

TECHNICAL MEMORANDUM

DATE: May 30, 2018

TO: Mr. Rehman Nazerali; Onni Group
Mr. Jordan McLure; Onni Group

FROM: Mr. Eric Koltes, L.G.
Mr. Charles McFadden

RE: Technical Memorandum
Supplemental Investigation
Former Seattle Times
1120 John Street
Seattle, Washington

EPI Project Number: 65602.6

Environmental Partners, Inc. (EPI) is pleased to submit this Technical Memorandum (TM) describing a supplemental investigation (SI) performed at the Former Seattle Times property located at 1120 John Street in Seattle, Washington (subject property, see Figure 1). It is EPI's understanding that the property is currently under development by the Onni Group (Onni) as an office/commercial structure with approximately 50 feet of subgrade parking. During the SI described herein, the facility was partially demolished. Some areas of the property were not fully accessible due to the remaining infrastructure at the time of the investigation.

A brief summary of the subject property background, objectives, methodology, findings, and an updated rough order of magnitude (ROM) cost for future actions are described below.

The principal objectives of the work described herein were to collect data sufficient to address comments from Onni's lending partner, Bank of America (BoA), and to collect data sufficient to prepare a Remedial Investigation Report consistent with the requirements detailed in the Model Toxics Control Act (70.105D RCW) and its implementing regulations (WAC 173-340; collectively referred to as "MTCA"). BoA's comments are detailed below.

BACKGROUND

EPI conducted a subsurface investigation at the subject property in September 2012 and April 2013. The specific results of that investigation are documented in EPI's *Limited Subsurface Investigation Report* (LSI) dated August 16, 2013, which is included as Attachment A. During the LSI investigation, 10 Areas of Potential Concern (AOPCs) were investigated and are depicted on Figure 2. In addition to the investigation of the 10 AOPCs, the investigation also included a screen of the regional aquifer at the property. The areas investigated included:

- AOPC 1: Printing Press Areas
- AOPC 2: Interior Tanks (centrally located)
- AOPC 3: Ink Room (adjacent to shop in the northwest corner)
- AOPC 4: Compressor Room
- AOPC 5: Northern UST Complex and Dispenser
- AOPC 6: Waste Oil UST
- AOPC 7: Heating Oil UST (in the office area)
- AOPC 8: Heating Oil USTs (south centrally located alleyway)
- AOPC 9: Hoists (located in maintenance garage)
- AOPC 10: Sumps (located throughout the facility)
- Regional Groundwater

Sampling and analysis confirmed impacts at concentrations exceeding potentially applicable cleanup levels in the areas described below:

AOPC 2 (interior Tank Area)

Soil impacts were not identified in AOPC 2.

Impacts to sump water exceeded the MTCA Method A Cleanup Levels for Groundwater (Method A GW CULs) in AOPC 2 for diesel- and oil-range organics (DRO and ORO). Further assessment was required to identify a potential source of water impacts and delineate impacts to water.

AOPC 4 (Compressor Room)

Impacts to soil exceeding MTCA Method A Soil Cleanup Level for Unrestricted Land Uses (Method A Soil CULs) were identified in AOPC 4 by polychlorinated biphenyls (PCBs). The likely source of this impact was the use of PCB-containing oils for mechanical equipment (i.e., compressors).

ORO impacts to sump water exceeding Method A GW CULs were also identified in AOPC 4. The likely source of these impacts is an ORO subsurface release from the former underground storage tanks (USTs) in the adjacent AOPC 8. Further assessment was required to fully delineate soil and water impacts in this AOPC.

AOPC 5 (Northern UST Complex and Dispenser)

Petroleum impacts to soil exceeding Method A Soil CULs were documented in AOPC 5. As reported in the LSI, EPI reviewed a report by Ecova in 1990 that documented the removal of a UST in the southwest corner of the loading dock area in AOPC 5. That report documented residual hydrocarbons as being left in place. The likely source of these impacts may be a petroleum-based subsurface release at the subject property. Further assessment was needed to fully delineate soil impacts in this AOPC.

Trichloroethene (TCE) impacts to groundwater exceeding Method A GW CULs were identified in AOPC 5. The likely source of this impact is the Troy Laundry Site adjacent to the north. Further assessment was required to delineate soil and groundwater impacts in this AOPC.

AOPC 8 (Heating Oil USTs)

Petroleum impacts to soil exceeding Method A Soil CULs were documented in AOPC 8. Further assessment was required to fully delineate soil impacts in this AOPC.

Regional Groundwater

Impacts to the regional groundwater aquifer exceed Method A GW CULs for the following chlorinated volatile organic compounds (cVOCs):

- Tetrachloroethene (PCE);
- TCE;
- Vinyl chloride.

In addition to the cVOCs, total chromium was identified at a concentration exceeding the MTCA Method A GW CUL. Dissolved chromium was in compliance with the MTCA Method A CUL. Therefore, the total chromium detection was likely due to turbid water conditions and not a result of a release to the environment. Accordingly, chromium is not considered a COC for the site.

The likely source of the cVOC impacts to groundwater is the Troy Laundry Site adjacent to the north. Further assessment was needed to fully delineate the presence of cVOC impacts.

In addition, Onni provided the LSI Report to BoA (a potential lending partner to Onni) for review. BoA had the following comments:

- Previous assessments (conducted by others) identified residual petroleum soil impacts near the southwest corner of loading dock. Although regulatory closure was issued for the presumed source (former UST), it appears residual soil impacts exceed applicable residential action levels. The area of impacted soil has not been fully delineated and remedial costs are unknown. Further assessment would be necessary to fully delineate and quantify these impacts.
- Groundwater samples collected within AOPC 5 (sample U6) and along the northern property border (MW-3) contained concentrations of chlorinated VOCs, including TCE and PCE, exceeding regulatory action levels. The source and extent of the chlorinated solvent impacts have not been defined and a vapor intrusion concern may be present. Further assessment would be necessary to fully delineate and quantify these impacts.
- Elevated TPH DRO and GRO concentrations were identified within sump water sample S-5, at concentrations exceeding regulatory action levels within AOPC 2 (Interior Ink Tanks). No soil or groundwater sampling was completed in this area. Further assessment would be necessary to fully delineate and quantify potential impacts
- AOPC 4 (Compressor Room) was evaluated by shallow soil sampling at depths less than 1-foot below ground surface (bgs). No deeper samples were collected, and full delineation

was not determined. Additional assessment would be necessary to fully delineate and quantify these impacts.

- Borings exhibited ORO at concentrations greater than regulatory action levels at two boring locations indicating petroleum release within AOPC8 (Heating Oil USTs). Extent of impacts have not been defined. Additional assessment would be necessary to fully delineate and quantify these impacts.

The objectives described herein were designed in an attempt to fill in each of the data gaps presented by BoA and to collect data sufficient to complete a MTCA-compliant Remedial Investigation and Feasibility Study for the subject property.

OBJECTIVES

The general objective of this supplemental investigation was to assess the vertical and horizontal limits of contamination previously identified in EPI's LSI Report dated August 16, 2013 and to meet BoA's request for additional information.

Specific objectives included:

- Collecting soil and groundwater samples through standard hollow-stem auger (HSA) drilling techniques;
- Analysis of samples for appropriate compounds of concern (COCs) applicable to each AOPC;
- Data analysis to determine if any data gaps remain in the site characterization for a MTCA-compliant Remedial Investigation (RI); and
- Use the available data to update an order-of-magnitude cost estimate previously provided to Onni.

METHODOLOGY

The methodology for evaluating the subsurface to delineate the horizontal and vertical limits of contamination previously identified was to use HSA drilling techniques to advance borings for collection of soil samples, installation of groundwater monitoring wells, and collection of reconnaissance groundwater samples from temporary wells. A total of 23 borings were completed during the supplemental investigation.

Borings advanced included the installation of two deep groundwater monitoring wells to assess the deeper regional groundwater. Both of the deep groundwater monitoring wells were installed to a depth of 105 feet bgs.

The remaining 21 borings were advanced to depths ranging from refusal at 9 feet bgs to 35 feet bgs. Reconnaissance groundwater samples were collected from the shallow discontinuous groundwater table at 10 of the total 23 borings. Boring locations are depicted on Figure 3.

Soils were field screened using visual and olfactory methods, sheen testing, and photoionization detector (PID) measurements. EPI field screened all locations and submitted samples for laboratory analysis from all borings. Soil was sampled at 5-foot intervals for logging purposes. Boring logs for each boring installed during the supplemental investigation are included as Attachment B.

All soil and groundwater samples were transported in an iced cooler and submitted to Friedman & Bruya, Inc. (FBI), a fixed-base Washington State accredited analytical laboratory located in Seattle, Washington, under chain-of-custody procedures. The soil and groundwater samples were analyzed for COCs applicable to each AOPC, COC analytical methods are referenced in their respective analytical tables. A table of requested analyses is included in Table 1.

FINDINGS

The following sections describe the findings of the supplemental investigation

Subsurface Conditions

Soil

Subsurface soil conditions at the subject property varied depending on the AOPC investigated and the depth explored. In general, shallow soils consisted of approximately structurally-supportive, non-native sub-base materials, and it was not uncommon to observe concrete rubble prior to native soils. Native soils located beneath the sub-base material generally consisted of silty-sand mixtures and poorly-graded sands with gravel and silt, down to the maximum depth explored. The native soils are typical of glacial till, which is common in the area of the subject property.

Groundwater

A regional groundwater aquifer is present at an approximate depth of 85 to 101 feet bgs. According to reports reviewed for the northern adjacent property, the regional aquifer flows towards the west-southwest. In addition to the regional groundwater table, there are also laterally discontinuous thin lenses of perched shallow groundwater encountered at depths ranging from about 15 to 20 feet. The shallow groundwater is entrained within sandy lenses of the glacial till at the subject property and are estimated to be less than 5 feet thick. This water-bearing unit was not observed in all borings exceeding a depth of 20 feet bgs, but was generally more prevalent on the northern portion of the property. These water-bearing lenses are typically very low yield and rarely require dewatering during development such as that planned for the subject property.

AOPC 2 (interior Tank Area)

A total of five borings were advanced near the former location of the interior tanks in AOPC 2. The boring locations are depicted on Figures 3 through 5. A total of nine soil and four groundwater samples from

AOPC 2 were submitted for laboratory analysis as indicated in Table 1. The analytical results for soil samples are summarized in Table 2 and the analytical results for groundwater samples are summarized in Table 3. A copy of the original laboratory report is included as Attachment C.

Soil Results

GRO were detected in soil in one of the nine samples with a concentration of 5.8 milligrams/kilogram (mg/kg). The detected concentrations of GRO were less than the Method A Soil CUL of 30 mg/kg.

DRO were detected in one of the nine samples with a concentration of 360 mg/kg. The detected concentrations of DRO were less than the Method A Soil CUL of 2,000 mg/kg.

No other COCs were detected at concentrations exceeding the detection limit of the analytical methods used in any other soil samples submitted for analysis.

Groundwater Results

DRO were detected in all four of the groundwater samples submitted from AOPC 2 for analysis. Their concentrations range from 170 mg/kg to 1,900 mg/kg. Samples at locations T-4 and T-5 exceed the Method A GW CUL for DRO of 500 micrograms/liter ($\mu\text{g/L}$).

ORO were detected in two of the four samples submitted. Their concentrations range from 420 to 1,200 $\mu\text{g/L}$. The sample from location T-5 exceeded the Method A GW CUL for ORO of 500 $\mu\text{g/L}$.

Locations of groundwater samples exceeding CULs are depicted on Figure 5.

No other COCs were detected at concentrations exceeding the detection limit of the analytical methods used in any other groundwater samples submitted for analysis.

AOPC 2 Conclusions

Based on the data collected during the LSI and during this follow-up supplemental investigation, no impacts to soil were identified in the AOPC 2 area that require remediation. However, special handling and disposal will be required for impacts to soil where COCs were detected, but at concentrations less than the CUL. Based on the data collected, approximately 1,280 tons of soil from AOPC 2 will require special handling and disposal during redevelopment activities. This includes an estimate of approximately 850 tons plus a 50 percent contingency.

Based on groundwater data collected from AOPC 2, there appears to be DRO and ORO impacts exceeding Method A GW CULs. If any groundwater requires removal during construction, special handling and disposal will be required. It is anticipated that any such impacted groundwater collected during dewatering can be disposed to the sanitary sewer under a Minor Discharge Authorization with King County Industrial Waste.

AOPC 4 (Compressor Room)

A total of five borings were advanced near the compressor room in AOPC 4. Boring locations are depicted on Figures 3 through 5. Note that one of the borings (A-5/C-20) was a split purpose boring to assess AOPC 4 and AOPC 8. A total of nine soil samples from AOPC 4 were submitted for laboratory analysis as indicated in Table 1. Analytical results are summarized on Table 4.

Soil Results

PCBs were detected in two samples (C-17 and C-18) at concentrations of 0.055 mg/kg and 0.11 mg/kg, respectively. These concentrations are less than the Method A Soil CUL of 1 mg/kg.

Locations of soil samples exceeding CULs are depicted on Figure 4. This figure includes sampling locations from AOPC 4 that were collected during the LSI.

AOPC 4 Conclusions

Based on the data collected during the LSI and during this follow-up supplemental investigation, impacts to soil surrounding sampling locations C-2 and C-12 from the LSI appear to be delineated and no further assessment in AOPC 4 is required. Impacted soil in AOPC 4 will require remediation during redevelopment. Based on the data collected, approximately 300 tons of soil from AOPC 4 will require special handling and disposal during redevelopment activities. This includes an estimate of approximately 200 tons plus a 50 percent contingency.

AOPC 5 (Northern UST Complex and Fuel Dispenser)

A total of seven borings were advanced near the Northern UST Complex and Fuel Dispenser area in AOPC 5. Boring locations are depicted on Figures 3 through 5. A total of 14 soil samples and 6 groundwater samples were submitted from borings advanced in AOPC 5 for laboratory analysis, as indicated in Table 1. The analytical results for soil samples are summarized in Table 2 and the analytical results for groundwater samples are summarized in Table 3. A copy of the original laboratory report is included as Attachment C.

Soil Results

GRO were detected in two soil samples (U-11:20 and U-12:20) at concentrations of 12 mg/kg and 940 mg/kg, respectively. The concentration of 940 mg/kg at location U-12 exceeds the Method A Soil CUL of 30 mg/kg.

DRO was detected in one soil sample (U-12) at a concentration of 2,100 mg/kg. The concentration of 2,100 mg/kg exceeds the Method A Soil CUL of 2,000 mg/kg.

A total of total of 14 VOCs were detected at concentrations greater than their compound-specific method detection limits (MDLs). Benzene was detected in samples U-11 and U-12 at concentrations of 0.15 mg/kg and 0.33 mg/kg, respectively. Both of these concentrations exceed the Method A Soil CUL of 0.03 mg/kg.

Locations of soil samples exceeding CULs are depicted on Figure 4. This figure includes sampling locations from AOPC 5 that were collected during the LSI.

No other COCs were detected at concentrations exceeding the detection limit of the method used in any other soil samples submitted for analysis.

Groundwater Results

GRO were detected in two groundwater samples (U-11 and U-12) at concentrations of 6,400 µg/L and 37,000 µg/L. These concentrations exceed the Method A GW CUL of 800 µg/L.

DRO were detected in all six groundwater samples submitted for laboratory analysis from AOPC 5. These concentrations range from 230 µg/L to 6,700 µg/L. Samples collected from locations U-10, U-11, U-12, and U-15 exceed the Method A GW CUL of 500 µg/L.

ORO were detected in five of the six groundwater samples submitted for laboratory analysis from AOPC 5. These concentrations range from 390 µg/L to 4,700 µg/L. Samples from locations U-10, U-11, and U-15 exceed the Method A GW CUL of 500 µg/L.

A total of total of 17 VOCs were detected at concentrations greater than their compound-specific MDLs. TCE was detected at location U-13 at a concentration of 7.9 µg/L, which exceeds the Method A GW CUL of 5.0 µg/L. Total xylenes were detected at a concentration of 5,800 µg/L from location U-12, which exceeds the Method A GW CUL of 1,000 µg/L. Naphthalene was detected at a concentration of 570 µg/L, which exceeds the Method A GW CUL of 160 µg/L. All other detected VOCs in groundwater were detected at concentrations less than their respective Method A GW CUL.

Locations of groundwater samples exceeding CULs are depicted on Figure 5. This figure includes sampling locations from AOPC 5 that were collected during the LSI.

AOPC 5 Conclusions

Based on the data collected during the LSI and during this follow-up supplemental investigation, impacts to soil in AOPC 5 appear to be delineated and no further assessment in AOPC 5 is required.

Impacted soil in AOPC 5 will require special handling and disposal during redevelopment. Based on the data collected, approximately 10,720 cubic yards of soil from AOPC 5 will require special handling and disposal during redevelopment activities. This includes an estimate of approximately 7,150 tons plus a 50 percent contingency.

Based on groundwater data collected from AOPC 5, there appears to be impacts of the following COCs at concentrations exceeding MTCA Method A CULs:

- GRO;
- DRO;
- ORO;
- PCE,

- TCE,
- Total xylenes; and
- Naphthalenes.

Although generally well characterized, additional sampling for shallow water may be necessary to complete an RI for the subject property. However, this is not expected to impact the results of the cost estimate described below. Shallow groundwater is discontinuous and entrained within thin sandy lenses of higher porosity than the silts that make up the majority of the till. These lenses are estimated to be less than 5 feet in thickness and typically have very low yield. Such water-bearing lenses rarely require dewatering during development such as that planned for the subject property.

However, if any water requires removal during construction, special handling and disposal will be required. As stated above, it is anticipated that any such impacted water collected during dewatering can be disposed to the sanitary sewer under a Minor Discharge Authorization with King County Industrial Waste.

AOPC 8 (Heating Oil USTs)

A total of five borings were advanced near the Heating Oil USTs in AOPC 8. Note that one of the borings advanced (A-5/C-20) was a split purpose boring to assess AOPC 4 and AOPC 8. Boring locations are depicted on Figures 3 through 5. A total of 10 samples from borings advanced in AOPC 8 were submitted for laboratory analysis as indicated in Table 1. The analytical results for soil samples are summarized in Table 2. A copy of the original laboratory report is included as Attachment C.

Soil Results

Neither DRO or ORO were detected in any sample at a concentration exceeding the detection limit of the analytical method.

Locations of soil samples exceeding CULs during the LSI and the SI borings are depicted on Figure 4.

AOPC 8 Conclusions

Based on the data collected during the LSI and during this follow-up supplemental investigation, impacts to soil surrounding sampling locations A-1 and A-3 from the LSI appear to be delineated and no further assessment in AOPC 8 is required. It should be noted that due to the configuration of the remaining infrastructure, it was not possible to advance borings immediately to the east and west of the former USTs. This is not expected to alter the conclusions of the investigations performed. The former USTs are located in an area of elevated soils where subsurface walls and infrastructure to the east and west would limit the migration of any impacts to soil.

Impacted soil in AOPC 8 will require remediation during redevelopment. Based on the data collected, approximately 2,760 tons of soil from AOPC 8 will require special handling and disposal during redevelopment activities. This includes an estimate of approximately 1,840 tons plus a 50 percent contingency.

Regional Groundwater Assessment

EPI installed two deep regional groundwater monitoring wells to assess the previously identified impacts of chlorinated VOCs (cVOCs) in groundwater, this included TCE and PCE exceeding MTCA Method A CULs at location MW-2. The locations of all monitoring wells installed at the property are depicted on Figures 3 through 5. EPI submitted a groundwater sample from MW-4 and MW-5 for analysis as indicated in Table 1. The analytical results for these groundwater samples are summarized in Table 3. A copy of the original laboratory report is included as Attachment C.

Groundwater Results

Benzene was detected at a concentration of 0.47 $\mu\text{g/L}$ in the groundwater sample from MW-4. This concentration is less than the Method A GW CUL of 5.0 $\mu\text{g/L}$.

Toluene was detected in both groundwater samples (MW-4 and MW-5) at concentrations of 1.1 $\mu\text{g/L}$ and 1.2 $\mu\text{g/L}$, respectively. These concentrations are less than the Method A GW CUL of 1,000 $\mu\text{g/L}$.

No other VOCs were detected at concentrations exceeding the detection limit of the method used.

Regional Groundwater Assessment Conclusion

Based on the data collected during the LSI and during this follow-up supplemental investigation, VOC impacts to groundwater at sampling locations MW-2 from the LSI appear to be delineated and no further assessment of the regional groundwater aquifer is necessary.

Based upon known hydraulic conditions surrounding the subject property and the available data, it is reasonable to conclude that the source for these impacts appears to be the Troy Laundry Site adjacent to the north. No known source of VOCs was identified at the subject property.

REMAINING DATA GAPS

Based on the data collected during the LSI and the SI, impacts to soil requiring remediation have been generally well characterized to the extent practical. Please note that while some sampling locations appear to have been less than ideal, borings were placed in locations where subsurface conditions allowed drilling. Due to rebar and large subsurface rubble, multiple attempts to advance borings were required due to refusal and it was not always possible to sample in ideal locations.

The only remaining data gap in order to present a MTCA-compliant RI relates to impacts to shallow groundwater. Although the shallow groundwater is discontinuous in nature and it is not an expected condition, additional sampling will likely be required in order to define the lateral extents of impacts to shallow perched groundwater and demonstrate that impacts do not extend off-site to the south and east. Regardless, this finding is not expected to have a large impact on the order-of-magnitude cost estimate. Shallow aquifers of this type in till rarely produce enough water to require dewatering and therefore should not represent a large cost to the project.

Please note that a source for DRO and ORO impacts to shallow groundwater were not identified during the investigation performed. Although a reasonable investigation has been performed, due to the long-term history of the subject property, there exists the possibility of encountering unknown minor releases of hazardous materials.

ORDER-OF-MAGNITUDE COST ESTIMATE

Based on the data collected during the LSI and the supplemental investigation, remediation will be required for soil in the following AOPCs:

- AOPC 4 (Compressor Room);
- AOPC 5 (Northern UST Complex and Fuel Dispenser); and
- AOPC 8 (Heating Oil USTs).

In addition, although remediation is not required, special handling and disposal will be required for soils in the following AOPCs:

- AOPC 2 (Interior Tank Area); and
- AOPC 9 (Hoists; please see the LSI report regarding data from this AOPC location).

The areas of impact in each of these areas and estimated depths are presented on Figure 6.

Based upon the information provided in the LSI and the supplemental investigation documented herein, EPI has prepared a rough order-of-magnitude (ROM) cost estimate to address these impacts during development and pursue a no further action (NFA) designation from the Washington State Department of Ecology (Ecology) through the Voluntary Cleanup Program (VCP). The ROM cost is detailed in Table 5.

The costs detailed in Table 5 are a ROM cost estimate based on the information known to date. These cost estimates are not a bid to perform the work, nor are they binding on EPI in any way; further, EPI provides no warranty, express or implied, as to the ultimate accuracy of said cost estimates. These cost estimates have been prepared at the request of our client based upon EPI's previous experience, as well as information provided to EPI by an experienced local remediation contractor.

The following assumptions were used in preparing this ROM cost estimate:

- The estimated cost assumes that excavation of impacted soil will occur concurrently with excavation for property development. Only the incremental costs for disposal have been included in EPI's estimated cost spreadsheet. All contractor costs for equipment and labor would be included with Onni's construction costs.
- For purposes of estimating, the volumes requiring remediation and special handling and disposal (see Figure 6) assume that each area is contaminated from the surface down to the

depths presented. During implementation, care will be taken to remove clean overburden. Additionally, analytical data collected in the field will be used to more accurately determine the lateral limits of contamination and segregate contaminated from clean soils accordingly.

