

## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127	<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Monday, July 27, 2020  <b>WEATHER:</b> Sunny, 80-97 °F Wind: SE @ 0.9 mph (10:29am) to S @ 6.4 mph (12:05pm)  <b>TIME:</b> 6:00 am – 5:00 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp.		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath
<b>EQUIPMENT:</b> Geoprobe 7720 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX	<b>PRESENT AT SITE:</b> Ashley Stappenbeck, Adrian Heath, Giuliana Frizzi, Mimi Raygorodetsky – Langan Brian Ehalt – EXCEL Environmental Resources Nick Turro, Jose Romoro – AARCO Environmental Services Corp.	
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan initiated Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Block 98, Lot 1).  <b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a Geoprobe 7720 DT drill rig with 4-foot-long Macro-Core® samplers to advance three soil borings to about 30 feet below grade surface (bgs). Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples.             <ul style="list-style-type: none"> <li>Boring SB4R: No petroleum-like odors, staining, or elevated photoionization detector (PID) readings were observed. Visual evidence of elemental mercury was not identified. Mercury vapor concentrations above background were identified with a Jerome J405 or J505 unit at a maximum concentration of 6.63 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) from 10 to 12 feet bgs. Total mercury concentrations detected with the Niton XL3t XRF (XRF) were identified at a maximum concentrations of 42 parts per million (ppm) from 2 to 4 feet bgs.</li> <li>Boring SB4E1: No petroleum-like odors, staining, or elevated PID readings were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of <math>2.48 \mu\text{g}/\text{m}^3</math> was identified with a Jerome J405 or J505 unit from 2 to 4 feet bgs. Total mercury concentrations detected with the XRF were less than the limit of detection (LOD).</li> <li>Boring SB4W1: No petroleum-like odors, staining, or elevated PID readings were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of <math>0.15 \mu\text{g}/\text{m}^3</math> was identified with a Jerome J405 or J505 unit from 0 to 2 feet bgs. Total mercury concentrations detected with the XRF were less than the LOD.</li> </ul> </li> <li>All soil borings were backfilled with drill cuttings from the borehole and then patched with cold patch asphalt after sampling was completed.</li> </ul> <b>Material Tracking</b> <ul style="list-style-type: none"> <li>No material was imported to the site.</li> <li>No material was exported from the site.</li> </ul>		
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Adrian Heath  <b>LANGAN</b>	

## SITE OBSERVATION REPORT

- No investigation derived waste (i.e. soil cutting or groundwater) was generated during site activities.

### **Sampling**

- The following samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP. The following sample depths were submitted for analysis of total mercury:
  - SB4R: 0-2, 2-4, 4-6, 6-8, 10-12, 14-16, and 18-20 feet bgs
  - SB4E1: 0-2, 2-4, 6-8, 10-12, 14-16, 16-18, and 18-20 feet bgs.
  - SB4W1: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs
- Two quality assurance/quality control soil sample (duplicate and matrix spike/matrix spike duplicate [MS/MSD]) were collected and submitted for analysis.
- Due to low soil recovery samples could not be collected in soil boring SB4R from 8 to 10, 12 to 14, and 16-18 feet bgs and in soil boring SB4E1 from 4 to 6, 8 to 10, and 12 to 14 feet bgs.
- The following samples were collected and relinquished to Eurofins, and were placed on hold pending total mercury results from 0 to 20 feet bgs:
  - SB4R: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB4E1: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB4W1: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
- Select samples will be additionally analyzed for mercury selective sequential extraction, pending total mercury results.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of particulate matter smaller than 10 microns in diameter (PM10) and volatile organic compounds (VOCs) did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

- An instantaneous mercury vapor reading of 20.6 µg/m<sup>3</sup> occurred at the CAMP station PM1 at 13:40. The instantaneous reading caused the fifteen-minute average concentration to exceed the action level (readings are collected every minute). Work was stopped and the dedicated CAMP personnel used a handheld Jerome J505 to collect readings next to the PM1 station. The Jerome J505 air samples were non-detect. Instantaneous mercury vapor readings at the PM1 CAMP station from before and after the instantaneous spike were all below the detection limit. Mercury vapor was not observed in soil borings at concentrations approaching the elevated instantaneous mercury vapor concentration. The elevated reading may have resulted from interference or a power surge from the CAMP station battery.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.025	0.0	0.0
PM-2	0.036	0.0	0.0
PM-3	0.025	0.4	0.0
PM-4	0.019	0.3	0.0
PM-5	0.017	0.4	0.0
PM-6	0.021	0.0	0.0
WZ-1	0.011	0.0	0.1

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Max 15 Minute Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.034	0.0	1.4
PM-2	0.041	0.2	0.1
PM-3	0.045	0.7	0.1
PM-4	0.036	0.4	0.0
PM-5	0.035	2.1	0.2
PM-6	0.037	0.3	0.1
WZ-1	0.031	0.7	0.4

