VERTICAL EXAGGERATION IS x1.0
NOTES
1. SURVEY FOR THE SCOUR PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 20, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0

SURVEY CONTROL

LAFARGE 1
N: 205,146.676
E: 1,267,798.908
Z: 19.327

LAFARGE 2
N: 205,410.865
E: 1,267,710.952
Z: 19.072

SUMMARY: MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT PROGRESS
Owner: King County  
Project: Lower Duwamish Waterway ENR/AC Pilot  
Dates: January 16, 2017 to January 20, 2017

Weekly Progress Meeting Summary:
  - Last scheduled weekly meeting was held on Jan 24th and was summarized in the Weekly Progress Report No. 008.

Construction Progress:
  - Schedule (updated weekly by contractor – Attached)
    - NA.
  - General progress with respect to schedule
    - Initial placement grid for the Sand ENR at the Subtidal plot was completed on Thursday, Jan 26th.
    - Remaining Sand ENR after initial placement was complete was placed in areas that required additional material in order to achieve the minimum target thickness of 4 inches. These areas were identified using the January 25th bathymetric survey data.
    - Placement
    - Demobilized the KP-3 material barge.
  - Work scheduled for this week:
    - No work is scheduled for this week.

Problems Encountered (If Any) & Associated Action Items: □ None ☒ See Comments below:

<table>
<thead>
<tr>
<th>Problems Encountered</th>
<th>Date</th>
<th>Required Action</th>
<th>Date Completed</th>
</tr>
</thead>
</table>

Water Quality Monitoring:
  - Observed non-construction-related events that impacted water quality.
    - None
  - Summary of water quality criteria violations and actions taken.
    - No WQM activities to report. (No monitoring required or performed based on previous monitoring results).

QA Inspections:
  - Results:
    - QA Inspections:
      - None.
    - Surveying (Performed at the end of each shift. Attached is the Jan 26, 2017 survey)
    - Monitoring Activities:
      - None.
  - Out of Spec Conditions (if encountered) & Corrective Actions: ☒ None □ See Comments below:

<table>
<thead>
<tr>
<th>Out of Spec condition</th>
<th>Date</th>
<th>Corrective Action</th>
<th>Date Completed</th>
</tr>
</thead>
</table>
Photo 1-A: AML barge Whittier Provider being taken upstream with bridle chains hanging from bow.

Photo 1-B: AML barge Fairbanks Provider being taken upstream with bridle chains hanging from bow.
Photo 2-A: Slag ship being taken out to Elliot Bay by 2 Foss tugs after the ship was offloaded at Lafarge.

Photo 2-A: KP-3 barge after the last of the Sand ENR material has been placed.
NOTES
1. SURVEY FOR THE SUBTIDAL AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 26, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML EML EAM APPLANEX HYDROSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. BACKGROUND INFORMATION IS FOR VISUAL REFERENCE ONLY
NOTES
1. SURVEY FOR THE SUBTIDAL AREA WAS CONDUCTED BY TERRASOND LIMITED ON JAN 26, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML, ASI, EAM, APPLANIX, HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. BACKGROUND INFORMATION IS FOR VISUAL REFERENCE ONLY
SURVEY CONTROL
LAFARGE 1
N: 205,146.676
E: 1,267,798.908
Z: 19.327
LAFARGE 2
N: 205,410.865
E: 1,267,710.952
Z: 19.072

NOTES
1. SURVEY FOR THE SUBTIDAL PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 26, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON TDI 400kHz. MLI: EAM APPLANIX WAVE MASTER INERTIAL NAVIGATION SYSTEM, AML: EAM APLANIX WAVE MASTER INERTIAL NAVIGATION SYSTEM, AML: EAM APLANIX WAVE MASTER INERTIAL NAVIGATION SYSTEM, AML: EAM APLANIX WAVE MASTER INERTIAL NAVIGATION SYSTEM, AML: EAM APLANIX WAVE MASTER INERTIAL NAVIGATION SYSTEM
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0

ENHANCED NATURAL RECOVERY
ACTIVATED CARBON PILOT STUDY
DUWAMISH WATERWAY
CONTRACT # C00992C15
MULTIBEAM HYDROGRAPHIC SURVEY
SUBTIDAL PLOT POST-PLACEMENT

SAND | SAND+AC

SAND | SAND+AC

SAND | SAND+AC

SAND | SAND+AC
NOTES
1. SURVEY FOR THE SUBTIDAL PLOT AREA WAS CONDUCTED BY TERRASOND LIMITED ON JANUARY 26, 2017
2. HYDROGRAPHIC DATA WAS COLLECTED USING A RESON 7125 400kHz MULTIBEAM, APPLANIX WAVEMASTER INERTIAL NAVIGATION SYSTEM, AML BASE-X SOUND VELOCITY PROBE, AND HYPACK HYSWEEP 2016
3. REAL-TIME KINEMATIC (RTK) POSITIONING WAS BASED ON RECORD COORDINATES FOR POINT "LAFARGE 1"
4. PROFILE VERTICAL EXAGGERATION IS x1.0