- The estimated costs for field work associated with the RI assumes that EPI fully delineates the extent of the contamination to the shallow aquifer in the next mobilization.
- Shallow groundwater impacted with COCs will be necessarily removed during development. The impacted shallow groundwater is entrained within sandy lenses of the glacial till at the subject property and which is estimated to be less than 5 feet thick. This water-bearing unit was not observed in all borings exceeding a depth of 20 feet bgs, but was generally more prevalent on the northern portion of the property. These water-bearing lenses are typically very low yield and rarely require dewatering during development such as planned at the subject property. In the event that dewatering is required, a representative cost has been included in the ROM cost estimate.
- Impacts identified for the deeper regional aquifer will not require a vapor barrier. Based on the available data, the vapor exposure pathway can likely be eliminated during the RI preparation.
- A soil source for DRO and ORO impacts to shallow groundwater was not identified during the investigation. The possibility of encountering unknown minor releases of hazardous materials exists.
- The regulatory framework for the South Lake Union area of Seattle is complex and is changing rapidly. EPI cannot accurately predict whether Ecology will allow this site into the VCP or whether they will require a more formal process such as an agreed order or consent decree. In addition, the pathway for an NFA determination may be difficult. More information about the regulatory requirements and pathway toward an NFA after the site is enrolled into a program and an Ecology Site Manager has been assigned.
- Long-term groundwater monitoring is commonly a required component of closure. However, EPI cannot predict the scope and frequency of groundwater monitoring that Ecology will require. EPI has included reasonable costs for installation of a four-well groundwater monitoring network that includes well installation and two years of quarterly monitoring. The actual scope and frequency will be negotiated with Ecology.

LIMITATIONS

As applicable and available within the project schedule and budget, EPI has completed the agreed scope of services, employing professional standards applicable in the industry today. EPI assumes no risk for existing conditions on the subject property.

To the extent that these services have required judgment, there can be no assurance that fully definitive or desired results were obtained, or if any results were obtained, that they were supportive of any given course of action. The services have included the application of judgment to scientific principles; to that

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extent, certain results of this work have been based on subjective interpretation. We make no warranties, express or implied including, without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this letter report is not to be construed as legal advice.

ENCLOSURES

Tables

Table 1	Summary of Requested Analyses
Table 2	Summary of Soil Sample Analytical Results for Petroleum Hydrocarbons and Volatile Organic Compounds
Table 3	Summary of Groundwater Sample Analytical Results for Petroleum Hydrocarbons and Volatile Organic Compounds
Table 4	Summary of Soil Sample Analytical Results for Polychlorinated Biphenyls
Table 5	Order-of-Magnitude Cost Estimate

Figures

Figure 1	General Vicinity Map
Figure 2	Site Representation
Figure 3	2018 Supplemental Investigation and Prior Boring Locations
Figure 4	2018 Supplemental Investigation and Prior Boring Locations Exceeding Soil CULs
Figure 5	2018 Supplemental Investigation and Prior Boring Locations Exceeding Groundwater CULs

Attachments

Attachment A	EPI's <i>Limited Subsurface Investigation Report</i>
Attachment B	Boring logs
Attachment C	Analytical Reports

Tables

Table 1
Table of Requested Analyses
Supplemental Investigation Technical Memorandum
Former Seattle Times
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample ID	Media	GRO ^a	DRO/ORO ^{b/c}	VOCs ^d	PCBs ^e	
AOPC 2 (Interior Tank Area)	T-4	Soil		X			
		Soil		X			
		Water		X			
	T-5	Soil		X			
		Soil		X			
		Water		X			
	T-6	Soil		X			
		Soil		X			
		Water		X			
	T-7	Soil		X			
		Soil		X			
		Water		X			
T-8	Soil		X	X			
AOPC 4 (Compressor Room)	C-16	Soil				X	
		Soil				X	
	C-17	Soil				X	
		Soil				X	
	C-18	Soil				X	
	C-19	Soil				X	
		Soil				X	
	C-20	Soil				X	
		Soil				X	
	AOPC 5 (Northern UST Complex and Fuel Dispenser)	U-10	Soil	X	X	X	
Soil			X	X	X		
Water			X	X	X		
U-11		Soil	X	X	X		
		Water	X	X	X		
U-12		Soil	X	X	X		
		Water	X	X	X		
U-13		Soil	X	X	X		
		Water	X	X	X		
U-14		Soil	X	X	X		
		Water	X	X	X		
U-15		Soil	X	X	X		
		Water	X	X	X		
U-16		Soil	X	X	X		
		Soil	X	X	X		
AOPC 8 (Heating Oil USTs)		A-4	Soil		X		
			Soil		X		
		A-5	Soil		X		
	Soil			X			
	A-6	Soil		X			
		Soil		X			
	A-7	Soil		X			
		Soil		X			
A-8	Soil		X				
	Soil		X				
NA	MW-4	Water			X		
	MW-5	Water			X		

Notes:

- a Gasoline-range organics analyzed by NWTPH-Gx.
- b Diesel-range organics analyzed by NWTPH-Dx.
- c Oil-range organics by NWTPH-Dx Methods.
- d Volatile organic compounds by EPA Method 8260.
- e Polychlorinated biphenyls by EPA Method 8082.

Compounds:

- GRO Gasoline-range organics
- DRO Diesel-range organics
- ORO Oil-range organics
- VOCs Volatile organic compounds
- PCBs Polychlorinated biphenyls

Table 2
Summary of Soil Sample Analytical Results for Petroleum Hydrocarbons and Volatile Organic Compounds
Supplemental Investigation Technical Memorandum
Former Seattle Times
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample ID	Sample Depth (feet)	Sample Date	Petroleum Hydrocarbons			Detected Volatile Organic Compounds ^a																			
				GRO ^b	DRO ^b	ORO ^b	Hexane	Benzene	Trichloro-ethene (TCE)	Toluene	Ethyl-benzene	Total Xylenes	1,3,5-Trimethyl-benzene	1,2,4-Trimethyl-benzene	Isopropyl-benzene	n-Propyl-benzene	tert-Butyl-benzene	sec-Butyl-benzene	p-isopropyl-toluene	Naphthalene						
AOPC 2 (Interior Tank Area)	T-4-5	5	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	T-4-10	10	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	T-5-5	5	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	T-5-10	10	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-6-5	5	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-6-10	10	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-7-5	5	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-7-10	10	5/2/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-8-5	5	5/2/2018	5.8	<50	360	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	U-10-5	5	5/13/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	U-10-10	10	5/13/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	U-11-15	15	5/13/2018	<5	<50	<250	<0.25	0.15	0.021	0.30	0.098	0.54	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
U-11-20	20	5/13/2018	12	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.64	0.665	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-12-15	15	5/13/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-12-20	20	5/13/2018	940	2,100 x	<250	0.35	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-13-10	10	5/9/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-13-15	15	5/9/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-14-10	10	5/9/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-14-15	15	5/9/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-15-10	10	5/20/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-15-15	15	5/20/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-16-5	5	5/20/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
U-16-15	15	5/20/2018	<5	<50	<250	<0.25	<0.03	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
A-4-15	15	4/30/2018	<5	<50	<250	<0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-4-20	20	4/30/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-5C-20:15	15	5/1/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-5C-20:20	20	5/1/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-6-15	15	5/1/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-6-20	20	5/1/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-7-10	10	5/19/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-7-35	35	5/19/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-8-10	10	5/19/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-8-20	20	5/19/2018	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Soil Cleanup Level for Unrestricted Land Uses ^a				30/100^f	2,000	2,000	NVE	0.03	0.03	0.03	7	6	9	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	5	

Notes:
 All results presented in milligramskilogram (mg/kg).
 Bold results indicate that the compound was detected.
 Shaded cells indicate that the compound was detected at a concentration greater than the cleanup level.
 Sample was not analyzed for this compound.
 Less than laboratory method detection limit.
 Analyzed by NWTPH-OS.
 Analyzed by NWTPH-OS.
 Analyzed by EPA Method 8260C.
 Analyzed by EPA Method 8082A.
 Method Texts Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1, Washington Administrative Code (WAC) 173-340-900.
 MTCA Method A Soil Cleanup Level is 30 mg/kg when benzene is present in the sample and 100 mg/kg when benzene is not detected.
 No value established.

Qualifiers:
 NVE No value established.
 x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Compounds:
 GRO Gasoline-range organics
 DRO Diesel-range organics
 ORO Oil-range organics

Table 3
 Summary of Groundwater Sample Analytical Results for Petroleum Hydrocarbons and Volatile Organic Compounds
 Supplemental Investigation Technical Memorandum
 Former Seattle Times
 1120 John Street, Seattle, Washington

Area of Potential Concern	Sample ID	Sample Date	Petroleum Hydrocarbons			Detected Volatile Organic Compounds ^e												
			GRO ^a	DRO ^b	ORO ^b	Acetone	Hexane	Chloro-form	2-Butanone (MEK)	1,1,1-Trichloro-ethane	Benzene	Trichloro-ethene (TCE)	Toluene	Tetra-chloro-ethene (PCE)	Ethyl-benzene	Total Xylenes	Isopropyl-benzene	
AOP 2	T-4:GW	5/3/2018	--	650 x	420 x	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-5:GW	5/3/2018	--	1,900 x	1,200 x	--	--	--	--	--	--	--	--	--	--	--	--	--
	T-6:GW	5/2/2018	--	170 x	<250	--	--	--	--	--	--	--	--	--	--	--	--	--
AOP 5	T-7:GW	5/2/2018	--	170 x	<250	--	--	--	--	--	--	--	--	--	--	--	--	--
	U-10:GW	5/13/2018	<100	6,700 x	4,700 x	56 lc	<1	<1	<10	<1	<1	2.3	<1	<1	<1	<1	<1	
	U-11:GW	5/13/2018	6,400	2,800 x	700 x	<50	1.2	2.5	<10	1.7	1.5	1.9	1.2	46	149.3	24	<1	
	U-12:GW	5/13/2018	37,000	5,900 x	490 x	<50	16	2.3	11	1.1	2.7	4.8	21	660	5,800	120	<1	
	U-13:GW	5/3/2018	<100	480 x	390 x	<50 jl	<1	<1	<10	<1	<0.35	7.9	<1	<1	<1	<1	<1	
NA	U-14:GW	5/4/2018	<100	230 x	<250	<50 jl	<1	<1	<10	<1	<0.35	<1	<1	<1	<1	<1	<1	
	U-15	5/20/2018	<100	3,400 x	2,100 x	<50	<1	<1	<10	<1	<0.35	<1	<1	<1	<1	<1	<1	
	MW-4	5/20/2018	--	--	--	<50	<1	<1	<10	<1	0.47	<1	1.1	<1	<1	<1	<1	
MW-5:GW	5/3/2018	--	--	--	<50 jl	<1	<1	<10	<1	<0.35	<1	1.2	<1	<1	<1	<1		
MTCA Method A Soil Cleanup Level for Unrestricted Land Uses ^e			800/1,000 ^f	500	500	NVE	NVE	NVE	NVE	200	5	1,000	5	700	1,000	NVE		

Notes:

- All results presented in micrograms per Liter (µg/L).
- Bold** Results indicate that the compound was detected.
- Shaded cells indicate that the compound was detected at a concentration greater than the cleanup level.
- Sample was not analyzed for this compound.
- Less than laboratory method detection limit.
- a Analyzed by NWTPH-Gx.
- b Analyzed by NWTPH-Dx.
- c Analyzed by EPA Method 8260C.
- d Analyzed by EPA Method 8082A.
- e Model Toxics Control Act (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1, Washington Administrative Code (WAC) 173-340-900.
- f MTCA Method A Groundwater Cleanup Level is 800 µg/L when benzene is present in the sample and 1,000 µg/L when benzene is not detected.
- NA Not applicable.
- NVE No value established.

Qualifiers:

- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Compounds:

- GRO Gasoline-range organics
- DRO Diesel-range organics
- ORO Oil-range organics

Table 3
 Summary of Groundwater Samples Analytical Results for Petroleum Hydrocarbons and Volatile Organic Compounds
 Supplemental Investigation Technical Memorandum
 Former Seattle Times
 1120 John Street, Seattle, Washington

Area of Potential Concern	Sample ID	Sample Date	Detected Volatile Organic Compounds ^c						
			n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	p-Isopropyltoluene	Naphthalene	
AOP 2	T-4:GW	5/3/2018	--	--	--	--	--	--	
	T-5:GW	5/3/2018	--	--	--	--	--	--	
	T-6:GW	5/2/2018	--	--	--	--	--	--	
	T-7:GW	5/2/2018	--	--	--	--	--	--	
AOP 5	U-10:GW	5/13/2018	<1	<1	<1	<1	<1	<1	
	U-11:GW	5/13/2018	66	170	540	10	4.9	91	
	U-12:GW	5/13/2018	350	720	2,900	21	9.9	570	
	U-13:GW	5/3/2018	<1	<1	<1	<1	<1	<1	
	U-14:GW	5/4/2018	<1	<1	<1	<1	<1	<1	
NA	U-15	5/20/2018	<1	<1	<1	<1	<1	<1	
	MW-4	5/20/2018	<1	<1	<1	<1	<1	<1	
	MW-5:GW	5/3/2018	<1	<1	<1	<1	<1	<1	
MTC A Method A Soil Cleanup Level for Unrestricted Land Uses ^e			NVE	NVE	NVE	NVE	NVE	160	

Notes:
 All results presented in micrograms per Liter (µg/L).
 Bold results indicate that the compound was detected.
 Shaded cells indicate that the compound was detected at a concentration greater than the cleanup level.
 Sample was not analyzed for this compound.
 -- Less than laboratory method detection limit.
 a Analyzed by NWTTPH-Gx.
 b Analyzed by NWTTPH-Dx.
 c Analyzed by EPA Method 8260C.
 d Analyzed by EPA Method 8082A.
 e Model Toxics Control Act (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1, Washington Administrative Code (WAC) 173-340-900.
 f MTCA Method A Groundwater Cleanup Level is 800 µg/L when benzene is present in the sample and 1,000 µg/L when benzene is not detected.
 NA Not applicable.
 NVE No value established.

Qualifiers:
 jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
 lc The presence of the analyte is likely due to laboratory contamination.
 x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Compounds:
 GRO Gasoline-range organics
 DRO Diesel-range organics
 ORO Oil-range organics

Table 4
Summary of Soil Sample Analytical Results for Polychlorinated Biphenyls
Supplemental Investigation Technical Memorandum
Former Seattle Times
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample ID	Sample Depth (feet)	Sample Date	Polychlorinated Biphenyls ^a								Total PCBs	
				Aroclor 1221	Aroclor 1232	Aroclor 1016	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262		
AOPC 4 (Compressor Room)	C-16:5	5	4/30/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	C-16:10	10	4/30/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	C-17:5	5	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	C-17:10	10	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	0.055	<0.02	<0.02	<0.02	0.055
	C-18:8	8	4/30/2018	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	<0.02	0.11
	C-19:15	15	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	C-19:20	20	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	A-5/C-20:15	15	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
A-5/C-20:20	20	5/1/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA	
MTCA Method A Soil Cleanup Level for Unrestricted Land Uses^b				1.0									

Notes:

All results presented in milligrams/kilogram (mg/kg).

Bold results indicate that the compound was detected.

< Less than laboratory method detection limit

^a Analyzed by EPA Method 8082A.

^b Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1, Washington Administrative Code (WAC) 173-340-900.

NA Not applicable

Table 5
Order-of-Magnitude Cost Estimate
Supplemental Investigation Technical Memorandum
Former Seattle Times
1120 John Street, Seattle, Washington

Remedial Elements	General Costs				Remediation			
	Unit Cost	Number of Units	Units	Subtotal	Unit Cost	Number of Units	Units	"Contaminated Soils" Within Development
General Support	\$ 20,000	1	LS	\$ 20,000				
Remedial Investigation and Feasibility Study								
Fieldwork	\$ 20,000	1	LS	\$ 20,000				
Report Preparation	\$ 40,000	1	LS	\$ 40,000				
Cleanup Action Plan Preparation	\$ 20,000	1	LS	\$ 20,000				
Permitting								
Minor Discharge Authorization	\$ 10,000	1	LS	\$ 10,000				
Health and Safety Plan	10,000	1	LS	\$ 10,000				
UST Removal					\$ 60,000	1	LS	\$ 60,000
Remedial Action								
AOPC 1 (No Remediation Necessary)								
AOPC 2								
Incremental Cost for Disposal					\$ 45	1280	Ton	\$ 57,600
Analytical					\$ 2,250	1	LS	\$ 2,250
AOPC 3 (No Remediation Necessary)								
AOPC 4								
Incremental Cost for Disposal					\$ 150	299	Ton	\$ 44,850
Analytical					\$ 4,500	1	LS	\$ 4,500
AOPC 5								
Incremental Cost for Disposal					\$ 45	10722	Ton	\$ 482,500
Analytical					\$ 9,000	1	LS	\$ 9,000
AOPC 6 (No Remediation Necessary)								
AOPC 7 (No Remediation Necessary)								
AOPC 8								
Incremental Cost for Disposal					\$ 45	2756	Ton	\$ 124,000
Analytical					\$ 6,000	1	LS	\$ 6,000
AOPC 9								
Incremental Cost for Disposal					\$ 45	1813	Ton	\$ 81,600
Analytical					\$ 3,000	1	LS	\$ 3,000
AOPC 10 (costs captured in other AOPCs)								
Remedial Oversight					\$ 1,470	180	Day	\$ 264,600
Dewatering					\$ 0.25	100,000	Gallons	\$ 25,000
Vapor Barrier					\$ 2.50	120500	SF	\$ 301,250
Groundwater Monitoring Well Installation								
Well Installation	\$ 50,000	1	LS	\$ 50,000				
2 Years of Monitoring and	\$ 4,500	8	Quarter	\$ 36,000				
Reporting	\$ 50,000	1	LS	\$ 50,000				
Voluntary Cleanup Program								
Application	\$ 5,000	1	LS	\$ 5,000				
EIM Data Input	\$ 15,000	1	LS	\$ 15,000				
Agency Interaction	\$ 10,000	1	LS	\$ 10,000				
			Total	\$ 286,000			Total	\$ 1,466,150

TOTAL \$ 1,752,150

Assumptions:

1. Excavation will be approximately 50 feet below current grade.
2. Incremental Cost is for disposal only.
3. Remedial Oversight includes 10 hours of field support, 2 hours of senior level project management, and internal equipment expenses.
4. Assumes remediation will occur for all impacted soils requiring special handling and disposal.