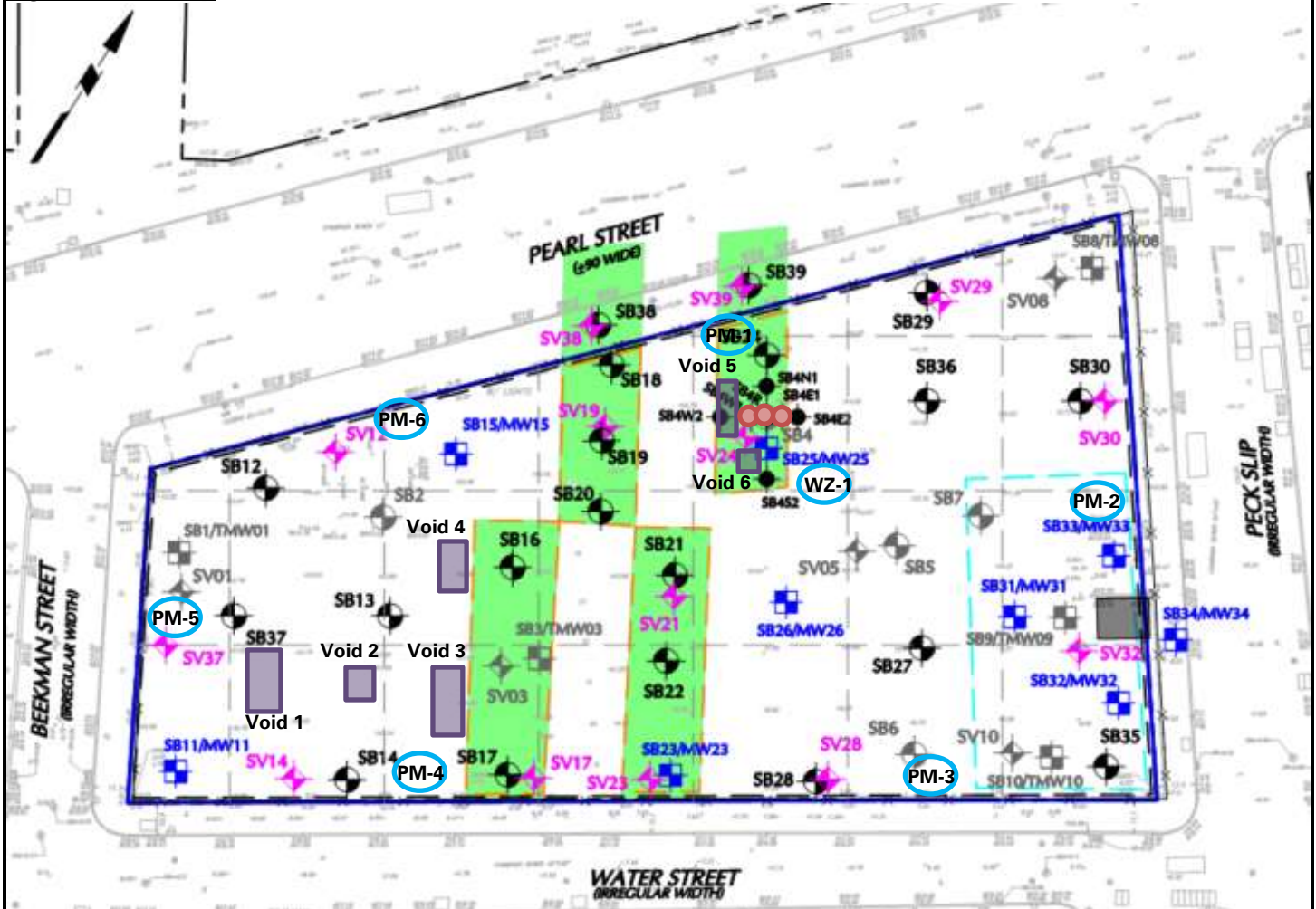
### Anticipated Activities

- AARCO and Langan will continue to advance and sample delineation and site-wide soil borings, and install monitoring wells within the Phase 3 work area.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc: J. Yanowitz, P. McMahon, M. Raygorodetsky

By: Adrian Heath

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## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO advancing soil boring SB4W1 (facing southwest)



Photo 2: Langan collecting VOC readings from a soil boring (facing northeast)

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			<b>LANGAN</b>



## SITE OBSERVATION REPORT

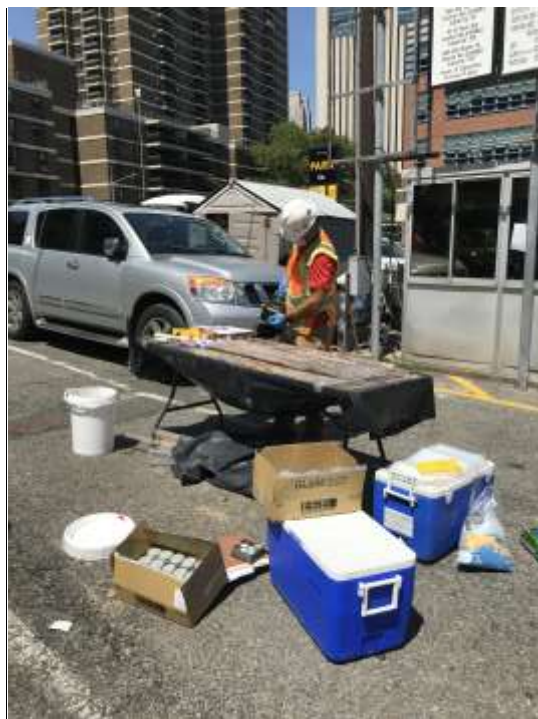


Photo 3: Langan collecting mercury vapor readings from a soil boring (facing northeast)



Photo 4: Perimeter CAMP station PM-4 in the southern part of the site (facing south)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127	<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Tuesday, July 28, 2020  <b>WEATHER:</b> Sunny, 85-95 °F Wind: S @ 0.8 mph (9:03am) to S @ 5.9 mph (13:40pm)  <b>TIME:</b> 6:00 am – 4:30 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp.		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath
<b>EQUIPMENT:</b> Geoprobe 7822 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX	<b>PRESENT AT SITE:</b> <b>RI Day 6</b> Ashley Stappenbeck, Adrian Heath, Mimi Raygorodetsky – Langan Rick Lin – NYSDEC Brian Ehalt – EXCEL Environmental Resources Nick Turro, Jose Romoro – AARCO Environmental Services Corp.	
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan continued implementing Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Manhattan Block 98, Lot 1).  <b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a Geoprobe 7822 DT drill rig with 4-foot-long Macro-Core® samplers to advance three soil borings to about 30 feet below grade surface (bgs). Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples.             <ul style="list-style-type: none"> <li>Boring SB25: No petroleum-like odors, staining, or elevated photoionization detector (PID) readings were observed. Visual evidence of elemental mercury was not identified. Mercury vapor concentrations above background were identified with a Jerome J405 or J505 unit at a maximum concentration of 1.72 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) from 4 to 6 feet bgs. Total mercury concentrations evaluated with the Niton XL3t XRF (XRF) were less than the limit of detection (LOD).</li> <li>Boring SB4N1: No petroleum-like odors, staining, or elevated PID readings were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of <math>0.23 \mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 0 to 2 feet bgs. Total mercury concentrations evaluated with the XRF were identified at a maximum concentrations of 63 parts per million (ppm) from 0 to 2 feet bgs.</li> <li>Boring SB4E2: No petroleum-like odors, staining, or elevated PID readings were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of <math>0.13 \mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 4 to 6 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.</li> </ul> </li> <li>All soil borings were backfilled with drill cuttings from the borehole, clean sand, and/or bentonite and then patched with cold patch asphalt after sampling was completed.</li> <li>AARCO used a Geoprobe 7822 DT drill rig to install monitoring well MW25 with the following construction:             <ul style="list-style-type: none"> <li>MW25 consists of a 2-inch diameter polyvinyl chloride (PVC) monitoring well with 20-slot well screen from about 12 to 22 feet bgs. MW25 will be developed at a future date.</li> </ul> </li> </ul>		
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Adrian Heath  <b>LANGAN</b>	

## SITE OBSERVATION REPORT

### **Material Tracking**

- No material was imported to the site.
- No material was exported from the site.
- No investigation derived waste (i.e. soil cutting or groundwater) was generated during site activities.

### **Sampling**

The following samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. (Eurofins) a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP:

- The following sample depths were submitted for analysis of total mercury:
  - SB25: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs
  - SB4N1: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs.
  - SB4E2: 0-2, 2-4, 4-6, 6-8, 8-10, 12-14, 14-16, 16-18, and 18-20 feet bgs

Due to low soil recovery, a sample could not be collected in soil boring SB4E2 from 10 to 12 feet bgs.
- Select samples will be additionally analyzed for mercury selective sequential extraction, pending total mercury results.
- Four quality assurance/quality control soil samples (two mercury field blanks, one trip blank, and one duplicate) were collected and submitted for analysis.
- The following samples were placed on hold pending total mercury results from 0 to 20 feet bgs:
  - SB25: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB4N1: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB4E2: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
- The following sample depths were submitted for analysis of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides, herbicides, metals including hexavalent and trivalent chromium, total cyanide, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):
  - SB25: 0-2, 6-8, and 28-30 feet bgs

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath <b>LANGAN</b>
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## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of mercury vapor, particulate matter smaller than 10 microns in diameter (PM10), and VOCs did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.023	0.0	0.0
PM-2	0.035	0.0	0.2
PM-3	0.027	0.0	0.0
PM-4	0.018	0.1	0.0
PM-5	0.015	0.1	0.0
PM-6	0.018	0.0	0.0
WZ-1	0.013	0.3	0.1

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Max 15 Minute Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.045	0.0	0.6
PM-2	0.051	0.0	0.7
PM-3	0.067	0.2	0.0
PM-4	0.041	0.4	0.0
PM-5	0.038	0.3	0.0
PM-6	0.051	0.0	0.0
WZ-1	0.045	3.2	0.5