Figures

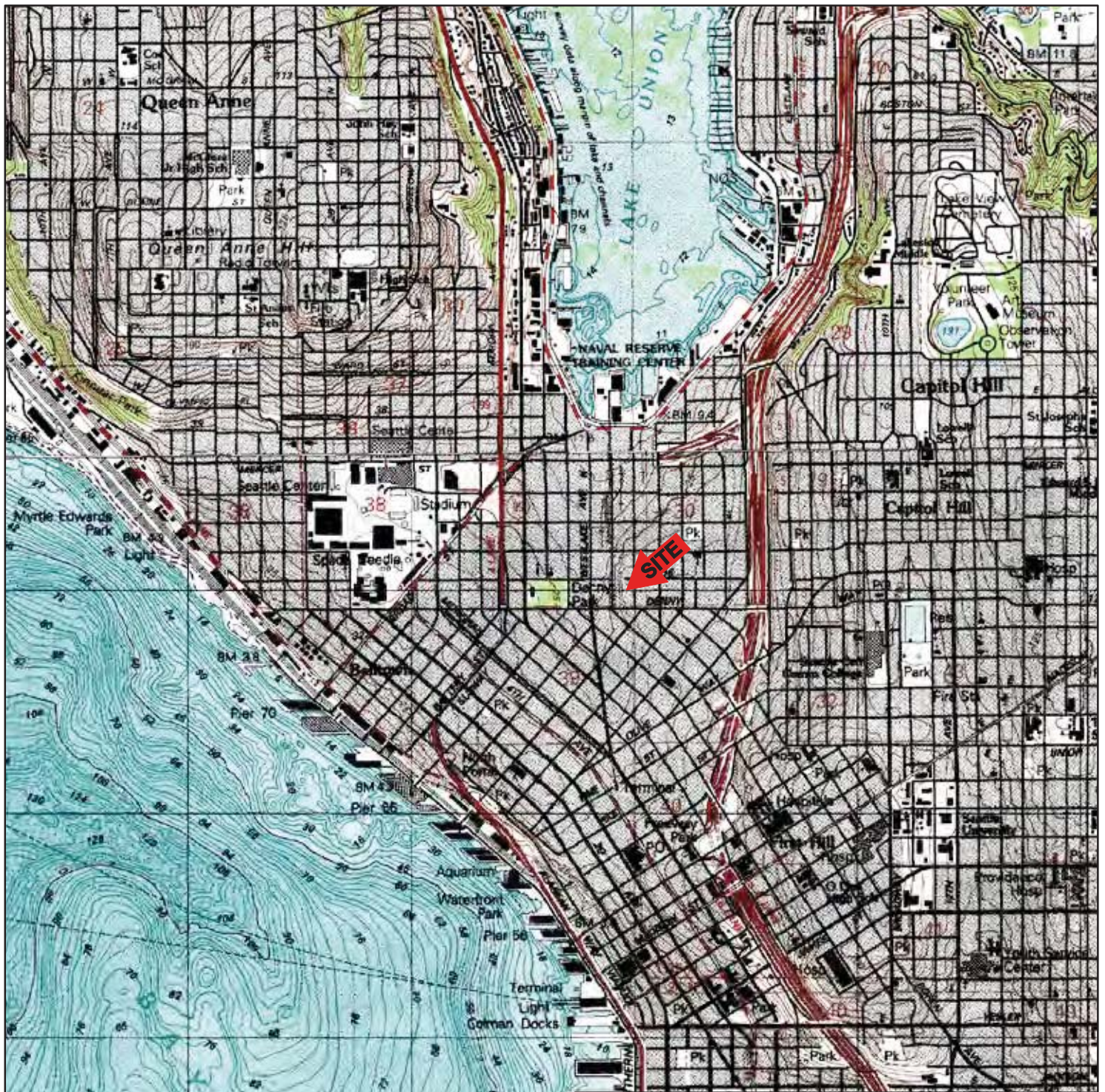

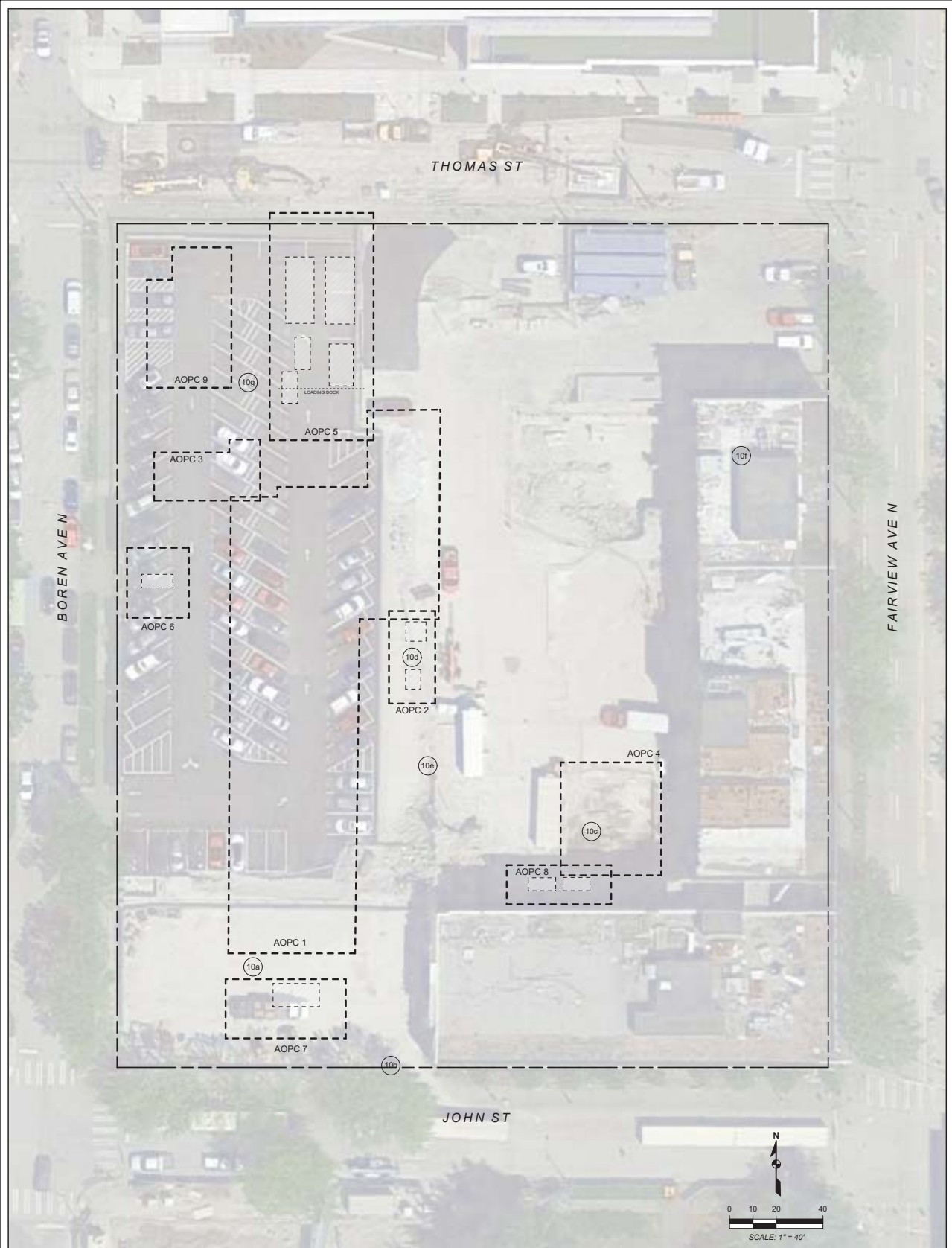


FIGURE 1
GENERAL VICINITY MAP

NOTES:
SOURCE: USGS 7.5 MINUTE QUADRANGLE (TOPOGRAPHIC)
SEATTLE NORTH, WA 1983
SEATTLE SOUTH WA 1983
SCALE = 1:25,000

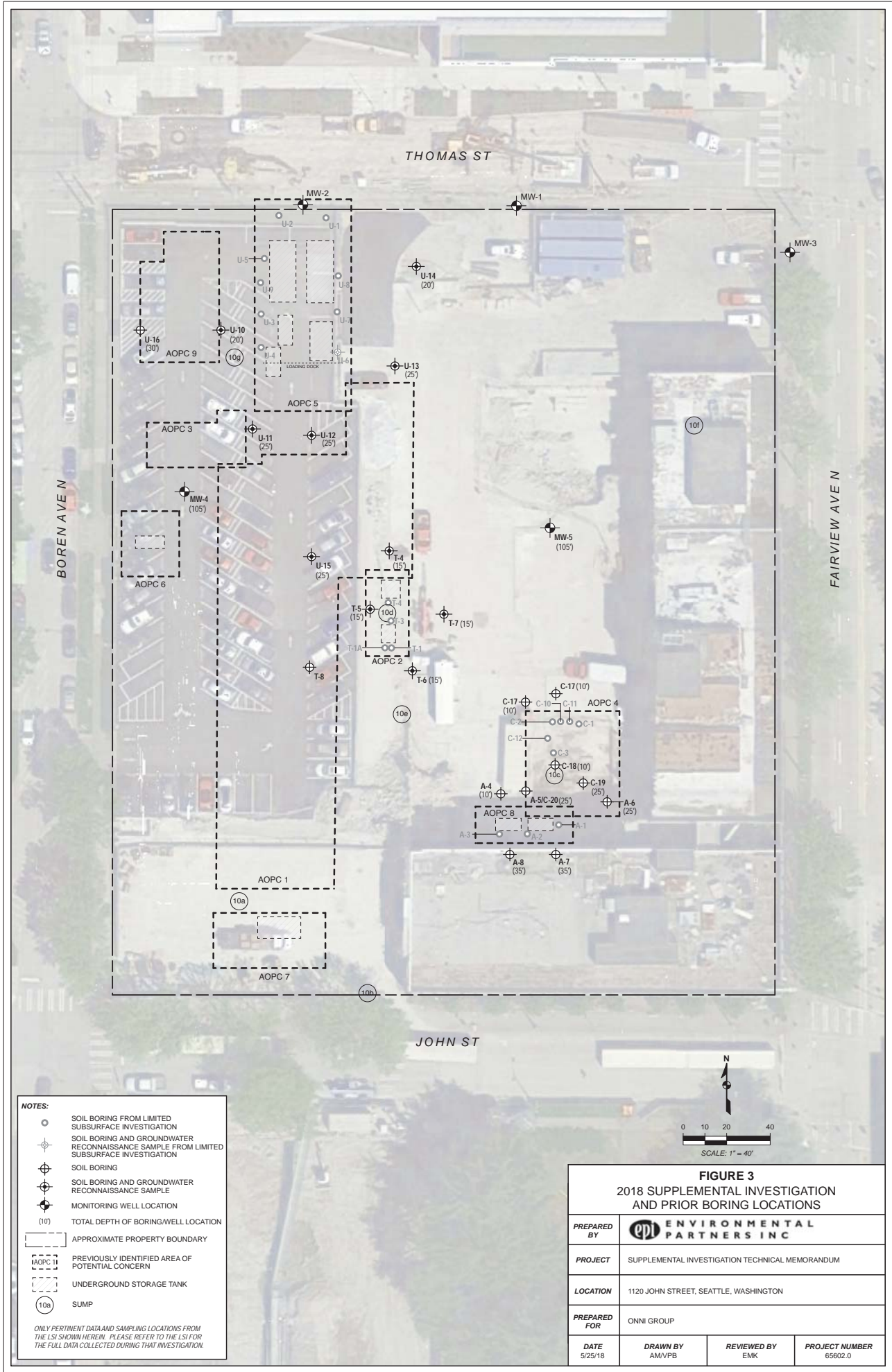
PREPARED BY	 ENVIRONMENTAL PARTNERS INC		
REPORT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
5/25/18	VPB	EMK	65602.0



NOTES:

	APPROXIMATE PROPERTY BOUNDARY
	PREVIOUSLY IDENTIFIED AREA OF POTENTIAL CONCERN
	UNDERGROUND STORAGE TANK
	SUMP

FIGURE 2 SITE REPRESENTATION			
PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
5/25/18	AM/VPB	EMK	65602.0

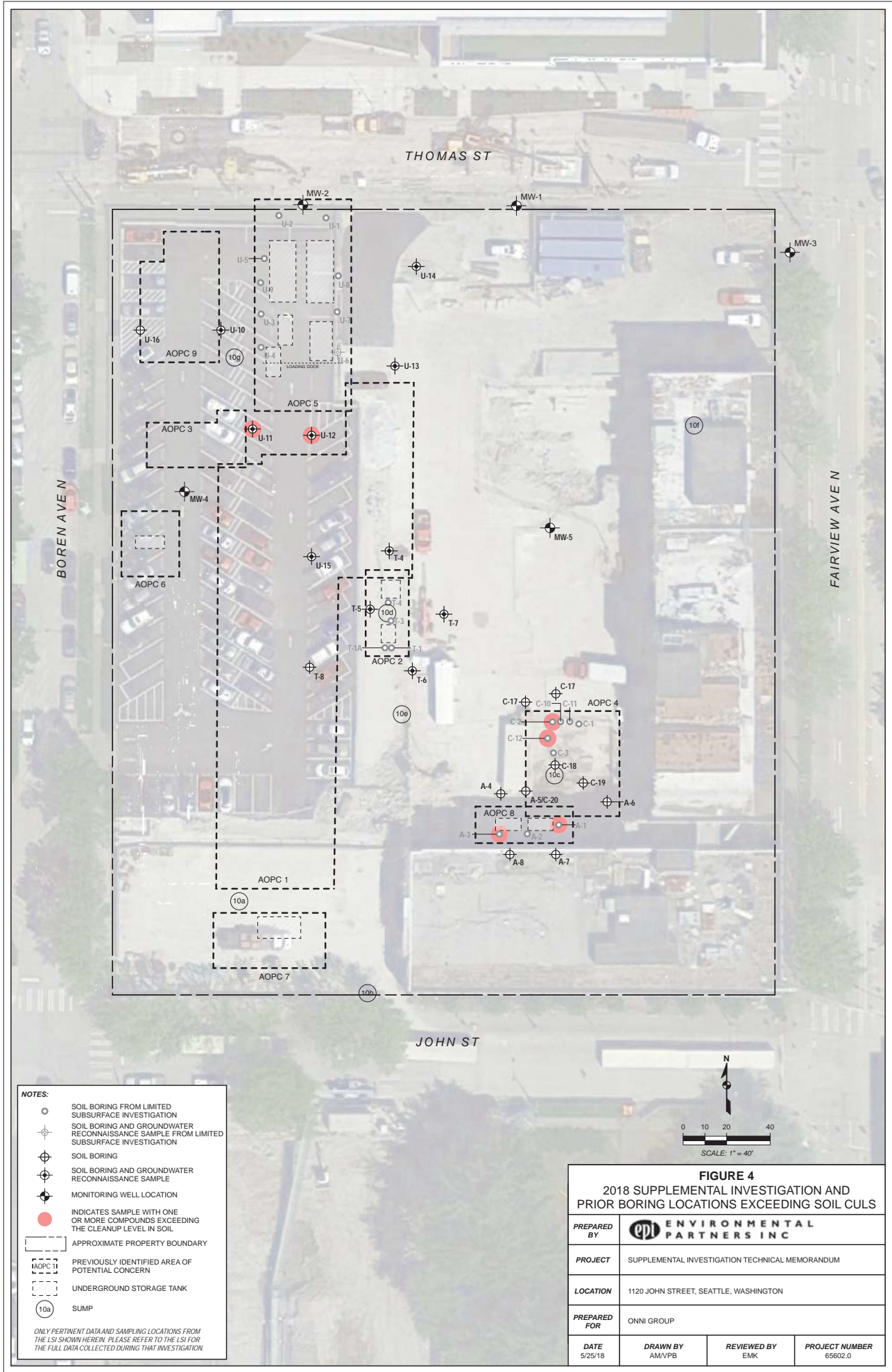


NOTES:

- SOIL BORING FROM LIMITED SUBSURFACE INVESTIGATION
- SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE FROM LIMITED SUBSURFACE INVESTIGATION
- SOIL BORING
- SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE
- MONITORING WELL LOCATION
- TOTAL DEPTH OF BORING/WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- PREVIOUSLY IDENTIFIED AREA OF POTENTIAL CONCERN
- UNDERGROUND STORAGE TANK
- SUMP

ONLY PERTINENT DATA AND SAMPLING LOCATIONS FROM THE LSI SHOWN HEREIN. PLEASE REFER TO THE LSI FOR THE FULL DATA COLLECTED DURING THAT INVESTIGATION.

FIGURE 3 2018 SUPPLEMENTAL INVESTIGATION AND PRIOR BORING LOCATIONS			
PREPARED BY			
PROJECT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE 5/25/18	DRAWN BY AMVPB	REVIEWED BY EMK	PROJECT NUMBER 65602.0



NOTES:

- SOIL BORING FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE
- ⊕ MONITORING WELL LOCATION
- INDICATES SAMPLE WITH ONE OR MORE COMPOUNDS EXCEEDING THE CLEANUP LEVEL IN SOIL
- APPROXIMATE PROPERTY BOUNDARY
- AOPC II PREVIOUSLY IDENTIFIED AREA OF POTENTIAL CONCERN
- UNDERGROUND STORAGE TANK
- (10a) SUMP

ONLY PERTINENT DATA AND SAMPLING LOCATIONS FROM THE LSI SHOWN HEREIN. PLEASE REFER TO THE LSI FOR THE FULL DATA COLLECTED DURING THAT INVESTIGATION.

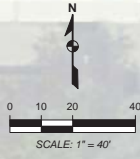
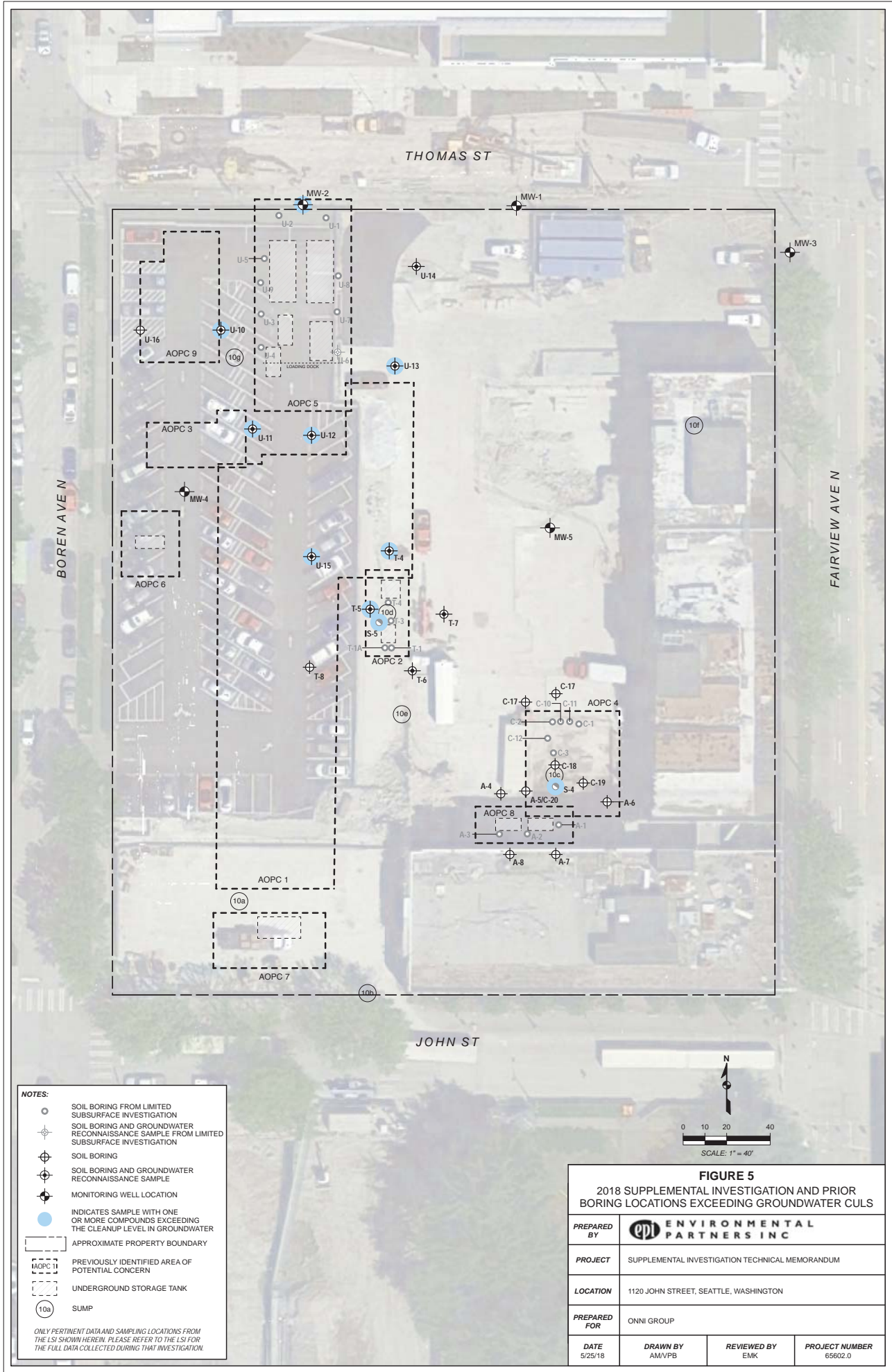


FIGURE 4
2018 SUPPLEMENTAL INVESTIGATION AND PRIOR BORING LOCATIONS EXCEEDING SOIL CULS

PREPARED BY			
PROJECT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
5/25/18	AMVPB	EMK	65602.0



NOTES:

- SOIL BORING FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE
- ⊕ MONITORING WELL LOCATION
- INDICATES SAMPLE WITH ONE OR MORE COMPOUNDS EXCEEDING THE CLEANUP LEVEL IN GROUNDWATER
- APPROXIMATE PROPERTY BOUNDARY
- AOPC II PREVIOUSLY IDENTIFIED AREA OF POTENTIAL CONCERN
- UNDERGROUND STORAGE TANK
- (10a) SUMP

ONLY PERTINENT DATA AND SAMPLING LOCATIONS FROM THE LSI SHOWN HEREIN. PLEASE REFER TO THE LSI FOR THE FULL DATA COLLECTED DURING THAT INVESTIGATION.

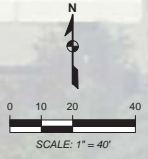
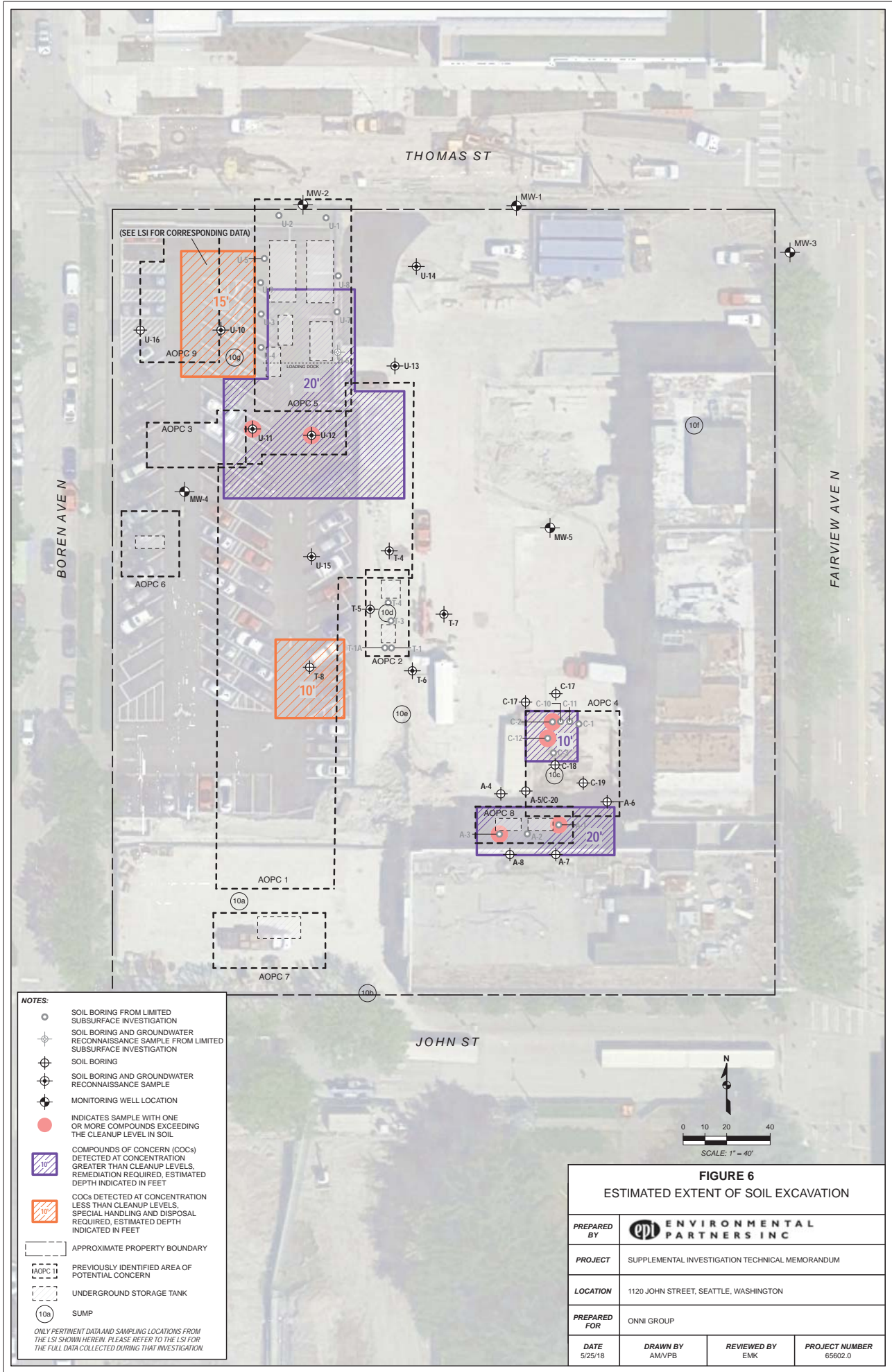


FIGURE 5
2018 SUPPLEMENTAL INVESTIGATION AND PRIOR BORING LOCATIONS EXCEEDING GROUNDWATER CULS

PREPARED BY			
PROJECT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
5/25/18	AMVPB	EMK	65802.0



NOTES:

- SOIL BORING FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE FROM LIMITED SUBSURFACE INVESTIGATION
- ⊕ SOIL BORING
- ⊕ SOIL BORING AND GROUNDWATER RECONNAISSANCE SAMPLE
- ⊕ MONITORING WELL LOCATION
- INDICATES SAMPLE WITH ONE OR MORE COMPOUNDS EXCEEDING THE CLEANUP LEVEL IN SOIL
- 10' [Hatched Box] COMPOUNDS OF CONCERN (COCs) DETECTED AT CONCENTRATION GREATER THAN CLEANUP LEVELS. REMEDIATION REQUIRED, ESTIMATED DEPTH INDICATED IN FEET
- 10' [Hatched Box] COCs DETECTED AT CONCENTRATION LESS THAN CLEANUP LEVELS. SPECIAL HANDLING AND DISPOSAL REQUIRED. ESTIMATED DEPTH INDICATED IN FEET
- APPROXIMATE PROPERTY BOUNDARY
- [AOPC 1] PREVIOUSLY IDENTIFIED AREA OF POTENTIAL CONCERN
- UNDERGROUND STORAGE TANK
- 10a ○ SUMP

ONLY PERTINENT DATA AND SAMPLING LOCATIONS FROM THE LSI SHOWN HEREIN. PLEASE REFER TO THE LSI FOR THE FULL DATA COLLECTED DURING THAT INVESTIGATION.