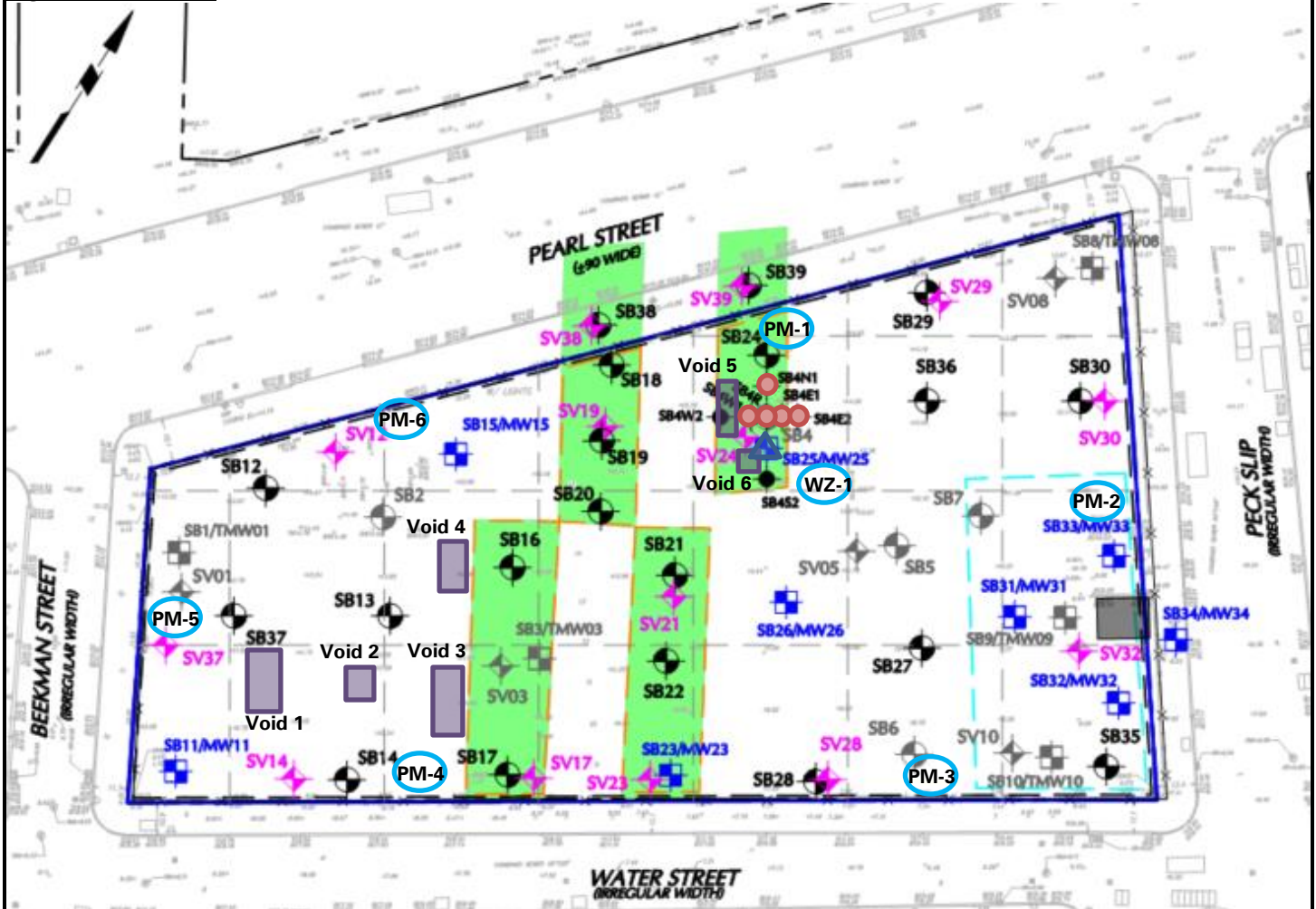
### Anticipated Activities

- AARCO and Langan will continue to advance and sample soil borings and install monitoring wells within the Phase 3 work area.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- ▲ Approximate location of soil borings sampled and monitoring well installed
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO advancing soil boring SB4E2 in the northern part of the site (facing north)



Photo 2: Monitoring well MW25 installed by AARCO

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath <b>LANGAN</b>
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## SITE OBSERVATION REPORT



Photo 3: Langan collecting mercury vapor readings from a soil boring (facing north)

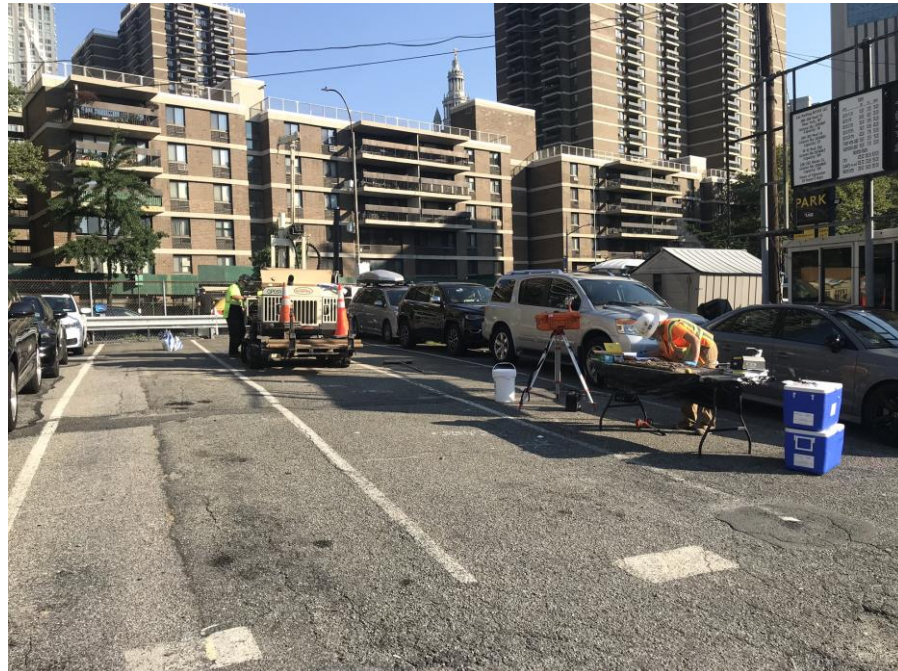


Photo 4: AARCO advancing soil boring SB4N1 and Langan sampling soil in the northern part of the site (facing north)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath <b>LANGAN</b>
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## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127		<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Wednesday, July 29, 2020  <b>WEATHER:</b> Sunny, 80-90 °F Wind: SE @ 0.6 mph (6:56 am) to S @ 6.6 mph (2:52 pm)  <b>TIME:</b> 5:45 am – 5:45 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp.		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath	
<b>EQUIPMENT:</b> Geoprobe 7822 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX		<b>PRESENT AT SITE:</b> Ashley Stappenbeck, Adrian Heath, Paul McMahon – Langan Nick Turro, Sergio Magana – AARCO Environmental Services Corp.	
<b>RI Day 7</b>			
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan continued implementing Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Manhattan Block 98, Lot 1).			
<b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a Geoprobe 7822 DT drill rig with 4-foot-long Macro-Core® samplers to advance four soil borings. Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples.           <ul style="list-style-type: none"> <li>Boring SB4S2: Boring was advanced to 30 feet below grade surface (bgs). Petroleum-like odors, staining, and photoionization detector (PID) readings up to 42 parts per million (ppm) were observed at 17 to 21 feet bgs. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.88 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) was identified with a Jerome J505 unit from 4 to 6 feet bgs. Total mercury concentrations evaluated with the Niton XL3t XRF (XRF) were identified at a maximum concentration of 23 ppm from 4 to 6 feet bgs.</li> <li>Boring SB4W2: Boring was advanced to 30 feet bgs. No petroleum-like odors, staining, or PID readings above background were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 1.72 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 14 to 16 feet bgs. Total mercury concentrations evaluated with the XRF were identified at a maximum concentration of 179 ppm from 2 to 4 feet bgs.</li> <li>Boring SB24: Boring was advanced to 30 feet bgs. No petroleum-like odors, staining, or PID readings above background were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.75 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 6 to 8 feet bgs. Total mercury concentrations evaluated with the XRF were identified at a maximum concentration of 257 ppm from 2 to 4 feet bgs.</li> <li>Boring SB19: Boring was advanced to 20 feet bgs. No petroleum-like odors, staining, or PID readings above background were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.10 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 14 to 16 feet bgs. Total mercury concentrations evaluated with the XRF were less than limit of detection (LOD).</li> </ul> </li> </ul>			
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Adrian Heath		
<b>LANGAN</b>			

## SITE OBSERVATION REPORT

- All soil borings were backfilled with drill cuttings from the borehole, clean sand, and/or bentonite and then patched with cold patch asphalt after sampling was completed.

### **Material Tracking**

- No material was imported to the site.
- No material was exported from the site.
- No investigation derived waste (i.e. soil cutting or groundwater) was generated during site activities.

### **Sampling**

The following samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. (Eurofins) a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP:

- The following sample depths were submitted for analysis of total mercury:
  - SB4S2: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs
  - SB4W2: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs
  - SB24: 0-2, 2-4, 4-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, and 18-20 feet bgs
- Select samples will be additionally analyzed for mercury selective sequential extraction, pending total mercury results.
- Twelve quality assurance/quality control soil samples (five mercury field blanks, four mercury duplicates, four matrix spike/matrix spike duplicate, one trip blank, and one equipment blank) were collected and submitted for analysis.
- The following samples were placed on hold pending total mercury results from 0 to 20 feet bgs:
  - SB4S2: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB4W2: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
  - SB24: 20-22, 22-24, 24-26, 26-28, and 28-30 feet bgs
- The following sample depths were submitted for analysis of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides, herbicides, metals including hexavalent and trivalent chromium, total cyanide, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):
  - SB19: 0-2, 6-8, and 18-20 feet bgs
  - SB24: 0-2, 6-8, and 10-12 feet bgs
- The following sample depths were submitted for analysis of VOCs, SVOCs, and metals including hexavalent and trivalent chromium:
  - SB4S2: 18-19 and 22-23 feet bgs

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>



## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of mercury vapor, particulate matter smaller than 10 microns in diameter (PM10), and VOCs did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.022	0.2	0.1
PM-2	0.032	0.0	0.0
PM-3	0.022	0.0	0.0
PM-4	0.019	0.0	0.0
PM-5	0.015	0.5	0.0
PM-6	0.017	0.0	0.0
WZ-1	0.011	0.0	0.1

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Maximum 15-Minute-Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.028	1.9	0.8
PM-2	0.039	0.0	0.2
PM-3	0.038	0.1	0.1
PM-4	0.027	0.0	0.0
PM-5	0.023	2.4	0.0
PM-6	0.031	1.5	0.0
WZ-1	0.038	0.0	0.4

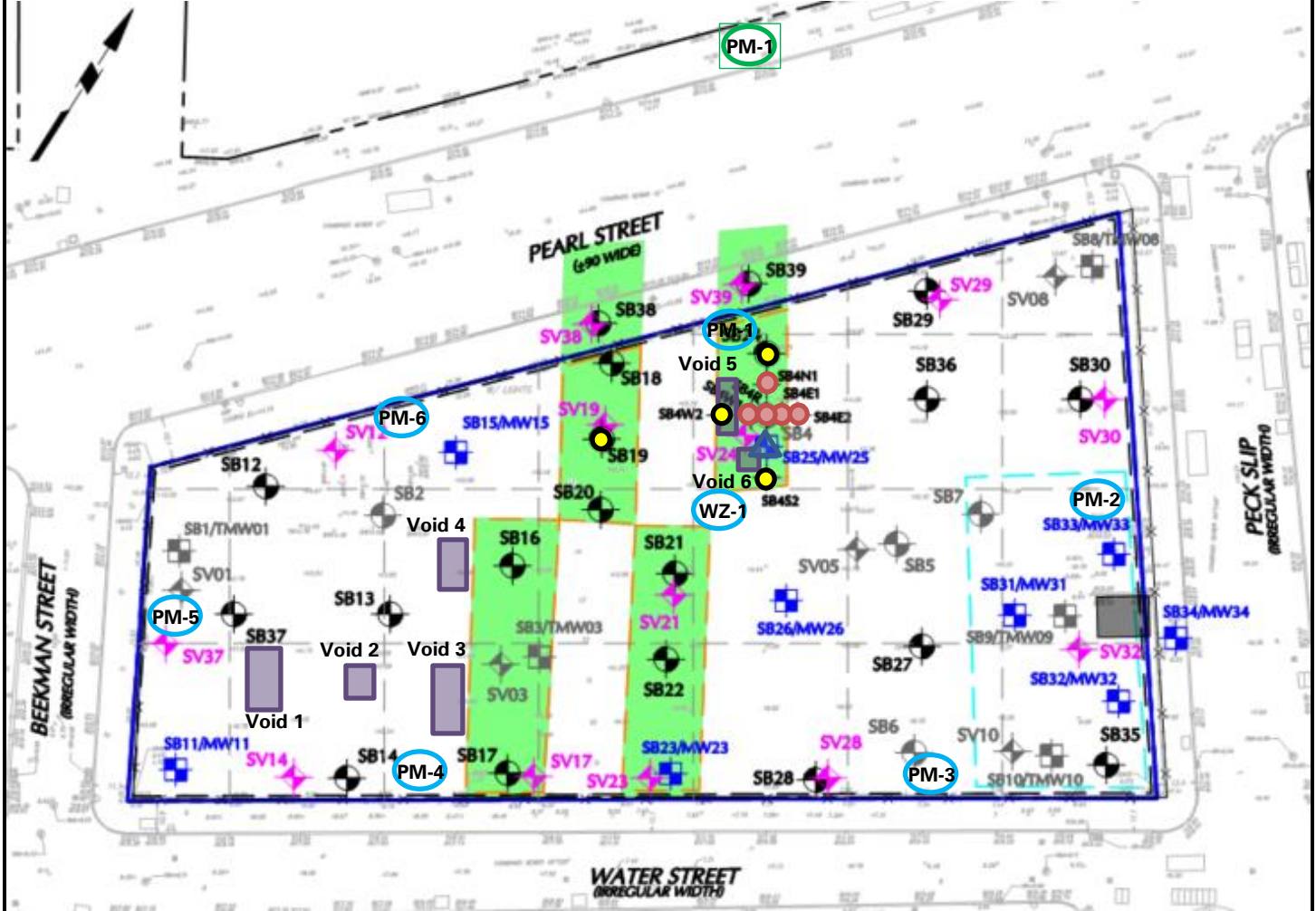
### Anticipated Activities

- AARCO and Langan will continue to advance and sample soil borings and install monitoring wells within the Phase 3 work area.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- Approximate location of previously sampled soil borings
- ▲ Approximate location of previously completed soil borings and monitoring well
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc: J. Yanowitz, P. McMahon, M. Raygorodetsky

By: Adrian Heath

**LANGAN**

## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO advancing soil boring SB24 in the northern part of the site (facing southwest)