FIGURE 6
ESTIMATED EXTENT OF SOIL EXCAVATION

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUPPLEMENTAL INVESTIGATION TECHNICAL MEMORANDUM		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
5/25/18	AMVPB	EMK	65602.0

Attachment A
EPI's *Limited Subsurface Investigation Report*



Limited Subsurface Investigation Report

**Seattle Times Property
1120 John Street
Seattle, Washington**

Prepared For:

**Onni Group
300 – 550 Robson Street
Vancouver, BC V6B 2B7**

August 16, 2013

Prepared By:

Environmental Partners, Inc.
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EPI Project Number: 65602.0

QR ARM TR EK

TABLE OF CONTENTS

1.0 INTRODUCTION..... 1

2.0 BACKGROUND..... 2

3.0 OBJECTIVES 5

4.0 METHODOLOGY..... 5

 4.1 Drilling and Soil Sampling 6

 4.2 Monitoring Well Installation and Ground Water Sampling 6

 4.3 Sump Water Sampling 8

 4.4 Wipe Sampling 8

 4.5 Product Sampling 8

 4.6 Analytical Methods 8

5.0 FINDINGS 9

 5.1 Subsurface Conditions 9

 5.2 Analytical Results and Findings 9

 5.2.1 AOPC 1: Printing Press Areas 9

 5.2.1.1 Soil Samples 9

 5.2.1.2 Wipe Samples 10

 5.2.2 AOPC 2: Interior Ink Tanks 11

 5.2.2.1 Soil Samples 11

 5.2.2.2 Sump Water Samples 11

 5.2.3 AOPC 3: Ink Room 12

 5.2.3.1 Soil Samples 12

 5.2.4 AOPC 4: Compressor Room 13

 5.2.4.1 Soil Samples 13

 5.2.4.2 Wipe Samples 14

 5.2.4.3 Product Samples 14

 5.2.4.4 Sump Water Samples 14

 5.2.5 AOPC 5: Northern UST Complex and Fuel Dispenser 15

 5.2.5.1 Soil Samples 15

 5.2.5.2 Ground Water Sample 15

 5.2.5.3 Ecology File Review 15

 5.2.6 AOPC 6: Waste Oil UST 16

 5.2.6.1 Soil Samples 16

 5.2.7 AOPC 7: Heating Oil UST 17

 5.2.7.1 Soil Samples 17

5.2.8	AOPC 8: Heating Oil USTs.....	17
5.2.8.1	Soil Samples.....	17
5.2.9	AOPC 9: Hoists.....	18
5.2.9.1	Soil Samples.....	18
5.2.10	AOPC 10: SUMPS.....	18
5.2.10.1	Soil Samples.....	18
6.0	POTENTIAL OFF-SITE SOURCES.....	19
6.1	Soil Samples.....	19
6.2	Shallow Ground Water Samples.....	20
6.3	Deep Ground Water Samples.....	20
6.3.1	Northwestern Corner (MW-2).....	21
6.3.2	Northeastern Corner (MW-3).....	22
7.0	CONCLUSIONS.....	22
8.0	DISCLAIMER.....	24

TABLES

Table 1	Summary of Requested Analyses
Table 2	Soil Analytical Results (in mg/kg)
Table 3	Wipe Analysis Results (in µg/100 cm ²)
Table 4	Ground Water Analytical Results (in µg/L)
Table 5	Shallow Sump Ground Water Analytical Results (in µg/L)
Table 6	Product Analysis (in mg/kg)

FIGURES

Figure 1	General Vicinity Map
Figure 2	Site Representation
Figure 3	Ground Water Monitoring Well Locations
Figure 4	Soil Analytical Data – PCBs – AOPC 1 – Printing Press Areas
Figure 5	Wipe Analytical Data – PCBs – AOPC 1 – Printing Press Areas
Figure 6	Sampling Locations and Sump Water Analytical – DRO and ORO – AOPC 2 – Interior Ink Tanks
Figure 7	Soil Analytical Data – DRO and ORO – AOPC 3 – Ink Tank Room and AOPC 9 – Hoists
Figure 8	Soil Analytical Data – PCBs – AOPC 4 – Compressor Room
Figure 9	Wipe Analytical Data – PCBs – AOPC 4 – Compressor Room
Figure 10	Sump Water Analytical Data – DRO and ORO – AOPC 4 – Compressor Room
Figure 11	Sampling Locations – AOPC 5 – Northern UST Complex and Dispenser

Limited Subsurface Investigation Report
Seattle Times Property
1120 John Street, Seattle, WA
August 16, 2013

- Figure 12 Sampling Locations – AOPC 6 – Waste Oil UST
- Figure 13 Sampling Locations – AOPC 7 – Heating Oil UST (in the office area)
- Figure 14 Soil Analytical Data – DRO and ORO – AOPC 8: Heating Oil USTs
- Figure 15 Ground Water Analytical Data – VOCs

ATTACHMENTS

- Attachment A Boring Logs
- Attachment B Analytical Reports

1.0 INTRODUCTION

Environmental Partners, Inc. (EPI) is pleased to submit this Limited Subsurface Investigation Report documenting subsurface investigation activities conducted at the Seattle Times property located at 1120 John Street in Seattle, Washington (the subject property, see Figure 1). The subsurface investigation activities documented herein have been performed to characterize the environmental conditions prior to purchase of the subject property. This report is intended to document the findings of the investigative activities and present the potential environmental implications involved with subject property purchase and redevelopment. At the time of the investigations documented herein, the subject property was owned by The Seattle Times (Seattle Times) and was the historical printing and operations facility used in the production of newspapers since approximately 1940.

The following sections will address the various findings located within distinct locations throughout the subject property and present an evaluation of the potential impact that those findings may have on the current and future value of the subject property.

Portions of the environmental due-diligence work documented herein were initially performed for previous prospective buyers. Under contract, the previous prospective buyers were required to provide the results of any investigation to Seattle Times after their contract to purchase the subject property was expired. The culminating results of the previous investigations were then provided to the Onni Group by Seattle Times. Subsequent follow-up due-diligence work was performed by EPI directly for the Onni Group. This report summarizes all of the environmental due-diligence prepared by EPI to date for the subject property.

This work documented herein was intended to satisfy the requirements of a remedial investigation as defined in the Model Toxics Control Act, (MTCA), WAC 173-340-350. However, due to the complex development history of the subject property and dense nature of subsurface infrastructure, sampling locations were limited. Therefore, it was not possible to fully characterize the nature and extent of contaminants at the subject property. Resultantly, additional sampling will be necessary during redevelopment to provide a complete understanding of the existing conditions.

As a required component of a MTCA-compliant remedial investigation, a full comparative cleanup level analysis is necessary. This analysis is beyond the scope of services for this project. For purposes of the work documented herein, the analytical data collected during this work were compared against the MTCA Method A cleanup levels for soil and ground water using an unrestricted land use standard for screening purposes.

The soil cleanup levels used for screening are the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses (Method A Soil CULs) as documented in MTCA Table 740-1. The ground water cleanup levels used for screening are the MTCA Method A Ground Water Cleanup Levels (Method A Ground Water CULs) as documented in MTCA Table 720-1.

For select metals (silver and barium) where a MTCA Method A cleanup level is not available, the MTCA Method B cleanup level for direct contact using an unrestricted land use scenario (MTCA Method B Soil CUL) was used for data comparison.

Discussions in this letter report regarding compliance are with respect to the MTCA Method A or B CULs only. As previously noted, in order to fully characterize the environmental risks associated with the subject property, a full remedial investigation, including a cleanup levels analysis will be necessary.

Method A Soil CULs for chromium are provided for a totalized chromium value, which includes both chromium III and chromium VI. Chromium VI is not stable in the environment and readily breaks down to chromium III. Therefore, for purposes of this evaluation, chromium detections at the subject property were compared to the chromium III cleanup level of 2,000 mg/kg. However, additional sampling should be conducted prior to development of the property to rule out the presence of chromium VI above its respective cleanup level.

In instances where wipe samples were collected, these results were compared to the Action Level established by the US EPA.

2.0 BACKGROUND

In order to develop a scope of work (SOW) to perform subsurface investigation activities, EPI reviewed a *Phase I Environmental Site Assessment Report* for the subject property dated January 8, 2010, prepared by Farallon Consulting, L.L.C. for Bush Strout & Kornfeld (Phase I ESA). EPI also performed a site reconnaissance the subject property to assess access limitations for drilling and sampling equipment.

The Phase I ESA identified several recognized environmental conditions (RECs) at the subject property. These RECs included:

- The presence of at least 11 underground storage tanks (USTs). The USTs contained a range of compounds including waste oils and liquids, heating oil, diesel fuel, gasoline, and petroleum- and solvent-based inks. The USTs were installed as early as 1930 and at least three have been closed-in-place. The Phase I ESA also indicated that there is the potential for additional unknown or undocumented USTs to be present at the subject property. Five of the USTs and a fuel dispenser are located east of a maintenance garage in the northwestern corner of the subject property.
- Potential releases of inks and/or cleaning compounds from two large newspaper printing presses located on below-grade foundations.
- The presence of a maintenance garage on the property with the known use of solvents and petroleum products for vehicle maintenance since about 1948.
- The presence of a hazardous materials storage room with drains that are connected to an oil/water separator and a UST located west of the building. The age, location, and condition of that UST are not known.
- The potential migration of releases from adjacent or nearby properties onto the subject property.

During the EPI's site reconnaissance, Seattle Times personnel were able to provide plans of the oil/water separator/UST located to the west of the subject property building.

Based EPI's review of the Phase I ESA and observations made during the site reconnaissance, a total of 10 areas of potential concern (AOPCs) were identified for the subject property:

- AOPC 1: Printing Press Areas

AOPC 1 includes two separate rooms within the building. One room consists of four locations which house a total of approximately 38 newspaper printing presses between the four press units, and the second room contains approximately 9 additional printing presses. Within each of the press units, a series of 9 to 10 presses are located on top of sunken concrete pads, which house the presses.

It is understood that these presses were in operation during the 1960's and during EPI's site walk, oily stains were observed and surficial cracking of the concrete pads has occurred. To the best of EPI's knowledge, these presses used hydraulic oils, ink, and compressed air during the printing process.

- AOPC 2: Interior Ink Tanks (centrally located)

AOPC 2 consists of the two interior building ink tanks, which supplied ink to the pressrooms. These two vertical 4,000 (north tank) and 5,000-gallon (south tank) tanks are apparently housed within concrete vaults, which were constructed on top of the native soils of the sub-floor.

- AOPC 3: Ink Room (adjacent to shop in northwest corner)

AOPC 3 consists of the abandoned aboveground ink tanks located within a portion of the maintenance shop/garage area, in the northwest corner of the Site. These ink tanks are similar in their product storage to the ink tanks listed above in AOPC 2, but are above ground. Conditions during the site walk indicated considerable cracking of the concrete floor beneath the tanks and heavy-oil type stains on the surface of the floor which ran into these cracks, causing concern for the potential for considerable contaminant migration to the subsurface.

- AOPC 4: Compressor Room

AOPC 4 consists of the boiler room and compressor room within the Facility. This AOPC consists of two separate floors within a common area, with the upper area consisting of several large reciprocating piston-type compressors and the bottom area consisting of the boilers used to heat the building on the subject property. Each of these respective areas was constructed with concrete floors built on top of native or disturbed soil.

- AOPC 5: Northern UST Complex and Dispenser

This AOPC consists of five known USTs and one fuel dispenser located in the northwest corner of the subject property. This AOPC consists of:

- Two 12,000-gallon active gasoline USTs with cathodic protection;
 - One 8,000-gallon diesel oil UST; and
 - Two 5,000-gallon waste oil USTs.
-
- AOPC 6: Waste Oil UST (adjacent to the west of the facility)

AOPC 6 consists of one known 2,000-gallon UST used for storage of waste oil located on the west side of the subject property, outside the building.

- AOPC 7: Heating Oil UST (in the office area)

AOPC 7 consists of one 12,000-gallon heating oil UST, oriented east-west, and located beneath the southwest addition to the building. The UST was reportedly installed in 1974 and emptied in 2007. The UST is reportedly constructed of steel with an exterior coating of asphalt.

- AOPC 8: Heating Oil USTs (south-centrally located alleyway)

AOPC 8 consists of two 2,000-gallon heating oil USTs located in the alley south of the boiler room. These USTs were installed in 1930 and were reportedly filled with concrete slurry in 1997.

- AOPC 9: Hoists (located in maintenance garage)

AOPC 9 consists of four hydraulic hoists installed in the floor of the maintenance garage.

- AOPC 10: Sumps (located throughout facility)

AOPC 10 consists of four sumps at locations throughout the facility. The exact construction details of each sump were unknown. The sumps are assumed to be approximately 8 feet deep.

The AOPCs are depicted on Figure 2.

During a review of Ecology files from nearby properties that might have posed some environmental risk, EPI reviewed a document related to the property located adjacent to the north of the subject property, the Troy Laundry facility, a historical dry-cleaning business. That document titled *DRAFT Remedial Investigation*, dated May 2012 indicated that there was a documented release of trichloroethene (TCE) and tetrachloroethene (PCE) to soil and ground water. It also indicated that the regional ground water aquifer is present at a depth of 80 to 90 feet and flows toward the east-southeast. Therefore, the subject property is located cross- to down-gradient from the Troy Laundry facility. In addition to the regional ground water, there are also laterally discontinuous lenses of shallow ground water ranging in depth from about 20 to 35 feet.

The subsurface investigative activities documented herein were focused on addressing the above AOPCs and off-site potential sources of contamination.

The investigation was performed in three mobilization phases as follows:

- July 2012;
- September 2012; and
- May 2013.

The July, 2012 mobilization phase was primarily focused on large-scale, on-site issues associated with AOPCs 1 through 5. The September, 2012 mobilization phase focused on AOPCs 6 through 10 and included ground water monitoring well installation to screen ground water conditions along the northern property boundary. The May, 2013 mobilization phase was performed to address the major data gaps remaining from the initial mobilization phases and included collecting additional samples in AOPC 7 (Heating Oil UST [in the office area]) and installation of an additional well to further screen ground water along the northern property boundary.

3.0 OBJECTIVES

The objective of the subsurface investigation was to assess the potential for environmental liability associated with the purchase of the subject property. The investigation work at the subject property has allowed EPI to prepare prospective buyers for the potential of environmental impacts associated with the subject property and to present the potential risks associated with redevelopment.

The specific objective of this subsurface investigation report is to provide a screening-level evaluation of the analytical results and findings from each AOPC.

4.0 METHODOLOGY

Five basic methods of investigation were used to collect environmental samples of the medias of concern. These methods included:

- **Drilling and soil sampling.** Hollow-stem auger (HSA) drilling was used to investigate areas that were accessible to large drilling equipment and which required drilling to a depth where it was reasonably expected to detect contaminated soils. Soil borings located exterior of the building were advanced using a full size CME 55 drill rig.

Shallower, direct-push probe drilling was performed in areas with limited space for drilling equipment. This drilling technique was typically performed in areas within the facility building(s). Shallow soil borings were advanced using a limited-access Geoprobe unit model 54LT.

- **Monitoring well installation and ground water sampling.** Ground water samples were collected from wells that were installed in several locations following the installation of monitoring wells. An additional shallow reconnaissance ground water sample was collected from AOPC 5 during soil boring advancement.

- **Sump water sampling.** Samples were collected from several areas throughout the facility where shallow groundwater is pumped from a series of de-watering sumps beneath the facility building(s).
- **Wipe sampling.** Wipe samples were collected within portions of the facility that were considered areas that were likely to contain polychlorinated biphenyls (PCBs). Wipe samples were collected on equipment surfaces, concrete floors, and utility piping.
- **Product sampling.** Samples of the oil (product) found within some of the equipment at the facility were collected and analyzed for the presence of PCBs.

4.1 Drilling and Soil Sampling

EPI advanced a series of soil borings at the subject property using the methods described above for the purposes of collecting soil samples to assess subsurface soil conditions. Prior to boring advancement, each location was screened for utilities by a private utility locator. After utilities were cleared, each boring location was concrete-cored prior to boring advancement. HSA boring locations were first excavated to a minimum of three feet below ground surface (bgs) within each borehole in order to ensure that no utilities were present prior to drilling.

During boring advancement, soils were screened for the potential presence of contamination using a photoionization detector (PID) and using general observations of odor and discoloration. Soil samples were collected in accordance with standard protocols for the collection of soil samples utilizing appropriate sampling techniques for the required analytical method. In addition, soils were investigated as they were removed from the subsurface and were logged according to the Unified Soil Classification System, ASTM D2488. The specific sample locations and depths are summarized for each AOPC-specific section, and are presented on Table 2. Boring logs for each HSA boring location are included in Attachment A. A summary of the DPT borings is also included in Attachment A.

4.2 Monitoring Well Installation and Ground Water Sampling

A total of three ground water monitoring wells were installed on the northern property boundary to assess if off-site ground water impacts from the Troy Laundry facility are potentially migrating on to the subject property. With the exception of MW-3, each monitoring well was installed using standard HSA drilling techniques.

EPI contracted with Cascade Drilling, L.P. (Cascade) to install each monitoring well using hollow stem auger (HSA) drilling and well installation methods. The locations of the monitoring wells are specified on Figure 3. As-built well details and soil boring logs are provided in Attachment A.

Cascade used a truck-mounted HSA drilling rig to advance boreholes and install the monitoring wells. The wells were constructed of 2-inch diameter, flush threaded, schedule 40 PVC casing and screen in conformance with WAC 173-160-430. Well screen assemblies consisted of 15 feet of 0.010-inch (*i.e.*, 10 slot), flush-threaded, machine-slotted screen with a threaded end cap.

A sand filter pack consisting of “20-40 Colorado” silica sand was placed in the annulus of the borehole to a depth of about one foot above the top of the well screen. Bentonite chips were placed in the annular space from the top of the sand pack to within two feet of ground surface, and were then hydrated. The wells were completed with a traffic-rated flush-mount steel well monument and a watertight locking cap. All well installation procedures were performed in accordance with the requirements of WAC 173-160, Minimum Standards for Construction and Maintenance of Wells.

Investigative derived waste (IDW; e.g., drill cuttings, decontamination water, well development fluids, etc.) were contained in 55-gallon drums and stored on-site pending disposal.

Monitoring well MW-1 was installed in the northwest corner of the subject property to a depth of about 100 feet. Ground water was first encountered in this boring at a depth of about 88 feet.

Monitoring well MW-2 was installed in the central portion of the northern property boundary to a depth of about 30 feet. Ground water was first encountered in this boring at a depth of about 14 feet. This well was installed within the laterally discontinuous shallow ground water, typical in the area of the subject property.

Monitoring well MW-3 was installed in the northeast corner of the subject property to a depth of about 100 feet. Ground water was first encountered in this boring at a depth of about 14 feet. Due to the presence of shallow ground water, a conductor casing was installed prior to advancing a boring to deeper ground water to prevent the contamination of deeper water by overlying shallower water. Soil samples were collected to verify the thickness of the shallow water bearing unit prior to installing the conductor casing. Soils exhibited conditions that suggested that the water encountered at the 14-foot depth was about five feet thick (from about 14 to 19 feet). Therefore, it was determined that the conductor casing would be installed to a depth of 30 feet to effectively prevent the downward migration of the shallow ground water. The conductor casing consisted of 12-inch diameter steel casing installed into a 15-inch borehole. After the conductor casing was installed, boring advancement continued to the terminal depth of 100 feet for well installation. Deeper water was encountered at a depth of 95 feet.

Following installation, ground water wells were developed to remove sediment from the vicinity of the well screens and to allow for representative water sample collection. Measurements of pH, conductivity, and temperature were recorded during purging. Consecutive readings of these parameters stabilized to within 10 percent prior to sample collection. Ground water samples were collected using a disposable Teflon® bailers with bottom emptying devices that minimize the volatilization of components during sampling.

In addition to ground water samples collected from the EPI installed monitoring wells, one additional reconnaissance ground water sample was collected from boring U-6, where the laterally discontinuous shallow ground water was encountered in AOPC 5.

Samples were submitted for a range of analyses, as indicated in Table 1.

4.3 Sump Water Sampling

Water samples were collected from a total of three shallow sumps at the subject property that are used to dewater areas of shallow-perched ground water beneath the facility's infrastructure. Disposable Teflon® bailers were used to collect sump samples. The samples were submitted for the range of analyses as indicated in Table 1.

4.4 Wipe Sampling

Wipe samples were collected on the surfaces of various equipment throughout the facility that had the potential for PCB impacts. Wipe samples were collected in accordance with Environmental Protection Agency's (EPA's) document titled *Wipe Sampling and Double Wash/Rinse Cleanup as recommended by the Environmental Protection Agency PCB Spill Cleanup Policy dated June 23, 1987, Revised and Clarified on April 18, 1991.*

Wipe samples were collected using a laboratory-prepared gauze pad saturated with hexane, which was then scrubbed over 100 square centimeters (100 cm²) and placed into a laboratory-supplied container. Laboratory prepared cardboard templates were used to gauge 100 cm² on flat surfaces. Wipe samples were analyzed for PCB content using EPA Method 8082.

4.5 Product Sampling

A total of three large compressors exist within a portion of the facility that were used to deliver compressed air to various equipment throughout the facility. Each of these compressors used oil to lubricate portions of the compressors. In order to determine the likelihood that PCBs were used in these compressors, EPI collected samples of the oils within the compressors. Samples of the oils in the compressors were collected by using a pipet to remove aliquots of the oils from an oil reservoir located on the compressors.

4.6 Analytical Methods

Soil and ground water samples were submitted to an analytical laboratory under standard chain-of-custody procedures for a range of analyses, depending on the likelihood within each AOPC to detect various compounds. Samples were submitted for the range of analyses indicated in Table 1. The following analytical methods were used for analysis, as appropriate:

- Gasoline-range organics (GRO) by NWTPH-Gx Methods;
- Diesel- and Oil-range organics (DRO and ORO) by NWTPH-Dx Methods;
- Volatile organic compounds (VOCs) by EPA Method 8260;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B;
- Ethylene dibromide (EDB) and ethylene dichloride (EDC) by EPA Method 8260B;
- Methyl tertiary butyl ether (MTBE) by EPA Method 8260B;
- Carcinogenic polyaromatic hydrocarbons (cPAHs) by EPA Method 8270;
- Polychlorinated biphenyls (PCBs) by EPA Method 8082; and

- RCRA Metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) by EPA 6000/7000 series methods.

All analyses from sampling events at the subject property were submitted to Friedman and Bruya, Inc. (FBI) in Seattle, Washington. Laboratory reports for all of the sample events are provided in Attachment B. A discussion of the findings from within each AOPC is described in detail in the AOPC-specific sections that follow.

5.0 FINDINGS

5.1 Subsurface Conditions

Subsurface conditions at the subject property varied depending on the AOPC investigated and the depth explored. In general, shallow soils beneath the concrete floor in areas of AOPC 1, the printing press areas, consisted of approximately 2 to 6 inches of structurally-supportive, non-native sub-base material. Native soils located beneath the sub-base material generally consisted of well-graded sands, clay-sand mixtures, and clay to approximately 7 feet bgs, where the soils generally transition to poorly graded sands with gravel and thick lean clay, down to the maximum depth explored. The native soils are typical of glacial till, which is common in the area of the subject property.

A regional ground water aquifer is present at depths ranging from of 85 to 95 feet. According to reports reviewed for the northern adjacent property, the regional aquifer flows toward the east-southeast. In addition to the regional ground water table, there are also laterally discontinuous lenses of shallow ground water ranging in depth from about 15 to 20 feet.

5.2 Analytical Results and Findings

5.2.1 AOPC 1: Printing Press Areas

5.2.1.1 Soil Samples

AOPC 1 consists of the printing press areas. Depths of soil samples ranged from just beneath the concrete, to a maximum investigated depth of 4.0 feet using DPT methods. A total of 16 subsurface locations were investigated within AOPC 1, as depicted on Figure 4. From these locations, a total of 17 soil samples were submitted for a range of analyses, as indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 1 are as follows:

- Neither GRO, DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed.
- PCBs were detected in two samples (sample P2 and sample P19) at concentrations of 0.2 mg/kg and 0.23 mg/kg, respectively. None of the detected concentrations of PCBs exceeded the MTCA Method A Soil CUL of 1 mg/kg for PCBs.

- The following RCRA metals and maximum concentrations were detected above the compound-specific MDL:
 - Chromium – 25.1 mg/kg;
 - Arsenic – 8.68 mg/kg;
 - Silver – 1.13 mg/kg;
 - Barium – 97.1 mg/kg; and
 - Lead – 20.4 mg/kg.

With the exception of chromium, none of the RCRA metals were detected at a concentration above the MTCA Method A Soil CUL or Method B CUL.

Although no COPCs were detected in soil at concentrations that exceed MTCA Method A Soil CULs, special handling and disposal will be required during development for soils containing low-concentration PCBs. Additional sampling should be performed during development to accurately define the area requiring special handling.

5.2.1.2 Wipe Samples

A total of 24 wipe samples were collected from the surface of the printing presses within AOPC 1 to screen for the presence of PCBs, as depicted on Figure 5.

The following presents the general findings of the wipe sampling performed within AOPC 1:

- Wipe sampling indicated the presence of PCBs in each of the wipe samples at concentrations ranging from 1.4 $\mu\text{g}/100\text{ cm}^2$ to 12 $\mu\text{g}/100\text{ cm}^2$.
- The EPA action level for requiring cleanup prior to disposal is 10 $\mu\text{g}/100\text{ cm}^2$.
- Concentrations of detected PCBs were below the EPA action level of 10 $\mu\text{g}/100\text{ cm}^2$ in all locations with the exception of wipe locations P-21 and P-39 which exhibited a concentrations of 12 $\mu\text{g}/100\text{ cm}^2$ and 23 $\mu\text{g}/100\text{ cm}^2$.
- Printing presses that exhibit concentrations of PCBs at concentrations above the EPA action level will require remedial action (i.e., industrial cleaning) prior to decommissioning. In addition, it will be necessary to assess the concrete floor and walls to ensure that the concrete surrounding the presses does not also require industrial cleaning prior to demolition. This additional sampling and analysis should be completed prior to decommissioning and demolition.