Photo 2: View of soil from boring SB4S2

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath <b>LANGAN</b>
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## SITE OBSERVATION REPORT



Photo 3: View of air monitoring station PM-1 while AARCO advances soil boring SB-24 (facing north)



Photo 4: Langan preparing to screen soil for VOCs (facing northwest)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Adrian Heath <b>LANGAN</b>
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## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127	<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Thursday, July 30, 2020  <b>WEATHER:</b> Sunny, 80-92 °F Wind: SSW @ 1.0 mph (9:16am) to S @ 5.6 mph (10:21am)  <b>TIME:</b> 5:45 am – 4:30 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp.		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath
<b>EQUIPMENT:</b> Geoprobe 7822 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX	<b>PRESENT AT SITE:</b> Ashley Stappenbeck, Adrian Heath – Langan Sergio Magana, Jose Romero – AARCO Environmental Services Corp.	
<b>RI Day 8</b>		
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan continued implementing Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Manhattan Block 98, Lot 1).  <b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a Geoprobe 7822 DT drill rig with 4-foot-long Macro-Core® samplers to advance five soil borings. Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples.           <ul style="list-style-type: none"> <li>Boring SB18: Boring was advanced to 20 feet below grade surface (bgs). No petroleum-like odors, staining, or photoionization detector (PID) readings above background were observed. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.21 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) was identified with a Jerome J505 unit from 8 to 10 feet bgs. Total mercury concentrations evaluated with the Niton XL3t XRF (XRF) were less than the limit of detection (LOD).</li> <li>Boring SB20: Boring was advanced to 32 feet bgs. Petroleum-like odors, staining, and PID readings up to 370.4 parts per million (ppm) were observed from 17 to 24 feet bgs. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.03 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 6 to 8 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.</li> <li>Boring SB16: Boring was advanced to refusal at 10 feet bgs. Wood with a creosote-like odor was identified in the cutting shoe at the refusal depth. Four step-off borings were attempted around the original boring location. No petroleum-like odors, staining, or PID readings above background were observed in soil. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.07 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 4 to 6 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.</li> <li>Boring SB21: Boring was advanced to refusal 10 feet bgs. Wood with a creosote-like odor was identified in the cutting shoe at the refusal depth. Four step-off borings were attempted around the original boring location. Petroleum-like odors, staining, and PID readings up to 42.9 ppm were observed from 6 to 8 feet bgs. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration</li> </ul> </li> </ul>		
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Ashley Stappenbeck  <b>LANGAN</b>	

## SITE OBSERVATION REPORT

above background of 0.08 µg/m<sup>3</sup> was identified with a Jerome J505 unit from 8 to 10 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.

- Boring SB22: Boring was advanced to refusal at 9.5 feet bgs. Wood with a creosote-like odor was identified in the cutting shoe at the refusal depth. Three step-off borings were attempted around the original boring location. No petroleum-like odors, staining, or PID readings above background were observed in soil. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.14 µg/m<sup>3</sup> was identified with a Jerome J505 unit from 2 to 4 feet bgs. Total mercury concentrations evaluated with the XRF were less than LOD.
- All soil borings were backfilled with drill cuttings from the borehole, clean sand, and/or bentonite and then patched with cold patch asphalt after sampling was completed.

### Material Tracking

- No material was imported to the site.
- No material was exported from the site.
- Impacted soil cutting from borings SB20 and SB21 were containerized and sealed in a 55-gallon drum; the drum was stored on site for future off-site disposal.

### Sampling

The following samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. (Eurofins) a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP:

- The following sample depths were submitted for analysis of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides, herbicides, metals including mercury and hexavalent and trivalent chromium, total cyanide, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):
  - SB18: 0-2, 7-8, and 18-20 feet bgs
  - SB20: 0-2, 10-12, and 20-22 feet bgs
- The following sample depths were submitted for analysis of VOCs, SVOCs, and metals including mercury and hexavalent and trivalent chromium:
  - SB20: 30-32 feet bgs
- Three quality assurance/quality control soil samples (one field blank, one trip blank, and one equipment blank) were collected and submitted for analysis.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			LANGAN



## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of mercury vapor, particulate matter smaller than 10 microns in diameter (PM10), and VOCs did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.027	0.4	0.1
PM-2	0.036	0.0	0.0
PM-3	0.030	0.0	0.0
PM-4	0.019	0.0	0.0
PM-5	0.018	0.5	0.0
PM-6	0.020	0.0	0.0
WZ-1	0.018	0.3	0.1

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Maximum 15-Minute-Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.035	0.7	0.6
PM-2	0.043	0.0	0.0
PM-3	0.048	0.0	0.1
PM-4	0.030	0.3	0.0
PM-5	0.026	1.6	0.0
PM-6	0.034	0.0	0.0
WZ-1	0.030	0.7	0.3