5.2.2 AOPC 2: Interior Ink Tanks

5.2.2.1 Soil Samples

A total of 4 shallow borings were advanced near the interior ink tanks in AOPC 2 using DPT methods. The boring locations are depicted on Figure 6. A total of 3 soil samples ranging in depths from 1.75 to 4.5 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 2 are as follows:

- Neither GRO, DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed.
- No COPCs were detected in soil at concentrations exceeding a potential cleanup level.
- The following RCRA metals and maximum concentrations were detected above their compound-specific MDLs:
 - Chromium – 21.2 mg/kg;
 - Arsenic – 5.70 mg/kg;
 - Barium – 58.6 mg/kg; and
 - Lead – 32.2 mg/kg.

With the exception of chromium, none of the RCRA metals were detected at a concentration above the MTCA Method A Soil CUL or Method B CUL.

5.2.2.2 Sump Water Samples

One of the sumps considered to be part of AOPC 10 (10d) is located within the AOPC 2 area. Two of the soil borings documented above for AOPC 2 were also advanced for assessment of soil conditions adjacent to the sump in this area. The soil results presented above are also applicable to the sump in AOPC 2.

In addition, one water sample (S-5) was collected from the sump in this area and was submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 5 and on Figure 6.

The following present the general findings of water conditions within AOPC 2:

- GRO was not detected at a concentration exceeding the compound-specific MDL.

- Chloroform was detected at a concentration of 1 µg/L. There is no MTCA Method A CUL available for chloroform. Chloroform is a common laboratory contaminant and is not likely present in water at the subject property. Future assessment activities should include re-assessing for the presence of chloroform in sump water. No other VOCs were detected at a concentration exceeding the compound-specific MDL.
- DRO and ORO were detected at concentrations of 110,000 micrograms/Liter (µg/L) and 10,000 µg/L, respectively. Each of these concentrations exceed the MTCA Method A GW CUL of 500 µg/L, which is applicable to both DRO and ORO.

The presence of DRO and ORO in sump water is indicative of a DRO and ORO subsurface release at the subject property. Defining the nature and extent of such a release was beyond the scope of services for this project. Additional investigation should be performed during development to determine the source of the impacts as well as the nature and extent of the release. It is likely that remedial actions will be necessary in order to address the source of the sump water impacts.

5.2.3 AOPC 3: Ink Room

5.2.3.1 Soil Samples

A total of 4 shallow borings were advanced near the interior ink tanks in AOPC 3 using DPT methods. The boring locations are depicted on Figure 7. A total of 4 soil samples, each collected at a depth of 5 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 3 are as follows:

- Neither GRO, DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed.
- No COPCs were detected in soil at concentrations exceeding a potential cleanup level.
- The following RCRA metals and maximum concentrations were detected above their compound-specific MDLs:
 - Chromium – 22.7 mg/kg;
 - Arsenic – 2.8 mg/kg;
 - Barium – 86.5 mg/kg; and
 - Lead – 5.5 mg/kg.

With the exception of chromium, none of the RCRA metals were detected at a concentration above their respective MTCA Method A Soil CULs or Method B CULs.

Based on the data collected, no remediation or special handling or disposal of soils will be required in AOPC 3.

5.2.4 AOPC 4: Compressor Room

5.2.4.1 Soil Samples

A total of 6 shallow borings were advanced near the compressors in AOPC 4 using DPT methods. The boring locations are depicted on Figure 8. A total of 6 soil samples ranging in depths from near surface to 0.75 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 4 are as follows:

- Neither GRO, DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed.
- The following RCRA metals and maximum concentrations were detected above their compound-specific MDLs:
 - Chromium – 18.4 mg/kg;
 - Arsenic – 2.98 mg/kg;
 - Silver – 1.69 mg/kg;
 - Barium – 65.7mg/kg; and
 - Lead – 47.0 mg/kg.

None of the RCRA metals were detected at a concentration above the MTCA Method A Soil CUL or Method B CUL.

- PCBs were detected in two samples (C-2 and C-12) at concentrations of 1.3 mg/kg and 1.2 mg/kg, respectively. These concentrations both exceed the MTCA Method A CUL of 1 mg/kg.

Based on the data collected in AOPC 4, a release of PCBs has occurred to soil at concentrations that are above the MTCA Method A Soil CUL and will require remediation during development. Due to restrictions on sampling areas due to dense infrastructure, it was not practicable to define the nature and extent of PCB impacts to soil. Such sampling should be conducted as a component of remedial efforts to be conducted during development.

5.2.4.2 Wipe Samples

A total of six wipe samples (two per compressor) were collected from the surface of the compressors to screen for potential PCBs. The analytical results are summarized in Table 3 and are depicted on Figure 9.

Wipe sampling indicated the presence of PCBs in three of the six locations sampled at concentrations ranging from 0.47 $\mu\text{g}/100\text{ cm}^2$ to 0.54 $\mu\text{g}/100\text{ cm}^2$. The EPA action level for requiring cleanup prior to disposal is 10 $\mu\text{g}/100\text{ cm}^2$. Concentrations of detected PCBs were below the EPA action level of 10 $\mu\text{g}/100\text{ cm}^2$ in all locations.

Based on these results, it does not appear that special handling or disposal will be required for the compressor equipment.

5.2.4.3 Product Samples

A total of 3 product samples (one per compressor) were collected from the oil reservoirs on the compressors to screen for potential PCBs. The analytical results are summarized in Table 6.

PCBs were not detected in product at concentrations above the compound-specific method detection limit for the analysis performed.

5.2.4.4 Sump Water Samples

One of the sumps considered to be part of AOPC 10 (10c) is located within the AOPC 4 area. One water sample was collected from the sump in this area. The water sample (S-4) was submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 5 and on Figure 10.

The following present the general findings of water conditions within AOPC 2:

- Neither GRO nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis.
- DRO was detected at a concentration of 340 $\mu\text{g}/\text{L}$, which is below the MTCA Method A GW CUL of 500 $\mu\text{g}/\text{L}$.
- ORO was detected at concentrations of 1,900 $\mu\text{g}/\text{L}$, which is above the MTCA Method A GW CUL of 500 $\mu\text{g}/\text{L}$.

The presence of ORO in sump water is indicative of an ORO subsurface release at the subject property. Defining the nature and extent of such a release was beyond the scope of services for this project. Additional investigation should be performed during development to determine the source of the impacts as well as the nature and extent of the release. It is likely that remedial actions will be necessary in order to address the source of the sump water impacts.

5.2.5 AOPC 5: Northern UST Complex and Fuel Dispenser

5.2.5.1 Soil Samples

A total of 7 borings were advanced near the USTs in AOPC 5 using a combination of DPT and HSA drilling methods. The boring locations are depicted on Figure 11. A total of 9 soil samples ranging in depths from 8 feet to 15 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

Boring placement in AOPC 5 was limited due to infrastructure and dense utilities throughout the UST complex. Two additional boring locations were attempted in AOPC 5, but exhibited refusal and were unsuccessful. With the exception of one location, U-3, the borings were advanced to a total depth of 20 feet.

Neither GRO, DRO, ORO, BTEX, or VOCs were detected at concentrations exceeding the compound-specific MDL for the associated analyses performed in any of the soil samples.

5.2.5.2 Ground Water Sample

Shallow, perched ground water was encountered in one boring location (U-6), which was located near the loading dock. The depth to ground water was approximately 15 feet and is likely associated with the laterally discontinuous shallow ground water typically observed in the area. One shallow reconnaissance ground water sample was collected from U-6 and was submitted for analysis as indicated in Table 1. The analytical results are summarized in Table 4 and are depicted on Figure 11.

TCE was detected in the ground water sample at 9 µg/L, which exceeds the MTCA Method A Ground Water Cleanup Level of 5 µg/L.

The presence of TCE in the shallow ground water indicates that a release of TCE has occurred. TCE is a known contaminant from the Troy laundry site adjacent to the north of the subject property, however, a water sample collected from a shallow ground water well installed on the northern property boundary did not contain detectable concentrations of TCE (see *Potential Off-Site Issues* below). This suggests that the TCE detected in shallow ground water may be from an on-site source. However, there is insufficient data to determine the source of the TCE impacts. Determining the source of the TCE impacts was beyond the scope of services for this project and is not likely possible in the current facility configuration.

Remedial actions will be necessary to address the TCE impacts to ground water, however, additional data will be required in order to determine an appropriate remedy. This data should be collected during, or after, demolition activities are conducted.

5.2.5.3 Ecology File Review

As part of the due diligence process prior to purchase, a file review of the subject property and nearby properties was performed at the Ecology's Northwest Regional Office (NWRO) in Bellevue,

Washington, which was conducted on August 2, 2012. Based on a review of the files, there appeared to be one on-site concern for the subject property.

EPI reviewed a report prepared by Ecova in 1990 that documented the removal of a UST in the southwest corner of the loading dock area of the facility. That report presented the sidewall conditions of the excavation following tank removal and reported that residual hydrocarbons, as high as 4,300 mg/kg, were left in place in soil. This area received a 'No Further Action' (NFA) determination on February 10, 2012, however it is unclear how the property received an NFA without removal of these soils. Although this area has received an NFA, based on the file review, soils in the loading dock are likely impacted at concentrations above current cleanup levels and will likely require additional remedial action during redevelopment. Due to the current configuration of the USTs present in this area and the dense nature of above ground and subsurface infrastructure in the loading dock, EPI was unable investigate these conditions.

5.2.6 AOPC 6: Waste Oil UST

5.2.6.1 Soil Samples

Two borings were advanced near the waste oil UST in AOPC 6 using HSA drilling methods. The boring locations are depicted on Figure 12. A total of two soil samples, each collected at a depth of 10 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 6 are as follows:

- Neither GRO, DRO, ORO, VOCs, PAHs, nor PCBs were detected at concentrations exceeding the compound-specific MDL for the associated analyses performed.
- The following RCRA metals and maximum concentrations were detected above their compound-specific MDLs:
 - Chromium – 12.7 mg/kg;
 - Arsenic – 2.48 mg/kg; and
 - Lead – 2.3 mg/kg.

None of the RCRA metals were detected at a concentration above the MTCA Method A or Method B CULs.

Based on the data collected, no remediation or special handling or disposal of soils appears to be required in AOPC 6.

5.2.7 AOPC 7: Heating Oil UST

5.2.7.1 Soil Samples

A total of six borings were advanced near the heating oil UST in AOPC 7 using DPT and hand auger drilling methods. The boring locations are depicted on Figure 13. A total of six soil samples from depths ranging from 8 to 20 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

Neither DRO, ORO, or BTEX compounds were detected at concentrations exceeding the compound-specific MDL for the associated analysis performed in any of the samples submitted from AOPC 7.

Based on the data collected, no remediation or special handling or disposal of soils appears to be required in AOPC 7.

5.2.8 AOPC 8: Heating Oil USTs

5.2.8.1 Soil Samples

A total of three borings were advanced near the former heating oil USTs in AOPC 8 using DPT drilling methods. The boring locations are depicted on Figure 14. A total of three soil samples from depths ranging from 8.5 to 9 feet, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 8 are as follows:

- DRO was detected at concentrations ranging from 290 mg/kg to 940 mg/kg, which are less than the MTCA Method A Soil CUL of 2,000 mg/kg for DRO.
- ORO was detected at concentrations ranging from 1,700 mg/kg to 4,600 mg/kg, which are above the MTCA Method A Soil CUL of 2,000 mg/kg for ORO.
- BTEX compounds were not detected at concentrations exceeding the compound-specific MDL for the associated analysis performed.

Based on the data collected in AOPC 8, a release of DRO has occurred to soil at concentrations that are above the MTCA Method A Soil CULs and will require remediation during development. Due to restrictions on sampling areas due to dense infrastructure, it was not practicable to define the nature and extent of DRO impacts to soil. Such sampling should be conducted as a component of remedial efforts to be conducted simultaneously with development.

5.2.9 AOPC 9: Hoists

5.2.9.1 Soil Samples

A total of six borings were advanced near the hydraulic hoists in AOPC 9 using DPT drilling methods. The boring locations are depicted on Figure 7. A total of six soil samples from depths ranging from 4 to 8 feet bgs, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 9 are as follows:

- DRO was detected at concentrations ranging from 120 mg/kg to 810 mg/kg, which are less than the MTCA Method A Soil CUL of 2,000 mg/kg for DRO.
- ORO was detected in one soil sample at a concentration of 640 mg/kg, which is less than the MTCA Method A Soil CUL of 2,000 mg/kg for ORO.

Although no COPCs were detected in soil at concentrations above the MTCA Method A Soil CULs, special handling and disposal will be required during development for soils containing low-concentration DRO and ORO. Additional sampling should be performed during development to accurately define the area requiring special handling.

5.2.10 AOPC 10: SUMPS

5.2.10.1 Soil Samples

AOPC 10 consists of select shallow ground water de-watering sumps located throughout the facility. A total of three borings were advanced near sumps labeled as 10c, 10d, and 10g using DPT drilling methods. All other sumps were inaccessible for subsurface drilling. These sumps and boring locations are depicted on Figures 6, 7, and 8. A total of three soil samples from depths ranging from 5 to 7 feet bgs, were submitted for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from AOPC 10 are as follows:

- Neither DRO, ORO, VOCs, nor PCBs were detected at a concentration exceeding the compound-specific MDL for the associated analyses performed in any of the samples submitted from AOPC 10.
- The following RCRA metals and maximum concentrations were detected above the compound-specific MDL:
 - Chromium – 21.2 mg/kg;
 - Arsenic – 2.3mg/kg; and

- Lead – 8.69 mg/kg.

With the exception of chromium, none of the RCRA metals were detected at a concentration above the MTCA Method A Soil CUL or Method B CUL.

5.2.10.2 Sump Water

As indicated above in the summaries for AOPC 2 and AOPC 4, DRO and ORO were detected in the water from the sump located near the interior ink tanks and in the sump located in the compressor room. A summary of these conditions are included above in Sections 5.2.2.2 (AOPC 2) and 5.2.4.4 (AOPC 4).

One additional sump water sample was collected in a sump adjacent to the north of AOPC 7 (10a). This sample location (S-2) is depicted on Figure 13. No COPCs were detected at a concentration exceeding the compound-specific MDL for the associated analyses performed

6.0 POTENTIAL OFF-SITE SOURCES

A total of three monitoring wells were installed along the northern subject property boundary in order to determine the potential for off-site contamination migration onto the subject property from the northern adjacent Troy Laundry facility. One of the three ground water wells were screened across the laterally discontinuous shallow ground water located at a depth of about 15 feet (MW-1). The other two wells (MW-2 and MW-3) were screened across the regional aquifer table present at depths of 88 to 95 feet. Monitoring well locations are depicted on Figure 15.

During advancement of MW-3, the laterally discontinuous shallow ground water was encountered at a depth of 20 feet. A water reconnaissance ground water sample was collected from this ground water zone prior to further advancement. After collecting the shallow ground water sample, the conductor casing was installed to seal off the shallow ground water, as described in the Methodology section of this report. The laterally discontinuous ground water was not encountered during advancement of boring MW-2.

6.1 Soil Samples

A total of six soil samples from depths ranging from 10 to 100 feet, were submitted during advancement of monitoring well borings for the range of analyses indicated in Table 1. The analytical results are summarized in Table 2.

The analytical results for soil samples collected and analyzed from these borings are as follows:

- Neither DRO, ORO, nor VOCs were detected at a concentrations exceeding the compound-specific MDLs for the associated analyses performed in any of the samples.
- The following RCRA metals and maximum concentrations were detected above their compound-specific MDLs:

- Chromium – 14.4 mg/kg;
- Arsenic – 1.8 mg/kg; and
- Lead – 2.31 mg/kg.

None of the RCRA metals were detected at concentrations above their MTCA Method A Soil CULs or Method B CULs.

6.2 Shallow Ground Water Samples

A total of two ground water samples were submitted from the laterally discontinuous ground water along the northern property line (MW-1 and MW-3) for the range of analyses indicated in Table 1. The analytical results are summarized in Table 4.

The analytical results for shallow ground water is as follows:

- Neither DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed in any of the samples.
- The following RCRA metals and maximum concentrations were detected above the compound-specific MDL:
 - Arsenic – 1.38 µg/L; and
 - Dissolved Arsenic – 1.10 µg/L.

None of the RCRA metals were detected at a concentration above the MTCA Method A GW CUL or Method B CUL.

6.3 Deep Ground Water Samples

A total of two ground water samples were submitted from the deep regional aquifer along the northern property line (MW-2 and MW-3) for the range of analyses indicated in Table 1. The analytical results are summarized in Table 4.

Each well was installed in opposite corners of the subject property northern border and are located as follows:

- MW-2 – Northwestern corner
- MW-3 – Northeastern corner

The analytical results for deep ground water are summarized individually.

6.3.1 Northwestern Corner (MW-2)

The ground water sample collected from the deep aquifer in the northwestern corner of the subject property (MW-2) was impacted with compounds consistent with dry cleaning activities. In addition, there were detections of fuel-related compounds. The following compounds and concentrations were detected in northwestern corner deep ground water at concentrations above their respective MTCA Method A GW CULs:

- Vinyl chloride (VC) – 1.3 µg/L;
- TCE – 5.6 µg/L;
- Tetrachloroethene (PCE) – 10 µg/L; and
- Total Chromium – 57.1 µg/L.

Followup analysis for dissolved chromium was below the MTCA Method A GW CUL indicating that the total result was likely due to turbidity and not an actual release.

VC, TCE and PCE were all similarly detected at the Troy Laundry facility and are likely the result of contamination migrating onto the subject property from the north.

The following compounds and associated concentrations were detected in northwestern deep ground water at concentrations below their respective ground water cleanup levels (if available):

- GRO – 340 µg/L;
- DRO – 400 µg/L;
- Cis-1,2-dichloroethene – 22 µg/L;
- Chloroform – 2.3 µg/L;
- O-xylene – 1.7 µg/L;
- Isopropylbenzene – 3.2 µg/L;
- 1,3,5-Trimethylbenzene – 3.9 µg/L;
- Tert-Butylbenzene – 1.3 µg/L;
- 1,2,4-Trimethylbenzene – 34 µg/L;
- sec-Butylbenzene – 3.9 µg/L;

- p-Isopropyltoluene – 2 µg/L;
- Arsenic – 2.19 µg/L; and
- Lead – 4.84 µg/L.

6.3.2 Northeastern Corner (MW-3)

Neither DRO, ORO, nor VOCs were detected at a concentration exceeding the compound-specific MDL for the associated analysis performed in any of the samples.

7.0 CONCLUSIONS

The following conclusions are supported by the findings of this Limited Subsurface Investigation:

- A total of four AOPCs will require remedial actions. Those four COPCs have soil and/or water with contaminants of concern at concentrations above potentially applicable cleanup levels and include:
 - AOPC 2 (Interior Tank Area);
 - AOPC 4 (Compressor Room);
 - AOPC 5 (Northern UST Complex and Fuel Dispenser); and
 - AOPC 8 (Heating Oil USTs).
- After completion of remedial actions based on attainment of cleanup levels in AOPC 2, AOPC 4, AOPC 5, and AOPC 8, additional soils will likely remain beyond that limits of the remedial excavation that contain detectable concentrations of contaminants of concern. These soils impacted at concentrations below cleanup levels will still require specialized handling and disposal and cannot be disposed off-Site as “clean” soils are re-used as “clean” fill material.
- Other soils are present at the Site that require special handling and disposal. These soils include those that may be impacted with concentrations of contaminants of concern that are below cleanup levels but cannot be transported off-Site for use as “clean” fill or disposed of as “clean” based on the MTCA regulation. These soils are located in AOPC 1 (Printing Presses) and AOPC 9 (Hoists) where soils are impacted with contaminants at concentrations that are below the MTCA Method A Soil CULs.
- A total of at least 11 USTs will be encountered at the subject property during development and will require decommissioning in accordance with applicable regulations. Nine of the USTs are located in areas that have confirmed impacts requiring remediation (AOPC 2, AOPC 5, and AOPC 8). While impacts were not identified next to the remaining two USTs

located in AOPC 6 and AOPC 7, it is not uncommon to encounter soils that will require special handling and disposal associated with these USTs.

- Environmental conditions at the subject property are not fully characterized. Soil and ground water at the subject property has been investigated to the maximum extent practicable considering access limitations, the current level of development, and the limited room available for the collection of subsurface samples. It is possible that additional impacts may be encountered during redevelopment activities. If apparent impacts are encountered in soil based on odor, discoloration or other indicators, a qualified environmental consultant should be contacted to assess actual conditions and assist in compliance with applicable regulations (if any).
- Ground water encountered during development near AOPC 5 and other areas on the northern portion of the subject property will require special handling. Laterally discontinuous shallow ground water is impacted with TCE in AOPC 5 (Northern UST Complex and Fuel Dispenser) and may require remediation during redevelopment.
- Based on the available data and the available data for the Troy Laundry Site, it is advisable to assume that shallow ground water encountered along the northern property boundary should be contained during development activities and analyzed prior to disposal.
- Deep ground water in the northwestern portion of the subject property is impacted with dry-cleaning related compounds, which likely originate from the Troy Laundry Site. The extent of these impacts was not determined during this investigation and additional sampling may be warranted. Based upon the proximity of the subject property to the Troy Laundry Site and the known conditions at that Site, Onni should evaluate the installation of a vapor barrier during redevelopment of the subject property.
- Several of the printing presses will require remedial action (i.e., industrial cleaning) prior to decommissioning due to the presence of PCB surface impacts. In addition, it will be necessary to assess the concrete floor and walls to ensure that the concrete surrounding the presses does not also require industrial cleaning prior to demolition. This additional sampling and analysis should be completed prior to decommissioning and demolition.
- Ground water conditions beneath the subject property have not been fully investigated due to the limited availability for access of drilling equipment. It is possible that additional ground water impacts exist at the subject property as a result of on-site activities. These conditions should be evaluated during the redevelopment of the subject property.
- The work conducted herein was performed as a screening level assessment and is not considered a full MTCA-compliant Remedial Investigation. Several data gaps exist in the characterization of the subject property prior and during implementation of remedial actions. Further sampling is not currently possible given the dense above and below grade infrastructure of the facility. EPI recommends preparing a work plan for further necessary investigation and remedial action that can be implemented concurrently with development.

8.0 DISCLAIMER

As applicable and available within the project schedule and budget, EPI has completed the agreed scope of services employing professional standards applicable in the industry today. We assume no risk for existing conditions on the subject property.

To the extent that these services have required judgment, there can be no assurance that fully definitive or desired results were obtained, or if any results were obtained, that they were supportive of any given course of action. The services have included the application of judgment to scientific principles; to that extent, certain results of this work have been based on subjective interpretation. We make no warranties, express or implied including, without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this letter report is not to be construed as legal advice.

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Tables

Table 1
 Summary of Requested Analyses
 Subsurface Investigation Report
 Seattle Times Building
 1120 John Street, Seattle, Washington

AOPC	Location	Drilling Method	Sample	Depth ^a (Feet)	GRO ^b	DRO/ORO ^c	BTEX ^d	VOCs ^e	EDB/EDC MTBA ^f	cPAHs ^g	PCBs ^h	RCRA Metals ⁱ
AOPC 1 Printing Press Area	P-1	DPT	Soil	0	X	X		X			X	X
	P-2	DPT	Soil	0	X	X		X			X	X
	P-3	DPT	Soil	0	X	X		X			X	X
	P-4	DPT	Soil	0	X	X		X			X	X
	P-5	DPT	Soil	0	X	X		X			X	X
	P-6	DPT	Soil	0	X	X		X			X	X
	P-7	DPT	Soil	0	X	X		X			X	X
	P-8	DPT	Soil	1	X	X		X			X	X
	P-9	DPT	Soil	1.5	X	X		X			X	X
	P-10	DPT	Soil	1.5	X	X		X			X	X
	P-11	-	Wipe	-							X	
	P-12	-	Wipe	-							X	
	P-13	-	Wipe	-							X	
	P-14	-	Wipe	-							X	
	P-15	DPT	Soil	1.5			X		X		X	X
	P-16	DPT	Soil	3			X		X		X	X
	P-17	DPT	Soil	1.5			X		X		X	X
	P-18	DPT	Soil	1.5			X		X		X	X
	P-19	DPT	Soil	1.5			X		X		X	X
			Soil	4			X		X		X	X
	P-20	DPT	Soil	1.5			X		X		X	X
	P-21	-	Wipe	-							X	
	P-22	-	Wipe	-							X	
	P-23	-	Wipe	-							X	
	P-24	-	Wipe	-							X	
	P-25	-	Wipe	-							X	
	P-26	-	Wipe	-							X	
	P-27	-	Wipe	-							X	
	P-28	-	Wipe	-							X	
	P-29	-	Wipe	-							X	
	P-30	-	Wipe	-							X	
	P-31	-	Wipe	-							X	
	P-32	-	Wipe	-							X	
	P-33	-	Wipe	-							X	
	P-34	-	Wipe	-							X	
	P-35	-	Wipe	-							X	
	P-36	-	Wipe	-							X	
	P-37	-	Wipe	-							X	
	P-38	-	Wipe	-							X	
	P-39	-	Wipe	-							X	
P-40	-	Wipe	-							X		

Table 1
 Summary of Requested Analyses
 Subsurface Investigation Report
 Seattle Times Building
 1120 John Street, Seattle, Washington

AOPC	Location	Drilling Method	Sample	Depth ^a (Feet)	GRO ^b	DRO/ORO ^c	BTEX ^d	VOCs ^e	EDB/EDC MTBA ^f	cPAHs ^g	PCBs ^h	RCRA Metals ⁱ
AOPC 2 Interior Ink Tanks	T-1	DPT	Soil	4		X		X				X
	T-1A ⁱ	DPT	Soil	4		X		X			X	X
	T-2	DPT	Soil	1.75		X		X				X
		DPT	Soil	4.5		X		X				X
	T-3	DPT	Soil	2		X		X				X
AOPC 3 Ink Room	I-1	DPT	Soil	5	X	X		X				X
	I-2	DPT	Soil	5	X	X		X				X
	I-3	DPT	Soil	5	X	X		X				X
	I-4	DPT	Soil	5	X	X		X				X
AOPC 4 Compressor Room	C-1	DPT	Soil	0.75	X	X		X			X	X
	C-2	DPT	Soil	0.75	X	X		X			X	X
	C-3	DPT	Soil	0.75	X	X		X			X	X
	C-4	-	Wipe	-							X	
	C-5	-	Wipe	-							X	
	C-6	-	Wipe	-							X	
	C-7	-	Product	-							X	
	C-8	-	Product	-							X	
	C-9	-	Product	-							X	
	C-10	DPT	Soil	0.5		X					X	
	C-11	DPT	Soil	0.5		X					X	
	C-12	DPT	Soil	0.5		X					X	
	C-13	-	Wipe	-							X	
	C-14	-	Wipe	-							X	
	C-15	-	Wipe	-							X	
AOPC 5 Northern UST Complex and Dispenser	U-1	HSA	Soil	15	X	X	X					
	U-2	HSA	Soil	15	X	X	X					
	U-3	HSA	Soil	8	X	X	X					
	U-6	DPT	Soil	10					X			
		DPT	Soil	15	X	X	X	X				
		-	GW	18	X	X	X	X				
	U-7	DPT	Soil	15	X	X	X					
	U-8	DPT	Soil	15	X	X	X					
	U-9	DPT	Soil	15	X	X	X					
AOPC 6 Waste Oil UST	W-1	HSA	Soil	10	X	X		X		X	X	X
	W-2	HSA	Soil	10	X	X		X		X	X	X
AOPC 7 (Heating Oil UST)	O-1	DPT	Soil	8		X	X					
	O-2	DPT	Soil	0		X	X					
	O-3	DPT	Soil	5		X	X					
	AOPC7:SB1	DPT	Soil	20		X	X					
	AOPC7:SB2	DPT	Soil	20		X	X					
	AOPC7:SB3	DPT	Soil	20		X	X					
AOPC 8 Heating Oil USTs	A-1	DPT	Soil	9		X	X					
	A-2	DPT	Soil	9		X	X					
	A-3	DPT	Soil	8.5		X	X					

**Table 1
Summary of Requested Analyses
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington**

AOPC	Location	Drilling Method	Sample	Depth ^a (Feet)	GRO ^b	DRO/ORO ^c	BTEX ^d	VOCs ^e	EDB/EDC MTBA ^f	cPAHs ^g	PCBs ^h	RCRA Metals ⁱ	
AOPC 9 Hoists	H-1	DPT	Soil	7		X					X	X	
	H-2	DPT	Soil	4		X					X	X	
	H-3	DPT	Soil	7		X					X	X	
	H-4	DPT	Soil	7		X					X	X	
	H-5	DPT	Soil	7		X					X	X	
	H-6	DPT	Soil	8		X					X	X	
AOPC 10 Sumps	S-1	DPT	Soil	7		X		X			X	X	
	S-2	-	GW	-	X	X		X					
	S-3	DPT	Soil	7		X		X			X	X	
	S-4	DPT	Soil	5		X		X			X	X	
			GW	-	X	X		X					
S-5	-	GW	-	X	X		X						
Potential Off-Site Sources	MW-1	HSA	Soil	10	X	X		X					
		-	GW	88	X	X		X				X	
	MW-2	HSA	Soil	10	X	X		X				X	
		-	GW	15	X	X		X				X	
	MW-3	HSA	Soil	20				X					
			GW	20				X					
			Soil	30				X					
			Soil	80				X					
			Soil	100				X					
	-	GW	-				X						

Notes:

- DPT Direct-push technology drilling.
- HSA Hollow-stem auger drilling.
- X Indicates sample selected for analysis by this method.
- a A depth of "0" indicates sample will be collected immediately beneath subfloor construction. Value indicates depth to water for ground water (GW) samples.
- b Gasoline-range organics (GRO) by NWTPH-Gx Methods.
- c Diesel- and oil-range organics (DRO and ORO) by NWTPH-Dx Methods.
- d Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B.
- e Volatile organic compounds (VOCs) by EPA Method 8260C.
- f Ethylene dibromide (EDB) and Ethylene dichloride (EDC) and Methyl tertiary butyl ether (MTBE) by EPA Method 8260B.
- g Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by EPA Method 8270.
- h Polychlorinated biphenyls (PCBs) by EPA Method 8082.
- i Resource Conservation and Recovery Act (RCRA) Metals (chromium, arsenic, selenium, silver, cadmium, barium, and lead) by EPA Method 200.8. Mercury by EPA Method 1631E.
- j "A" indicates that the sample will be archived by the lab for potential future analysis.

Compounds:

- GRO Gasoline-range organics
- DRO/ORO Diesel-range organics
- BTEX Benzene, toluene, ethylbenzene, and xylenes
- VOC Volatile organic compound
- EDB Ethylene dibromide
- EDC Ethylene dichloride
- MTBA Methyl tertiary butyl ether
- cPAH Carcinogenic polycyclic aromatic hydrocarbon
- PCB Polychlorinated biphenyl

Table 2
Soil Analytical Results (in mg/kg)
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample Location	Date Sampled	Depth ^a (Feet)	Petroleum Hydrocarbons			BTEX ^d	VOCs ^e	cPAHs ^f	Detected PCBs ^g (AROCLOR 1254)	Detected RCRA Metals ^h					
				GRO ^b	DRO ^c	ORO ^c					Chromium	Arsenic	Silver	Barium	Lead	
AOPC 1 Printing Press Area	P-1	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	19.7	4.95	1.13	89.3	7.41	
	P-2	7/19/12	0	<2	<50	<250	--	ND	--	0.2	17.8	5.5	<1	70.1	12.9	
	P-3	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	15.9	2.88	<1	61.6	11.3	
	P-4	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	22.9	3.11	<1	97.1	5.54	
	P-5	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	18.9	4.47	<1	51.0	5.38	
	P-6	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	14.4	2.36	<1	36.0	4.32	
	P-7	7/19/12	0	<2	<50	<250	--	ND	--	<0.1	13.2	1.73	<1	37.1	1.70	
	P-8	7/20/12	1	<2	<50	<250	--	ND	--	<0.1	16.2	6.02	<1	69.1	8.41	
	P-9	7/24/12	1.5	<2	<50	<250	--	ND	--	<0.1	14.6	2.02	<1	40.9	11.4	
	P-10	7/24/12	1.5	<2	<50	<250	--	ND	--	<0.1	11.8	2.42	<1	45.2	19.7	
	P-15	9/4/12	1.5	--	<50	<250	--	ND	--	<0.1	13.5	2.60	--	--	7.62	
	P-16	9/4/12	3	--	<50	<250	--	ND	--	<0.1	11.8	1.79	--	--	20.4	
	P-17	9/4/12	1.5	--	<50	<250	--	ND	--	<0.1	19.8	8.68	--	--	7.35	
	P-18	9/4/12	1.5	--	<50	<250	--	ND	--	<0.1	24.6	2.57	--	--	5.20	
	P-19	9/4/12	1.5	--	<50	<250	--	ND	--	0.23	25.1	5.13	--	--	7.46	
		9/4/12	4	--	<50	<250	--	ND	--	<0.1	23.4	3.54	--	--	4.80	
P-20	9/4/12	1.5	--	<50	<250	--	ND	--	<0.1	23.8	3.61	--	--	4.99		
AOPC 2 Interior Ink Tanks	T-1	7/19/12	4	--	<50	<250	--	ND	--	--	17.0	5.70	<1	58.6	32.2	
	T-1A	7/20/12	4	--	<50	<250	--	ND	--	<0.1	14.5	1.55	<1	35.7	19.6	
	T-2	7/24/12	1.75	--	<50	<250	--	ND	--	--	21.2	3.24	<1	34.6	2.14	
		7/24/12	4.5	--	<50	<250	--	ND	--	--	17.1	1.16	<1	35.1	1.99	
	T-3	7/24/12	2	--	<50	<250	--	ND	--	--	21.0	1.43	<1	51.7	3.23	
AOPC 3 Ink Room	I-1	7/20/12	5	<2	<50	<250	--	ND	--	--	12.8	1.87	<1	34.6	2.72	
	I-2	7/20/12	5	<2	<50	<250	--	ND	--	--	22.7	2.80	<1	86.5	5.50	
	I-3	7/20/12	5	<2	<50	<250	--	ND	--	--	7.50	<1	<1	23.2	1.29	
	I-4	7/20/12	5	<2	<50	<250	--	ND	--	--	11.7	1.96	<1	41.5	2.80	
AOPC 4 Compressor Room	C-1	7/24/12	0.75	<2	<50	<250	--	ND	--	<0.1	16.9	1.74	<1	43.5	6.49	
	C-2	7/24/12	0.75	<2	<50	<250	--	ND	--	1.3	18.4	2.98	1.69	65.7	47.0	
	C-3	7/24/12	0.75	<2	<50	<250	--	ND	--	<0.1	15.2	1.86	<1	58.0	6.67	
	C-10	9/5/12	0.5	--	<50	<250	--	--	--	<0.1	--	--	--	--	--	
	C-11	9/5/12	0.5	--	<50	<250	--	--	--	<0.1	--	--	--	--	--	
	C-12	9/5/12	0	--	<50	420	--	--	--	1.2	--	--	--	--	--	
AOPC 5 Northern UST Complex and Dispenser	U-1	7/19/12	15	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
	U-2	7/19/12	15	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
	U-3	7/20/12	8	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
	U-6	7/26/12	10	--	--	--	--	ND	--	--	--	--	--	--	--	--
		7/26/12	15	<2	<50	<250	ND	ND	--	--	--	--	--	--	--	--
	U-7	7/26/12	15	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
	U-8	7/26/12	15	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
	U-9	7/26/12	15	<2	<50	<250	ND	--	--	--	--	--	--	--	--	
AOPC 6 Waste Oil UST	W-1	9/4/12	10	<2	<50	<250	--	ND	ND	<0.1	12.4	1.67	--	--	2.3	
	W-2	9/6/12	10	<2	<50	<250	--	ND	ND	<0.1	12.7	2.48	--	--	1.83	

Table 2
Soil Analytical Results (in mg/kg)
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample Location	Date Sampled	Depth ^a (Feet)	Petroleum Hydrocarbons			BTEX ^d	VOCs ^e	cPAHs ^f	Detected PCBs ^g (AROCLOR 1254)	Detected RCRA Metals ^h				
				GRO ^b	DRO ^c	ORO ^c					Chromium	Arsenic	Silver	Barium	Lead
AOPC 7 Heating Oil UST	O-1	9/6/12	8	--	<50	<250	ND	--	--	--	--	--	--	--	--
	O-2	9/6/12	9	--	<50	<250	ND	--	--	--	--	--	--	--	--
	O-3	9/6/12	5	--	<50	<250	ND	--	--	--	--	--	--	--	--
	AOPC7:SB1	5/17/13	20	--	<50	<250	ND	--	--	--	--	--	--	--	--
	AOPC7:SB2	5/17/13	20	--	<50	<250	ND	--	--	--	--	--	--	--	--
	AOPC7:SB3	5/17/13	20	--	<50	<250	ND	--	--	--	--	--	--	--	--
AOPC 8 Heating Oil USTs	A-1	9/6/12	9	--	560 x	4,600	ND	--	--	--	--	--	--	--	--
	A-2	9/5/12	9	--	290 x	1,700	ND	--	--	--	--	--	--	--	--
	A-3	9/5/12	8.5	--	940 x	4,600	ND	--	--	--	--	--	--	--	--
AOPC 9 Hoists	H-1	9/4/12	7	--	<50	<250	--	--	--	<0.1	20.7	2.16	--	--	4.21
	H-2	9/4/12	4	--	<50	<250	--	--	--	<0.1	11.9	3.1	--	--	1.87
	H-3	9/4/12	7	--	810	640	--	--	--	<0.1	21.3	2.44	--	--	4.02
	H-4	9/4/12	7	--	120	<250	--	--	--	<0.1	15.2	1.54	--	--	2.84
	H-5	9/6/12	7	--	<50	<250	--	--	--	<0.1	18.5	1.76	--	--	3.89
	H-6	9/6/12	8	--	<50	<250	--	--	--	<0.1	14.1	1.25	--	--	1.65
AOPC 10 Sumps	S-1	9/4/12	7	--	<50	<250	--	ND	--	<0.1	20.8	2.03	--	--	4.27
	S-3	9/6/12	7	--	<50	<250	--	ND	--	<0.1	18.3	2.30	--	--	3.67
	S-4	9/5/12	5	--	<50	<250	--	ND	--	<0.1	21.2	1.85	--	--	8.69
Potential Off-Site Sources	MW-1	9/5/12	10	<2	<50	<250	--	ND	--	--	13.1	1.80	--	--	2.31
	MW-2	9/4/12	10	<2	<50	<250	--	ND	ND	<0.1	14.4	1.68	--	--	2.15
	MW-3	4/29/13	20	--	--	--	--	ND	--	--	--	--	--	--	--
		4/29/13	30	--	--	--	--	ND	--	--	--	--	--	--	--
		4/29/13	80	--	--	--	--	ND	--	--	--	--	--	--	--
		4/30/13	100	--	--	--	--	ND	--	--	--	--	--	--	--
MTCA Method A Soil Cleanup Level for Unrestricted Land Usesⁱ				30/100^j	2,000	2,000	N/A^k	N/A	N/A	1^l	2,000^m	20	400ⁿ	16,000ⁿ	250

Notes:

- All results presented in milligrams/kilogram (mg/kg).
- Bold** Bold results indicate that the compound was detected.
- Shaded** Shaded cells indicate that result exceeded the cleanup level.
- Not analyzed.
- < Concentration is less than the analytical method detection limit.
- ND Concentration is less than the compound-specific method detection limit.
- ^a A depth of "0" indicates sample will be collected immediately beneath subfloor construction.
- ^b Gasoline-range organics (GRO) by NWTPH-Gx Methods.
- ^c Diesel- and oil-range organics (DRO and ORO) by NWTPH-Dx Methods.
- ^d Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B.
- ^e Volatile organic compounds (VOCs) by EPA Method 8260C.
- ^f Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by EPA Method 8270D SIM.
- ^g Polychlorinated biphenyls (PCBs) by EPA Method 8082.
- ^h Resource Conservation and Recovery Act (RCRA) Metals chromium, arsenic, silver, barium, and lead by EPA Method 200.8. Mercury by EPA Method 1631E. There were no detections of cadmium, selenium, and mercury in any samples.
- ⁱ Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 (WAC 173-340-900).
- ^j Cleanup level is 100 mg/kg for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylene are less than 1% of the gasoline mixture, 30 mg/kg for all other gasoline mixtures.
- ^k Not applicable; cleanup level varies for each compound within the compound group.
- ^l Cleanup level based on total value for all PCBs.
- ^m Cleanup level is 19 for chromium VI, 2,000 for chromium III.
- ⁿ No MTCA Method A Soil Cleanup Level for Unrestricted Land Uses available. MTCA Method B Soil Cleanup Level based on direct contact presented.

Qualifier:

- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Compounds:

- GRO Gasoline-range organics
- DRO Diesel-range organics
- ORO Oil-range organics
- BTEX Benzene, toluene, ethylbenzene, and xylenes
- VOC Volatile organic compound
- cPAH Carcinogenic polycyclic aromatic hydrocarbon
- PCB Polychlorinated biphenyl

Table 3
Wide Analysis Results (in ug/100 cm²)
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample Location	Date Sampled	Detected Polychlorinated Biphenyls ^a (AROCOR 1254)
AOPC 1 Printing Press Area	P-11	7/24/12	2.7 jl
	P-12	7/24/12	4.6 jl
	P-13	7/24/12	2.2 jl
	P-14	7/24/12	5.5 jl
	P-21	9/7/12	12
	P-22	9/7/12	1.4
	P-23	9/7/12	7.1
	P-24	9/7/12	7.6
	P-25	9/7/12	5.8
	P-26	9/7/12	3.1
	P-27	9/7/12	1.5
	P-28	9/7/12	5.0
	P-29	9/7/12	2.5
	P-30	9/7/12	1.9
	P-31	9/7/12	3.0
	P-32	9/7/12	5.7
	P-33	9/7/12	1.9
	P-34	9/7/12	9.7
	P-35	9/7/12	4.8
	P-36	9/7/12	6.7
P-37	9/7/12	8.6	
P-38	9/7/12	9.3	
P-39	9/7/12	23	
P-40	9/7/12	8.9	
AOPC 4 Compressor Room	C-4	7/24/12	<1.0
	C-5	7/24/12	<1.0
	C-6	7/24/12	<1.0
	C-13	9/7/12	0.47
	C-14	9/7/12	0.50
	C-15	9/7/12	0.54
EPA Action Level			10

Notes:

All results presented in micrograms/square hundredths centimeters (µg/100 cm²).

Bold Bold results indicate that the compound was detected at a concentration greater than the method detection limit.

Shaded cells indicate that result exceeded the action level.

jl The laboratory control sample analytical result is out of control limits. The reported concentration should be considered an estimate.

a Polychlorinated biphenyls (PCBs) by EPA Method 8082.

Table 5
Shallow Sump Ground Water Analytical Results (in µg/L)
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington

Area of Potential Concern	Sample Location	Date Sampled	Petroleum Hydrocarbons			Detected Volatile Organic Compounds ^c
			Gasoline-Range Organics (GRO) ^a	Diesel-Range Organics (DRO) ^b	Oil-Range Organics (ORO) ^b	
AOPC 10 Sumps	S-2	9/6/12	<100	<50	<250	<1
	S-4	9/7/12	<100	310 x	1,900	<1
	S-5	9/6/12	<100	110,000 x	10,000 x	1.0
MTCA Method A Cleanup Levels for Ground Water^d						
			1,000^e	500	500	NVE

Notes:

All results presented in micrograms/liter (µg/L).

Shaded cells indicate that result exceeded the cleanup level.

Not analyzed.

< Concentration is less than the analytical method detection limit.

^a Gasoline-range organics (GRO) by NWTPH-Gx Methods.

^b Diesel- and oil-range organics (DRO and ORO) by NWTPH-Dx Methods.

^c Volatile organic compounds (VOCs) by EPA Method 8260C.

^d Model Toxics Control Act (MTCA) Method A Cleanup Levels for Ground Water, Table 720-1 (WAC 173-340-900).

^e MTCA Method A Cleanup Level for Ground Water for GRO with no detectable benzene in ground water.

Qualifier:

x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Table 6
Product Analysis (in mg/kg)
Subsurface Investigation Report
Seattle Times Building
1120 John Street, Seattle, Washington

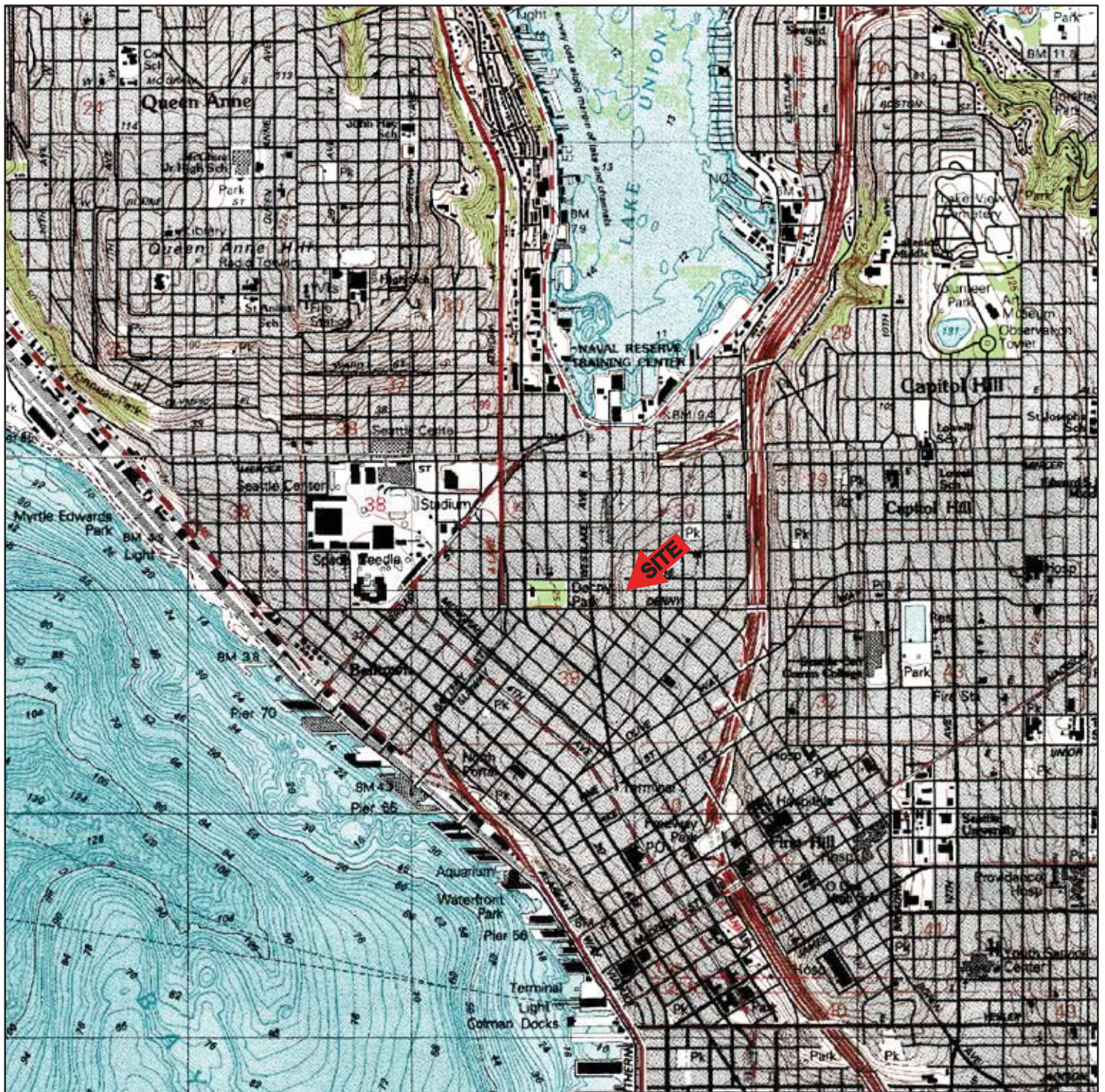
Area of Potential Concern	Sample Location	Date Sampled	Polychlorinated Biphenyls ^a
AOPC 4 Compressor Room	C-7	7/24/12	<2
	C-8	7/24/12	<2
	C-9	7/24/12	<2

Notes:

All results presented in milligrams/kilogram (mg/kg).

a Polychlorinated biphenyls (PCBs) by EPA Method 8082.