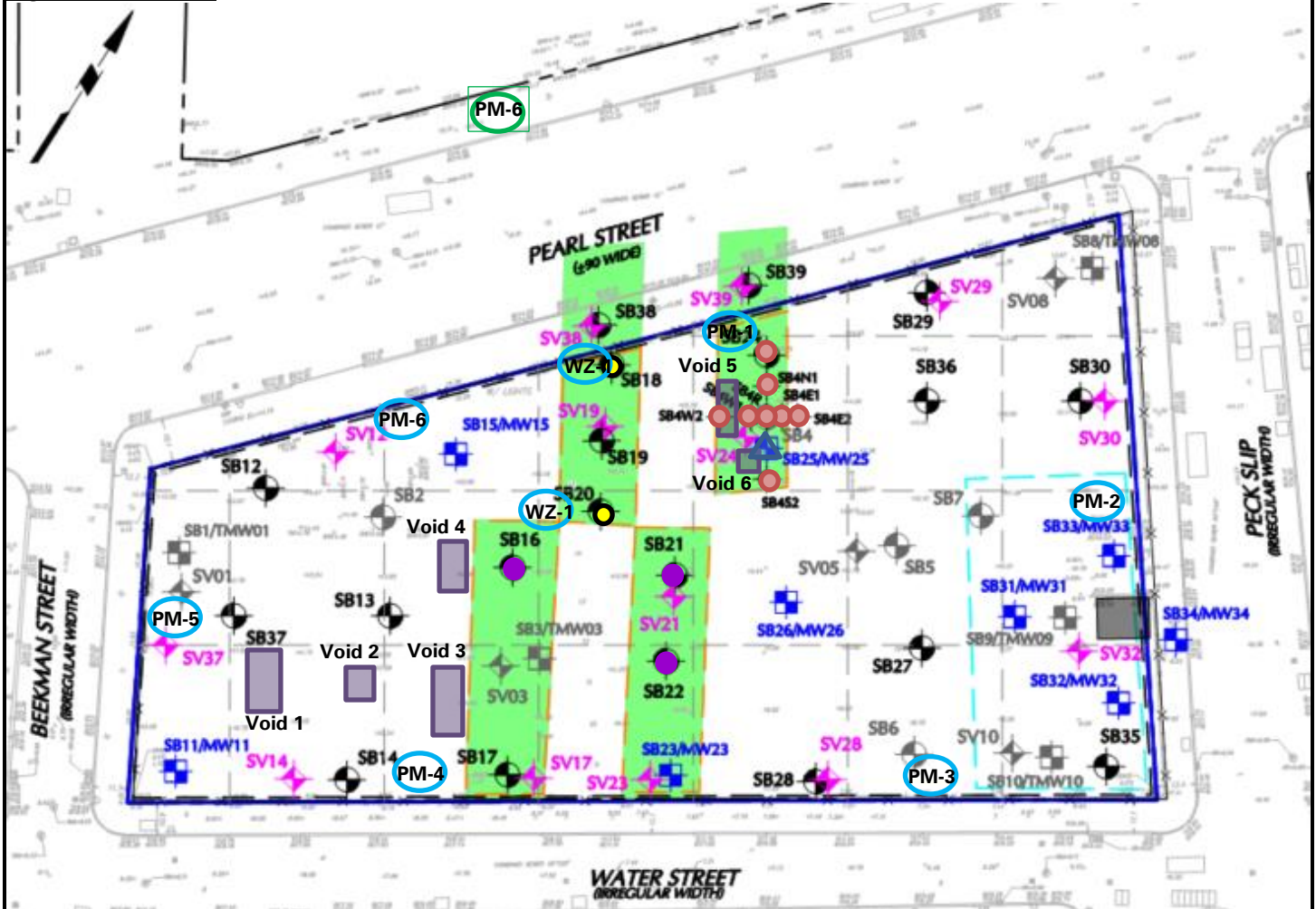
### Anticipated Activities

- AARCO and Langan will continue to advance and sample soil borings and install monitoring wells within the Phase 3 work area.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- Approximate location of previously sampled soil borings
- Approximate location of soil borings advanced to refusal
- ▲ Approximate location of previously completed soil borings and monitoring well
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc: J. Yanowitz, P. McMahon, M. Raygorodetsky

By: Ashley Stappenbeck

**LANGAN**

## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO advancing soil boring SB20 in the northern part of the site (facing north)



Photo 2: View of soil from boring SB18

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT



Photo 3: View of Langan checking air monitoring station WZ-1 while AARCO advances soil boring SB16 (facing south)



Photo 4: View of wood found at refusal depth at boring SB16 (facing northwest)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127	<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Friday, July 31, 2020  <b>WEATHER:</b> Rain/Overcast, 70-85 °F Wind: SSE @ 0.4 mph (7:40am) to E @ 4.0 mph (1:40pm)  <b>TIME:</b> 6:00 am – 4:30 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp.		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath
<b>EQUIPMENT:</b> Geoprobe 7822 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX	<b>PRESENT AT SITE:</b> <b>RI Day 9</b> Ashley Stappenbeck, Adrian Heath – Langan Sergio Magana, Jose Romero – AARCO Environmental Services Corp.	
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan continued implementing Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Manhattan Block 98, Lot 1).  <b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a Geoprobe 7822 DT drill rig with 4-foot-long Macro-Core® samplers to advance three soil borings. Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples for laboratory analysis.             <ul style="list-style-type: none"> <li>Boring SB17: Boring was advanced to 32 feet below grade surface (bgs). Petroleum-like odors, staining, and photoionization detector (PID) readings up to 57.1 parts per million (ppm) were observed from about 9.5 feet to 28 feet bgs. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.14 micrograms per cubic meter (µg/m³) was identified with a Jerome J505 unit from 12 to 14 feet bgs. Total mercury concentrations evaluated with the Niton XL3t XRF (XRF) were less than the limit of detection (LOD).</li> <li>Boring SB23: Boring was advanced to 28 feet bgs. Petroleum-like odors, staining, and PID readings up to 93 ppm were observed from about 6 to 24 feet bgs. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.04 µg/m³ was identified with a Jerome J505 unit from 2 to 4 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.</li> <li>Boring SB22 Re-drill: Additional step-off borings were attempted, and refusal was encountered at 10 feet bgs. Wood or concrete were encountered in the cutting shoe at refusal depths. No petroleum-like odors, staining, or PID readings above background were observed in soil. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.05 µg/m³ was identified with a Jerome J505 unit from 2 to 4 feet bgs. Total mercury concentrations evaluated with the XRF were less than the LOD.</li> </ul> </li> <li>AARCO used a Geoprobe 7822 DT drill rig to install monitoring well MW17.             <ul style="list-style-type: none"> <li>MW17 consists of a 2-inch diameter polyvinyl chloride (PVC) monitoring well with 20-slot well screen from about 7 to 17 feet bgs. MW17 will be developed on Monday August 3, 2020.</li> </ul> </li> </ul>		
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Adrian Heath  <b>LANGAN</b>	

## SITE OBSERVATION REPORT

- All soil borings were backfilled with drill cuttings from the borehole, clean sand, and/or bentonite and then patched with cold patch asphalt after sampling was completed.

### **Material Tracking**

- No material was imported to the site.
- No material was exported from the site.
- Impacted soil cutting from borings SB17 and SB23 were containerized and sealed in a 55-gallon drum; the drum was stored on site for future off-site disposal.

### **Sampling**

The following samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. (Eurofins) a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP:

- The following sample depths were submitted for analysis of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides, herbicides, metals including mercury and hexavalent and trivalent chromium, total cyanide, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):
  - SB17: 0-2, 14-16, and 30-32 feet bgs
  - SB23: 0-2, 9-11, and 26-28 feet bgs
- Four quality assurance/quality control soil samples (one equipment blank, one trip blank, one equipment blank, and soil duplicate) were collected and submitted for analysis.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of mercury vapor, particulate matter smaller than 10 microns in diameter (PM10), and VOCs did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.014	0.0	0.0
PM-2	0.023	0.0	0.0
PM-3	0.016	0.0	0.0
PM-4	0.010	0.0	0.0
PM-5	0.011	0.8	0.0
PM-6	0.009	0.0	0.0
WZ-1	0.010	0.0	0.0

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Maximum 15-Minute-Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.018	0.0	0.0
PM-2	0.032	0.0	0.0
PM-3	0.021	0.0	0.3
PM-4	0.021	1.1	0.0
PM-5	0.017	1.7	0.0
PM-6	0.020	0.0	0.0
WZ-1	0.023	0.0	0.0