Figures




NOTES:

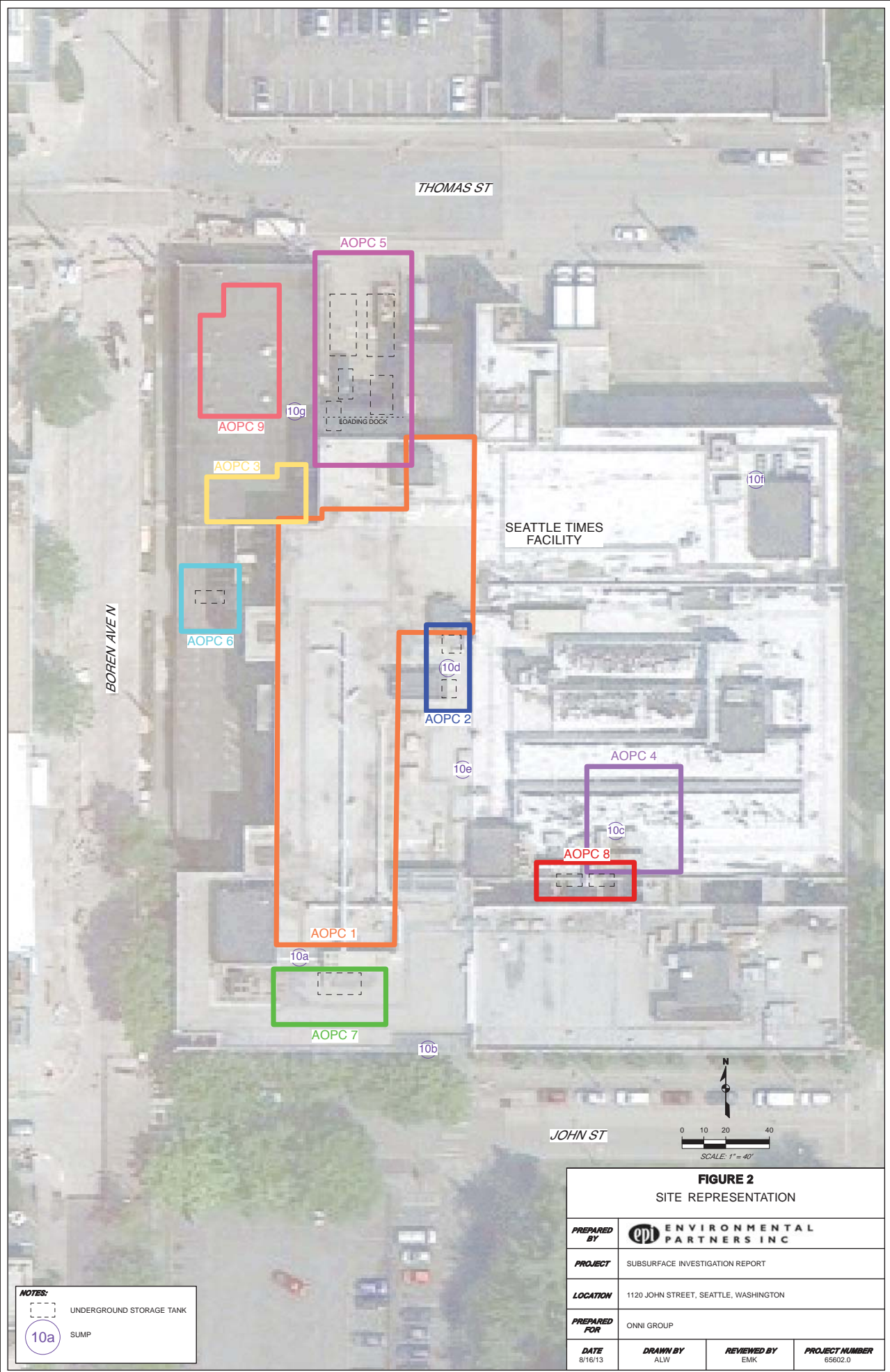
SOURCE: USGS 7.5 MINUTE QUADRANGLE (TOPOGRAPHIC)

SEATTLE NORTH, WA 1983

SEATTLE SOUTH WA 1983


SCALE = 1:25,000

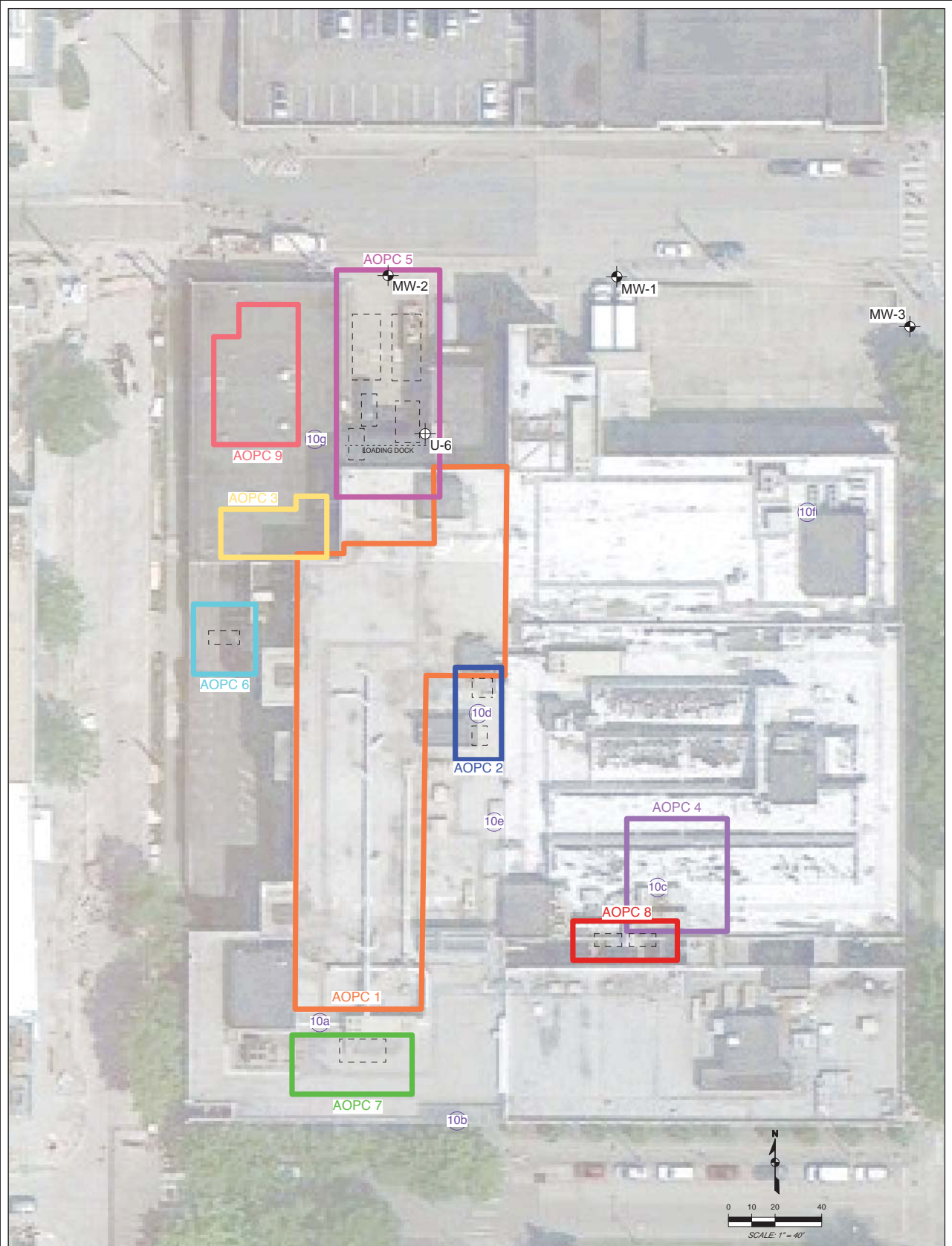
FIGURE 1			
GENERAL VICINITY MAP			
PREPARED BY	 ENVIRONMENTAL PARTNERS INC		
REPORT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

 UNDERGROUND STORAGE TANK
 SUMP

FIGURE 2 SITE REPRESENTATION			
PREPARED BY	 ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0

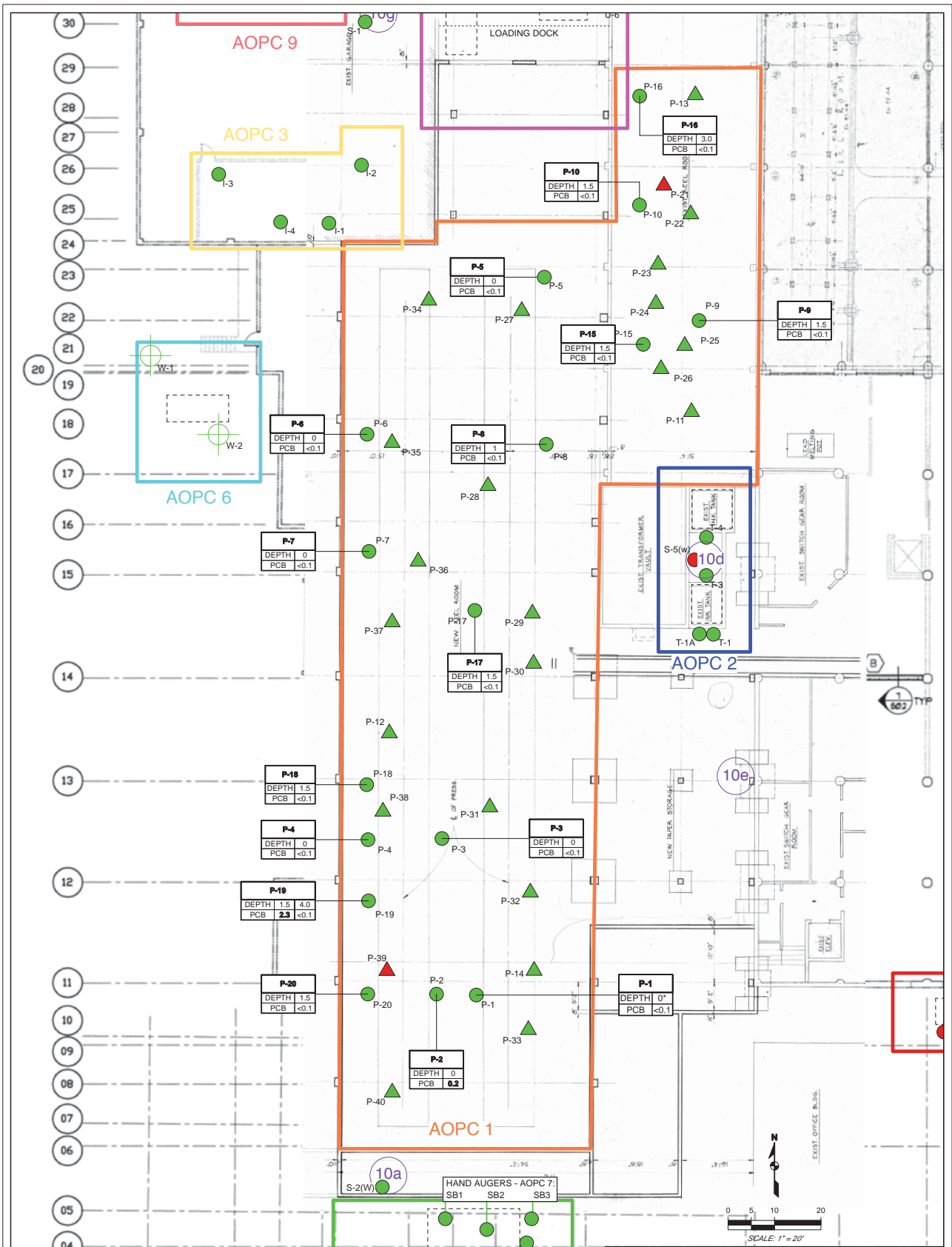


NOTES:

	RECONNAISSANCE GROUND WATER SAMPLING LOCATION
	MONITORING WELL LOCATION
	UNDERGROUND STORAGE TANK
	SUMP

FIGURE 3
GROUND WATER MONITORING WELL LOCATIONS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



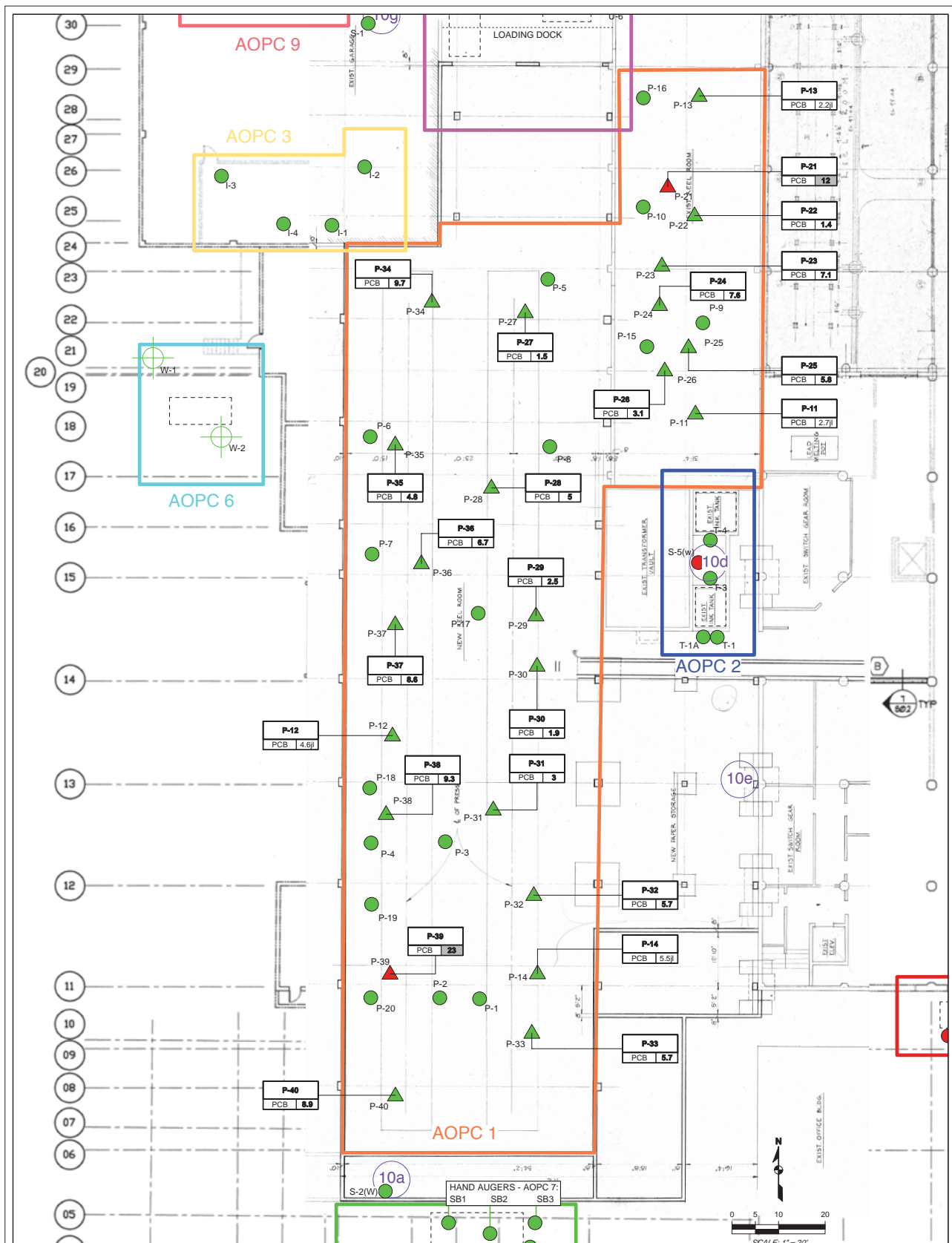
- NOTES:**
- SHALLOW DIRECT PUSH BORING
 - ▲ WIPE SAMPLE
 - ⊕ HSA BORING
 - ⊖ UNDERGROUND STORAGE TANK
 - 10a SUMP
 - RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS.
 - GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS.

SAMPLE NAME	P-3	
DEPTH	0	* CONCENTRATION IN mg/kg.
PCB	<0.1	* < VALUE INDICATES NOT DETECTED ABOVE THE METHOD DETECTION LIMIT.
		BOLD INDICATES DETECTION.

* DEPTH IN FEET. 0 DEPTH INDICATES SAMPLE COLLECTED IMMEDIATELY BENEATH CONCRETE AND SUB-BASE.

FIGURE 4
SOIL ANALYTICAL DATA - PCBs
AOPC 1 - PRINTING PRESS AREAS

PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

- ▲ WIPE SAMPLE
- SUMP
- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED EPA ACTION LEVELS.
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED EPA ACTION LEVELS.

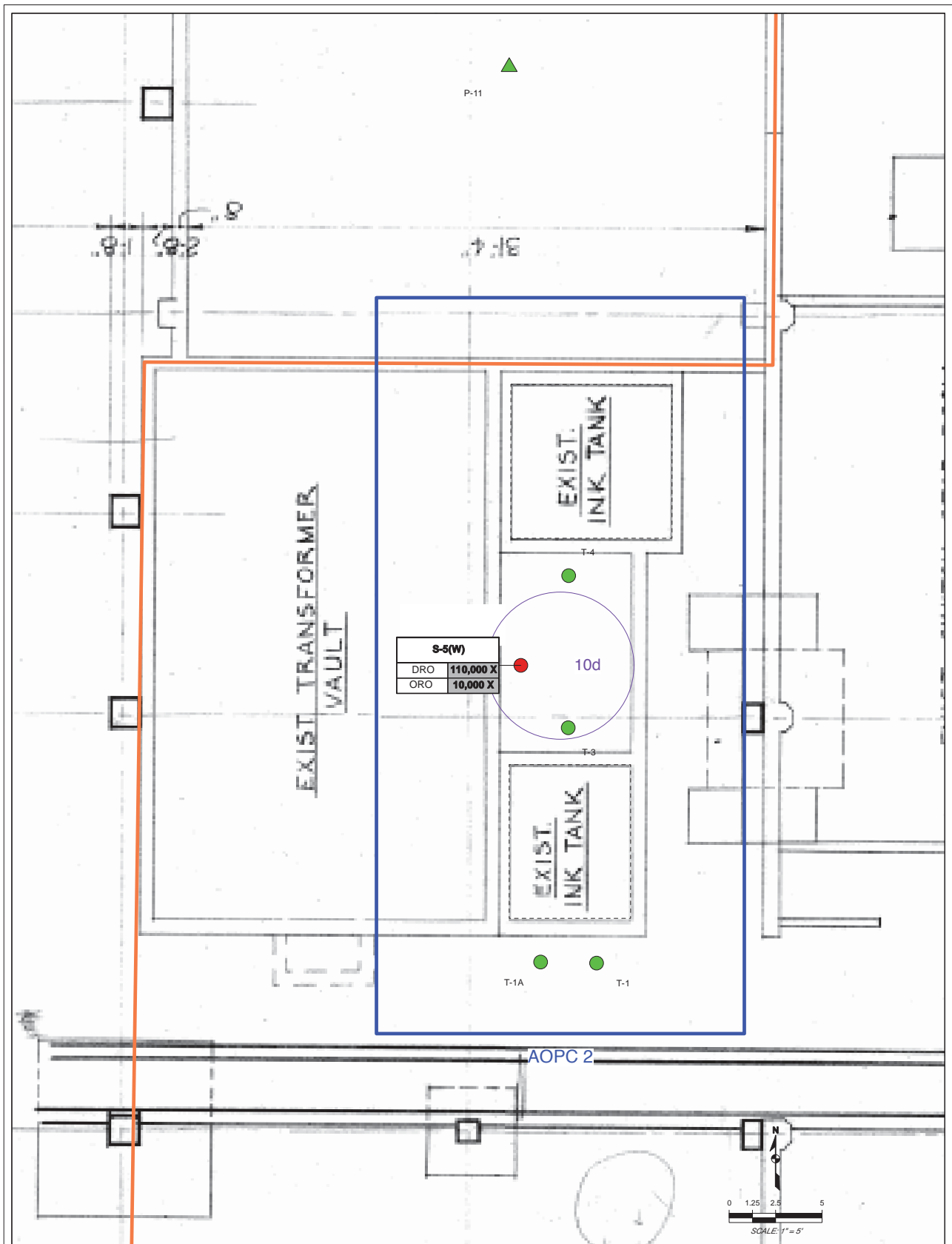
SAMPLE NAME: **P-3**
 POLYCHLORINATED BIPHENYLS - PCB **55** - CONCENTRATION IN $\mu\text{g}/100\text{ cm}^2$

|| - THE ANALYTE RESULT IN THE LABORATORY CONTROL SAMPLE IS OUT OF CONTROL LIMITS. THE REPORTED CONCENTRATION SHOULD BE CONSIDERED AN ESTIMATE.

BOLD INDICATES DETECTION. **SHADED** INDICATES EXCEEDS THE EPA ACTION LEVEL OF $10\ \mu\text{g}/100\text{ cm}^2$

FIGURE 5
 WIPE ANALYTICAL DATA - PCBs
 AOPC1 - PRINTING PRESS AREAS

PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- UNDERGROUND STORAGE TANK
- SUMP

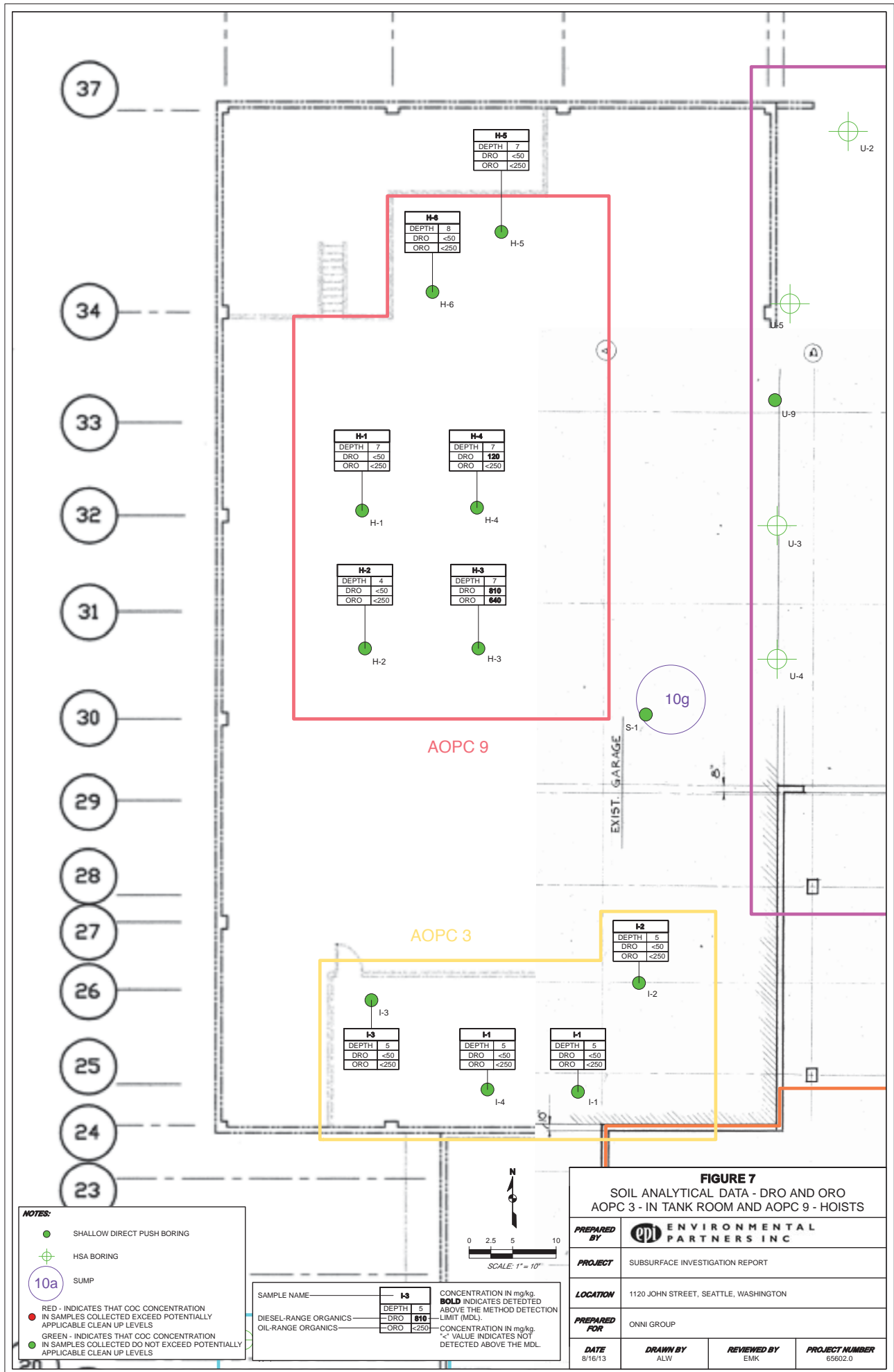
10a

- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

SAMPLE NAME	S-5(W)	CONCENTRATION IN µg/L
DIESEL-RANGE ORGANICS	DRO 110,000 X	BOLD INDICATES DETECTION
OIL-RANGE ORGANICS	ORO 10,000 X	SHADED INDICATES EXCEEDS A POTENTIAL CUL.