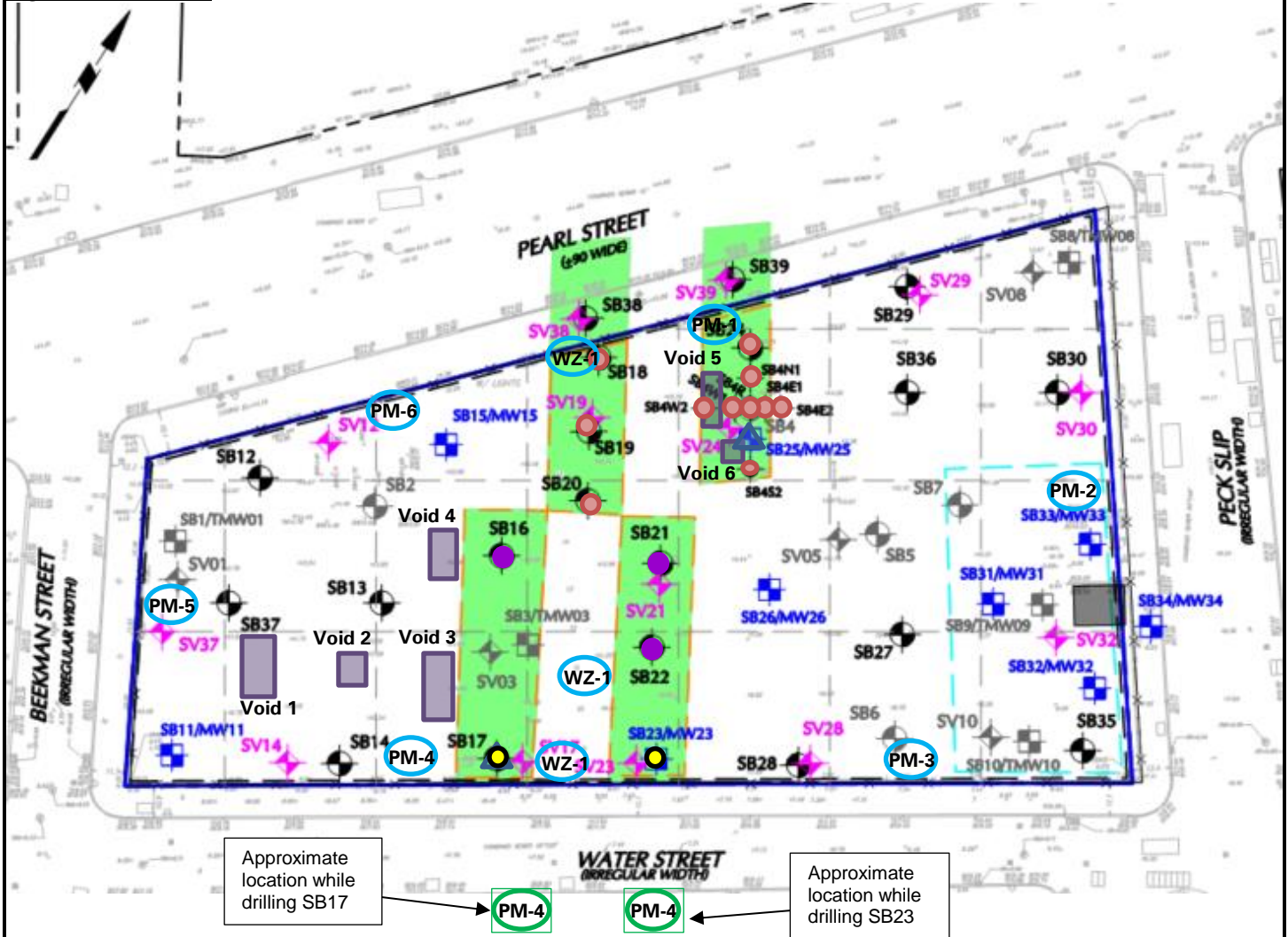
### Anticipated Activities

- AARCO and Langan will continue to advance and sample soil borings and install soil vapor pins within the Phase 3 work area.
- Langan will sample soil vapor points and develop monitoring wells within the Phase 3 work area.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- Approximate location of previously sampled soil borings
- Approximate location of soil borings advanced to refusal
- ▲ Approximate location of completed monitoring well
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO advancing soil boring SB17 in the southern part of the site (facing south)



Photo 2: AARCO installing monitoring well MW17 (facing northwest)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT



Photo 3: Work zone station WZ-1 and perimeter station PM-4 while AARCO advances boring SB-23 (facing south)



Photo 4: AARCO advancing SB-23 (facing southeast)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT

<b>PROJECT No.:</b> 170381202  <b>PROJECT:</b> 250 Water Street  <b>LOCATION:</b> New York, NY  <b>BCP SITE ID:</b> C231127	<b>CLIENT:</b> 250 Seaport District, LLC	<b>DATE:</b> Monday, August 3, 2020  <b>WEATHER:</b> Sunny, 80-92 °F Wind: E @ 0.6 mph (8:50am) to E @ 7.6 mph (2:11pm)  <b>TIME:</b> 6:00 am – 5:30 pm
<b>CONTRACTOR:</b> AARCO Environmental Services Corp. (AARCO)		<b>LANGAN REP. :</b> Ashley Stappenbeck Adrian Heath
<b>EQUIPMENT:</b> Geoprobe 7822 DT Niton XL3t XRF Jerome J505 and J405 MiniRAE 3000 Dusttrak DRX Post Hole Digger	<b>PRESENT AT SITE:</b> Ashley Stappenbeck, Adrian Heath, Michael Aldoroty – Langan Sergio Magana, William Edom – AARCO Environmental Services Corp. Brian Ehalt – EXCEL Environmental Resources	
<b>RI Day 10</b>		
<b>OBSERVATIONS, DISCUSSIONS, TEST RESULTS, ETC.:</b>  Langan completed implementing Phase 3 of the May 13, 2020 Remedial Investigation Work Plan (RIWP) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site No. C231127 located at 250 Water Street (Manhattan Block 98, Lot 1).  <b>Site Activities</b> <ul style="list-style-type: none"> <li>AARCO used a core drill and post hole digger to drill through the Pearl Street sidewalk and hand clear two borings to 5 feet below grade surface (bgs). AARCO then used a Geoprobe 7822 DT drill rig with 4-foot-long Macro-Core® samplers to advance two soil borings. Langan documented the work, screened the soil samples for environmental impacts, and collected soil samples.             <ul style="list-style-type: none"> <li>Boring SB38: Boring was advanced to 24 feet bgs. No petroleum-like odors, staining, or photoionization detector (PID) readings above background were observed in soil. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.51 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) was identified with a Jerome J505 unit from 2 to 4 feet bgs. Total mercury concentrations evaluated with the Niton XL3t XRF (XRF) were less than the limit of detection (LOD).</li> <li>Boring SB39: Boring was advanced to 28 feet bgs. No petroleum-like odors, staining, or PID readings above background were observed in soil. Visual evidence of elemental mercury was not identified. A maximum mercury vapor concentration above background of 0.57 <math>\mu\text{g}/\text{m}^3</math> was identified with a Jerome J505 unit from 6 to 8 feet bgs. Total mercury concentrations were detected with the XRF at concentrations of 22 parts per million (ppm) from 6 to 8 feet bgs and 24 ppm from 8 to 10 feet bgs.</li> </ul> </li> <li>AARCO installed soil vapor probes in predrilled soil borings. After installation and prior to sampling, the sample tubing was purged with a MultiRAE and a mercury vapor reading was taken with a Jerome J505:             <ul style="list-style-type: none"> <li>Soil vapor probe SV38 was installed to about 15 feet bgs. A maximum PID reading of 0.9 ppm and a maximum mercury vapor concentration of 0.09 <math>\mu\text{g}/\text{m}^3</math> were observed.</li> <li>Soil vapor probe SV39 was installed to about 15 feet bgs. A maximum PID reading of 2.5 ppm and a maximum mercury vapor concentration of 0.07 <math>\mu\text{g}/\text{m}^3</math> were observed.</li> </ul> </li> </ul>		
<b>Cc:</b> J. Yanowitz, P. McMahon, M. Raygorodetsky	<b>By:</b> Adrian Heath	<b>LANGAN</b>

## SITE OBSERVATION REPORT

- All soil borings were backfilled with drill cuttings from the borehole, clean sand, and/or bentonite and then patched with cold patch asphalt after sampling was completed.
- AARCO developed previously installed monitoring wells MW17 and MW25.

### **Material Tracking**

- No material was imported to the site.
- No material was exported from the site.
- No investigation derived waste (i.e. soil cutting or groundwater) was generated during site activities.

### **Sampling**

Soil samples were collected and relinquished to Eurofins Lancaster Laboratories Environmental, Inc. (Eurofins) a New York State Department of Environmental Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory in Lancaster, Pennsylvania (ELAP No. 10670) for analyses proposed in the RIWP:

- The following sample depths were submitted for analysis of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides, herbicides, metals including mercury and hexavalent and trivalent chromium, total cyanide, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):
  - SB38: 0-2, 6-8, and 22-24 feet bgs
  - SB39: 0-2, 8-10, and 18-20 feet bgs
- Four quality assurance/quality control soil samples (one PFAS equipment blank, one trip blank, one matrix spike/matrix spike duplicate [MS/MSD], and soil duplicate) were collected and submitted for analysis.

Soil vapor samples were collected and relinquished to Alpha Analytical, Inc, a NYSDOH ELAP-certified laboratory in Westborough, Massachusetts (ELAP No. 11148) for analyses proposed in the RIWP.

- SV38 and SV39: Two, two-hour soil vapor samples were collected in 6-liter summa canisters and in sorbent tubes for analyses by Alpha Analytical, Inc. for VOCs by USEPA Method TO-15 and for mercury vapor by NIOSH Method 6009.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT

### CAMP Activities

Langan performed air monitoring during ground-intrusive activities. Fifteen-minute average concentrations of mercury vapor, particulate matter smaller than 10 microns in diameter (PM10), and VOCs did not exceed action levels for the duration of work activities. Daily background concentrations for PM10, VOCs, and mercury vapor based on the June 16, 2020 baseline air monitoring event were 0.025 milligrams per cubic meter (mg/m<sup>3</sup>) for PM10, 0.5 ppm for VOCs, and 0.0 µg/m<sup>3</sup> for mercury vapor.

Daily Average Concentrations			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.012	0.3	0.1
PM-2	0.024	0.0	0.0
PM-3	0.010	0.1	0.0
PM-4	0.009	0.0	0.0
PM-5	0.008	0.8	0.0
PM-6	0.008	0.0	0.0
WZ-1	0.001	0.4	0.0

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Maximum 15-Minute-Average Concentration			
Station ID	Particulate (mg/m <sup>3</sup> )	Organic Vapor (ppm)	Mercury Vapor (µg/m <sup>3</sup> )
PM-1	0.016	0.7	0.3
PM-2	0.034	0.0	0.0
PM-3	0.018	0.2	0.1
PM-4	0.042	0.0	0.0
PM-5	0.019	1.4	0.1
PM-6	0.013	0.0	0.0
WZ-1	0.009	0.7	0.1

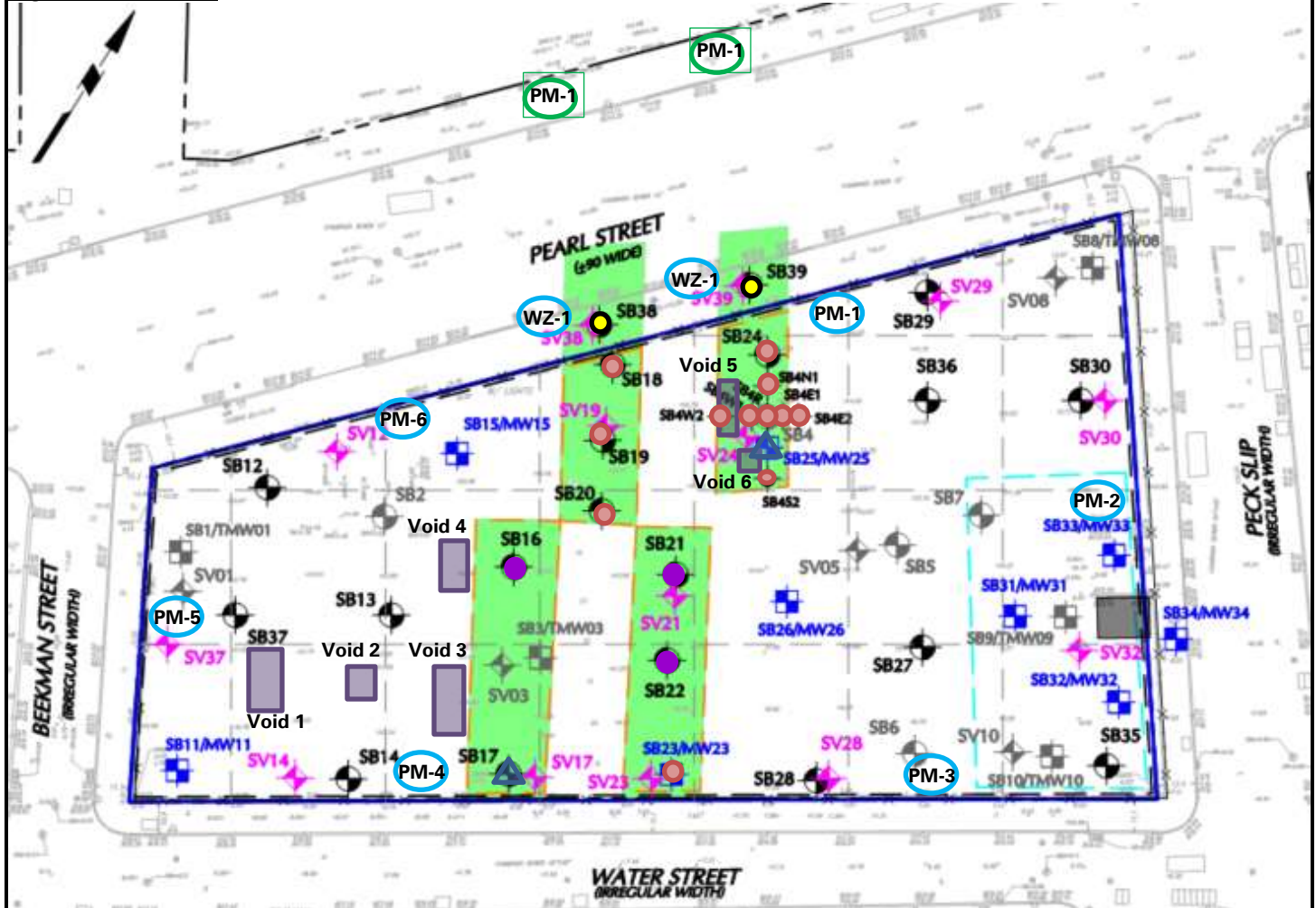
### Anticipated Activities

- Tomorrow, AARCO will cement patch soil vapor points SV38 and SV39.
- Phase 4 of the RIWP (soil sampling) is anticipated to be scheduled and initiated after the Phase 3 results are evaluated.

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck
			<b>LANGAN</b>

## SITE OBSERVATION REPORT

Figure 1: Site Map



### Legend:

- Site Boundary
- Approximate area of suspected void space
- Approximate location of soil borings sampled
- Approximate location of previously sampled soil borings
- Approximate location of soil borings advanced to refusal
- ▲ Approximate location of completed soil borings and monitoring well
- PM-1 Approximate location of air monitoring station (on-site)
- PM-1 Approximate location of air monitoring station (off-site)
- WZ-1 Approximate locations of work zone air monitoring station

### Notes:

- 1) Air monitoring station were relocated based on work area and wind direction. Locations shown above identify the predominant area of the air monitoring station.

Cc: J. Yanowitz, P. McMahon, M. Raygorodetsky

By: Ashley Stappenbeck

**LANGAN**

## SITE OBSERVATION REPORT

### Select Site Photographs:



Photo 1: AARCO developing monitoring well MW17 in the southern part of the site (facing south)



Photo 2: AARCO hand clearing soil boring SB38 (facing northwest)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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## SITE OBSERVATION REPORT



Photo 3: View of Langan collecting a mercury vapor sample at SV39 (facing south)



Photo 4: AARCO advancing boring SB39 (facing east)

Cc:	J. Yanowitz, P. McMahon, M. Raygorodetsky	By:	Ashley Stappenbeck <b>LANGAN</b>
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