FIGURE 6
 SAMPLING LOCATIONS AND SUMP WATER ANALYTICAL DATA - DRO AND ORO
 AOPC 2 - INTERIOR INK TANKS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



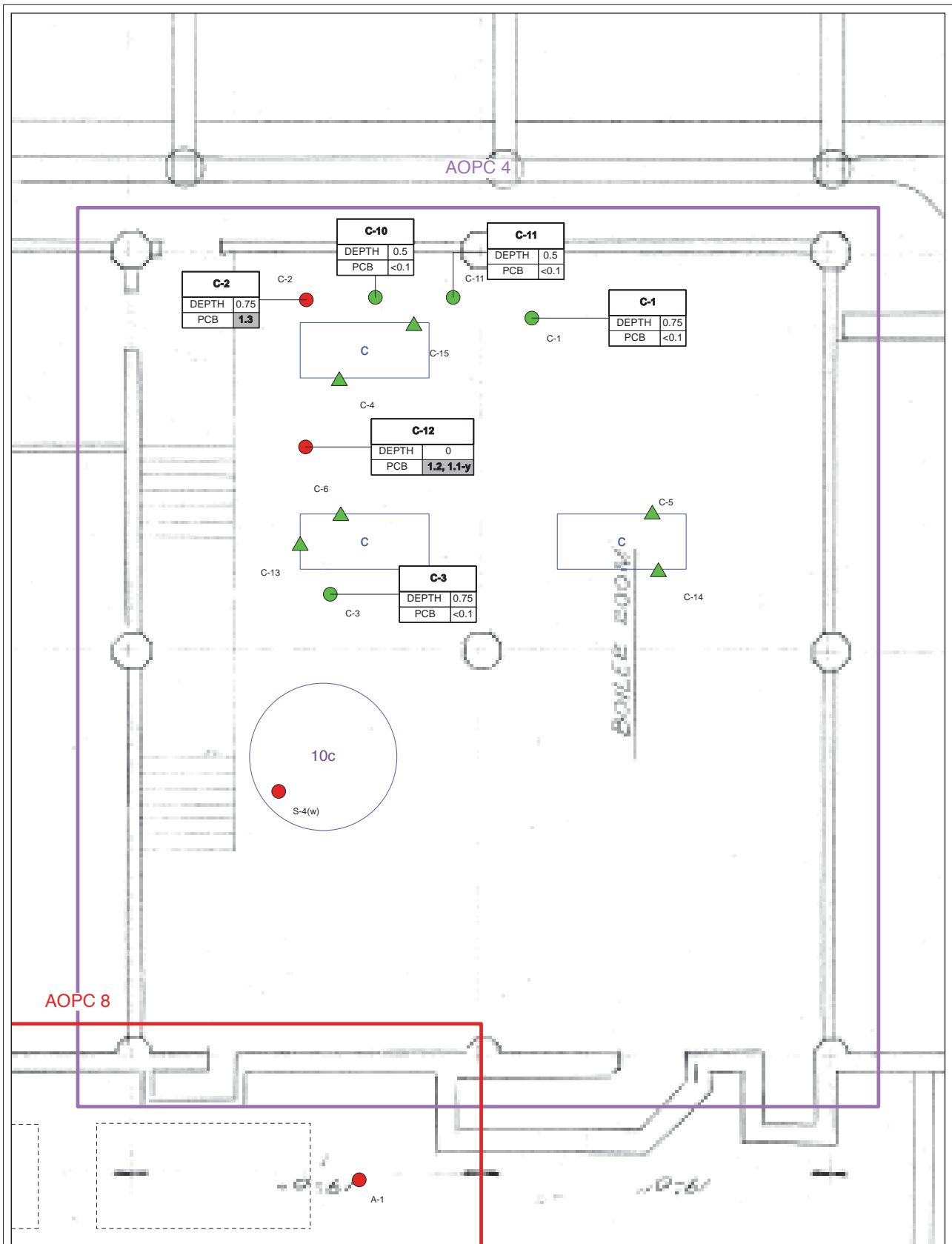
NOTES:

- SHALLOW DIRECT PUSH BORING
- ⊕ HSA BORING
- 10a SUMP
- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

SAMPLE NAME	I-3	CONCENTRATION IN mg/kg.
DIESEL-RANGE ORGANICS	DEPTH 5	DRO INDICATES DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL).
OIL-RANGE ORGANICS	DRO 810	CONCENTRATION IN mg/kg.
	ORO <250	"<" VALUE INDICATES NOT DETECTED ABOVE THE MDL.

FIGURE 7
SOIL ANALYTICAL DATA - DRO AND ORO
AOPC 3 - IN TANK ROOM AND AOPC 9 - HOISTS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- SUMP
- COMPRESSOR UNIT

10a

RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS.

GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS.

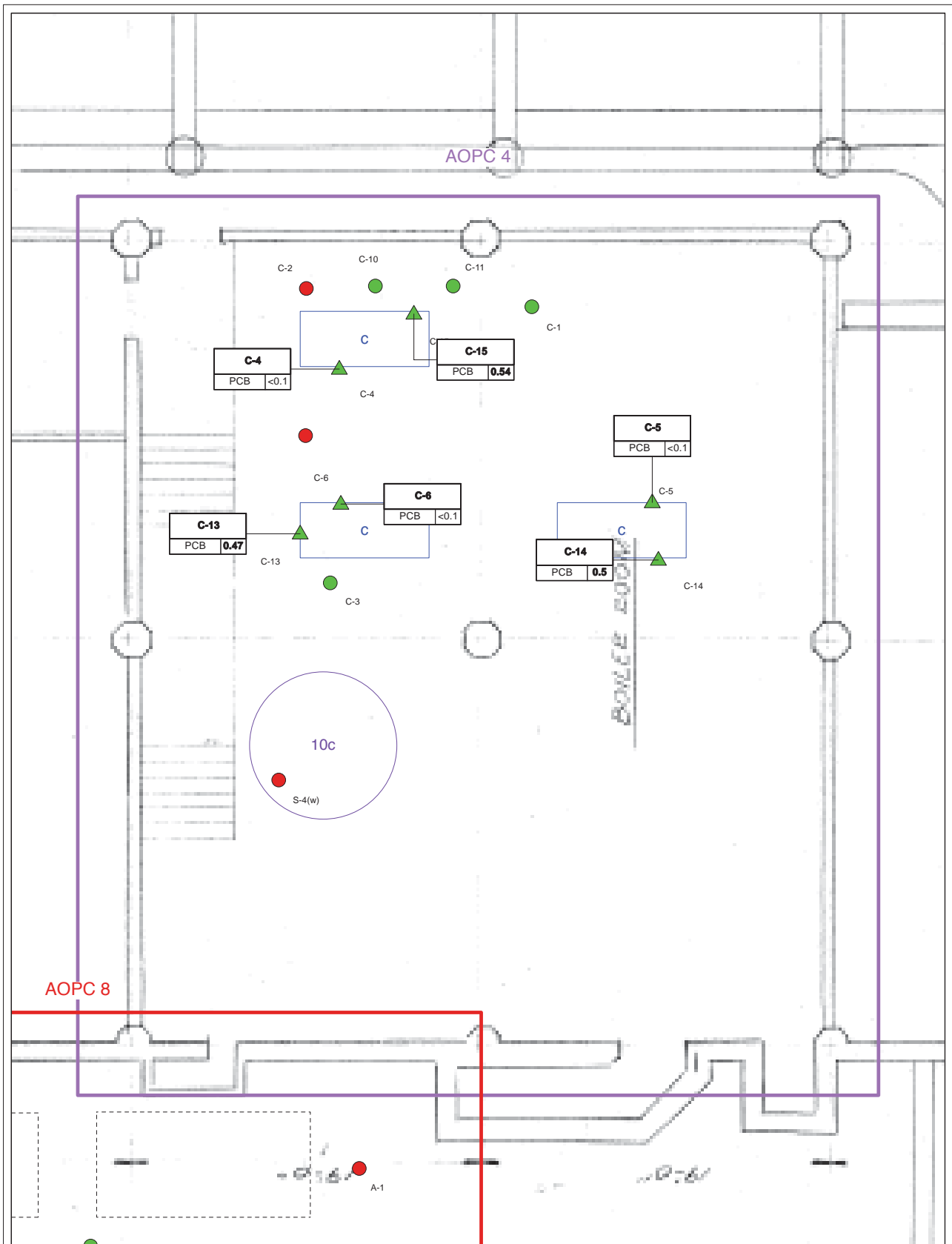
SAMPLE NAME	C-3
POLYCHLORINATED BIPHENYLS	DEPTH 7 PCB <0.1

* DEPTH IN FEET. 0 DEPTH INDICATES SAMPLE COLLECTED IMMEDIATELY BENEATH CONCRETE AND SUB-BASE.

CONCENTRATION IN mg/kg. * <" VALUE INDICATES NOT DETECTED ABOVE THE METHOD DETECTION LIMIT. **BOLD** INDICATES DETECTION. **SHADED** INDICATES EXCEEDS A POTENTIAL CUL.

FIGURE 8
SOIL ANALYTICAL DATA - PCBs
AOPC 4 - COMPRESSOR ROOM

PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0

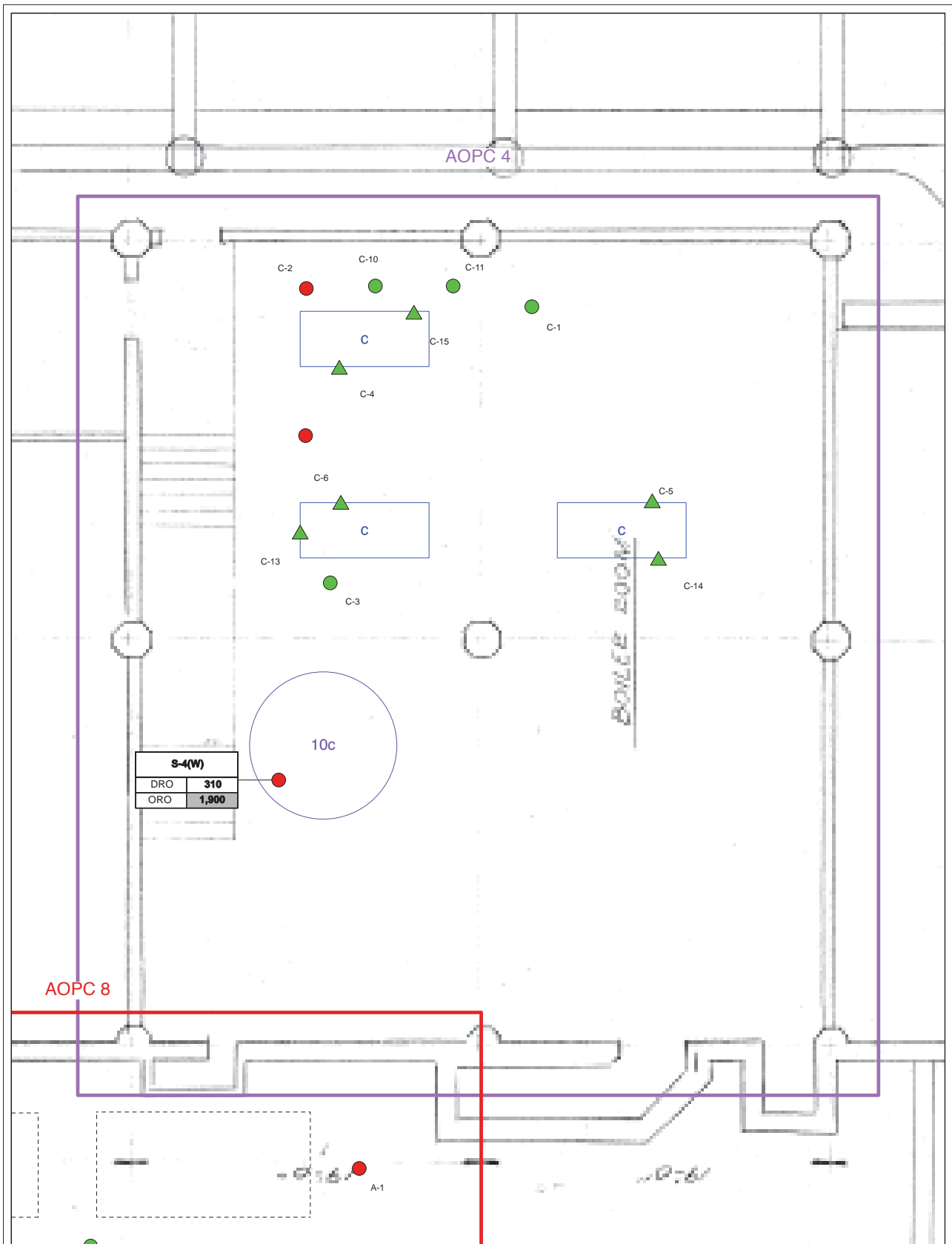


NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- 10a SUMP
- C COMPRESSOR UNIT
- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED EPA ACTION LEVEL.
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED EPA ACTION LEVEL.

SAMPLE NAME	C-3	CONCENTRATION IN $\mu\text{g}/100 \text{ cm}^2$
POLYCHLORINATED BIPHENYLS	PCB 0.47	"<" VALUE INDICATES NOT DETECTED ABOVE THE METHOD DETECTION LIMIT.
		BOLD INDICATES DETECTION.

FIGURE 9			
WIPE ANALYTICAL DATA - PCBs			
AOPC 4 - COMPRESSOR ROOM			
PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



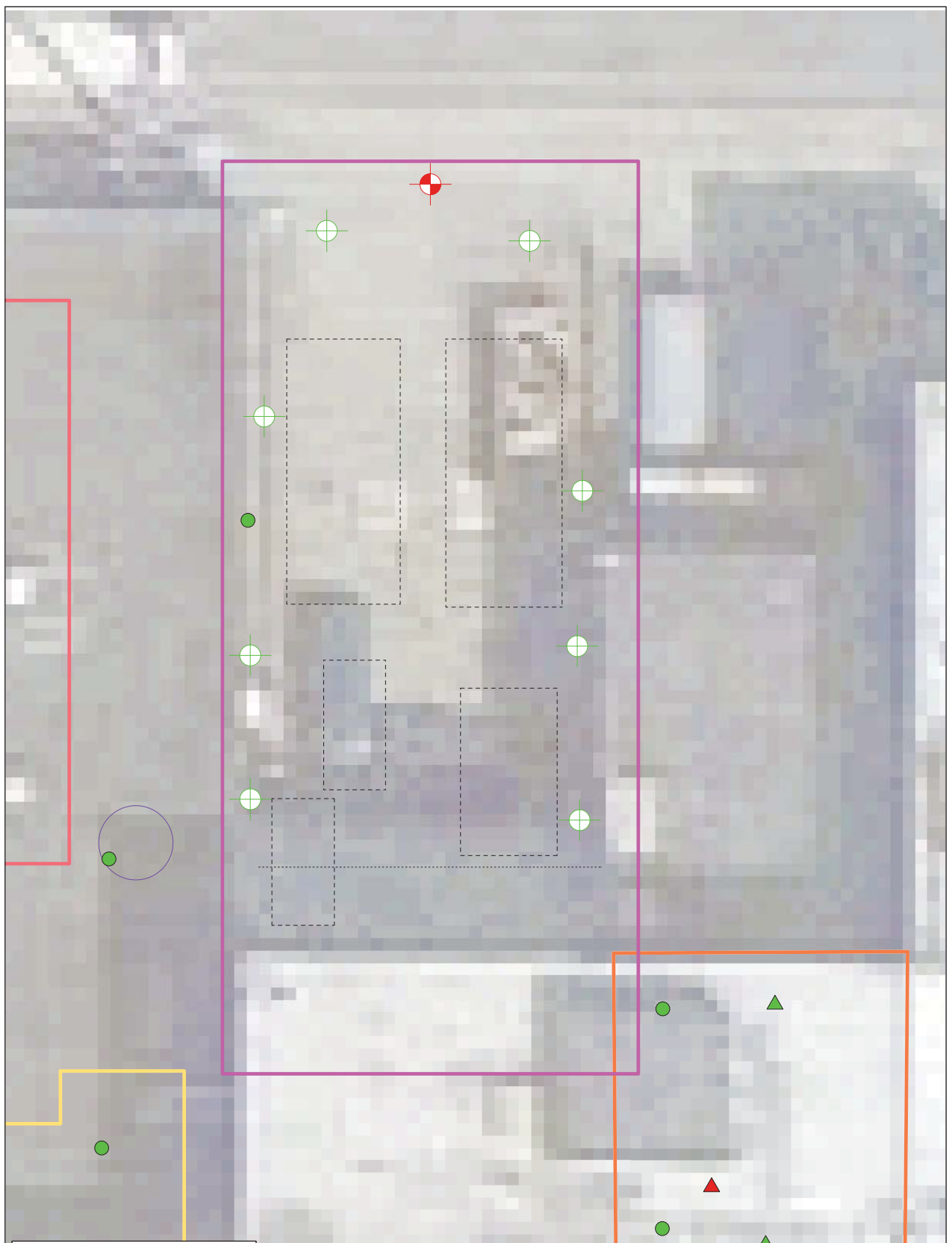
NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- 10a SUMP
- C COMPRESSOR UNIT
- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED EPA ACTION LEVEL.
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED EPA ACTION LEVEL.

SAMPLE NAME	S-4(W)		CONCENTRATION IN µg/kg
DRO	310		BOLD INDICATES DETECTION
OIL-RANGE ORGANICS	1,900		SHADED INDICATES EXCEEDS A POTENTIAL CUL

FIGURE 10
SUMP WATER ANALYTICAL DATA - DRO AND ORO
AOPC 4 - COMPRESSOR ROOM

PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- ▲ HSA BORING
- ⊕ MONITORING WELL
- ⊖ UNDERGROUND STORAGE TANK
- SUMP

10a

- RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

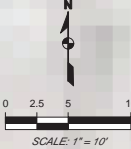
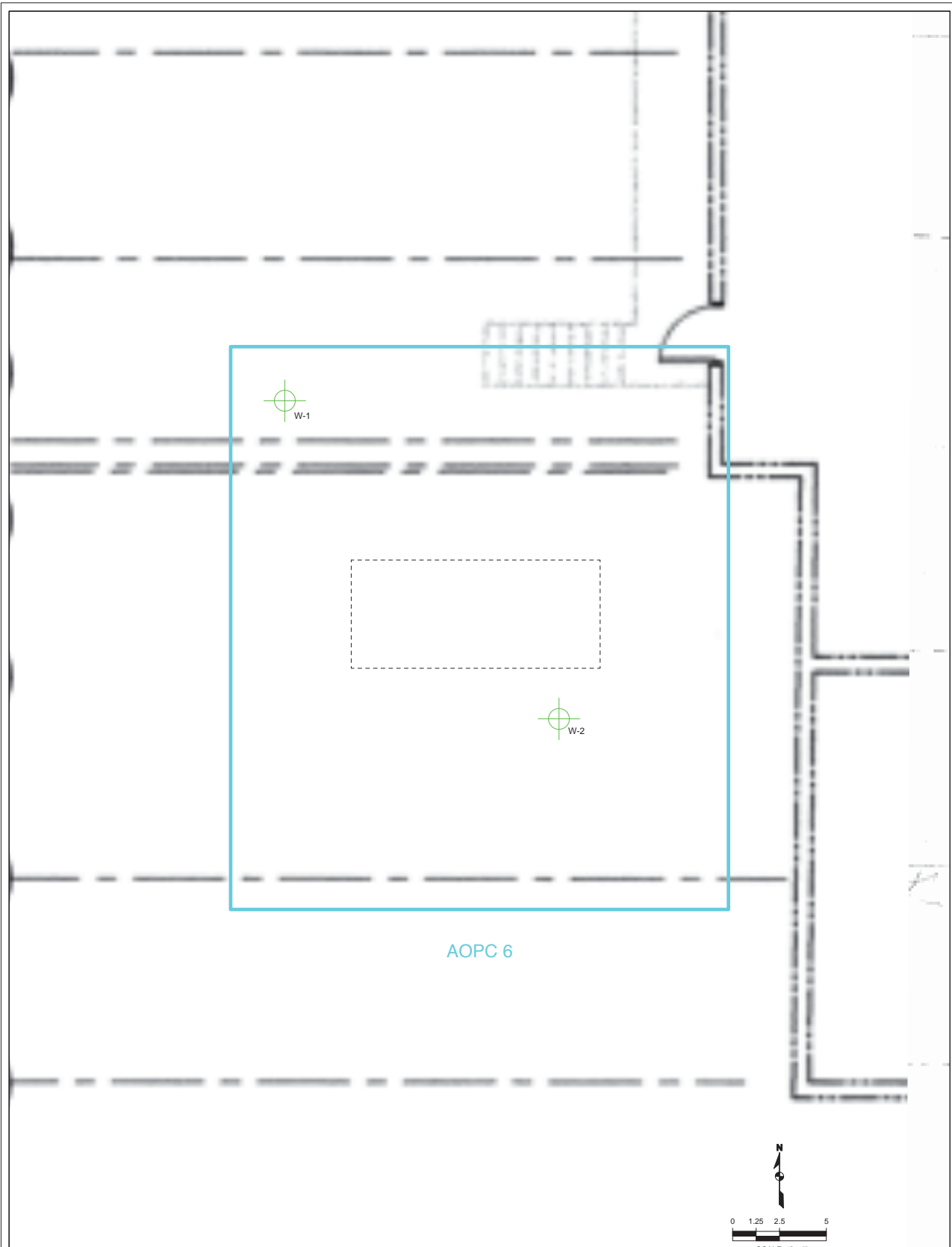





FIGURE 11
SAMPLING LOCATIONS
AOPC 5 - NORTHERN UST COMPLEX AND DISPENSER

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0



NOTES:

-  HSA BORING
-  UNDERGROUND STORAGE TANK
-  GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

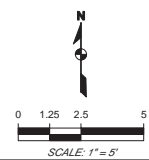

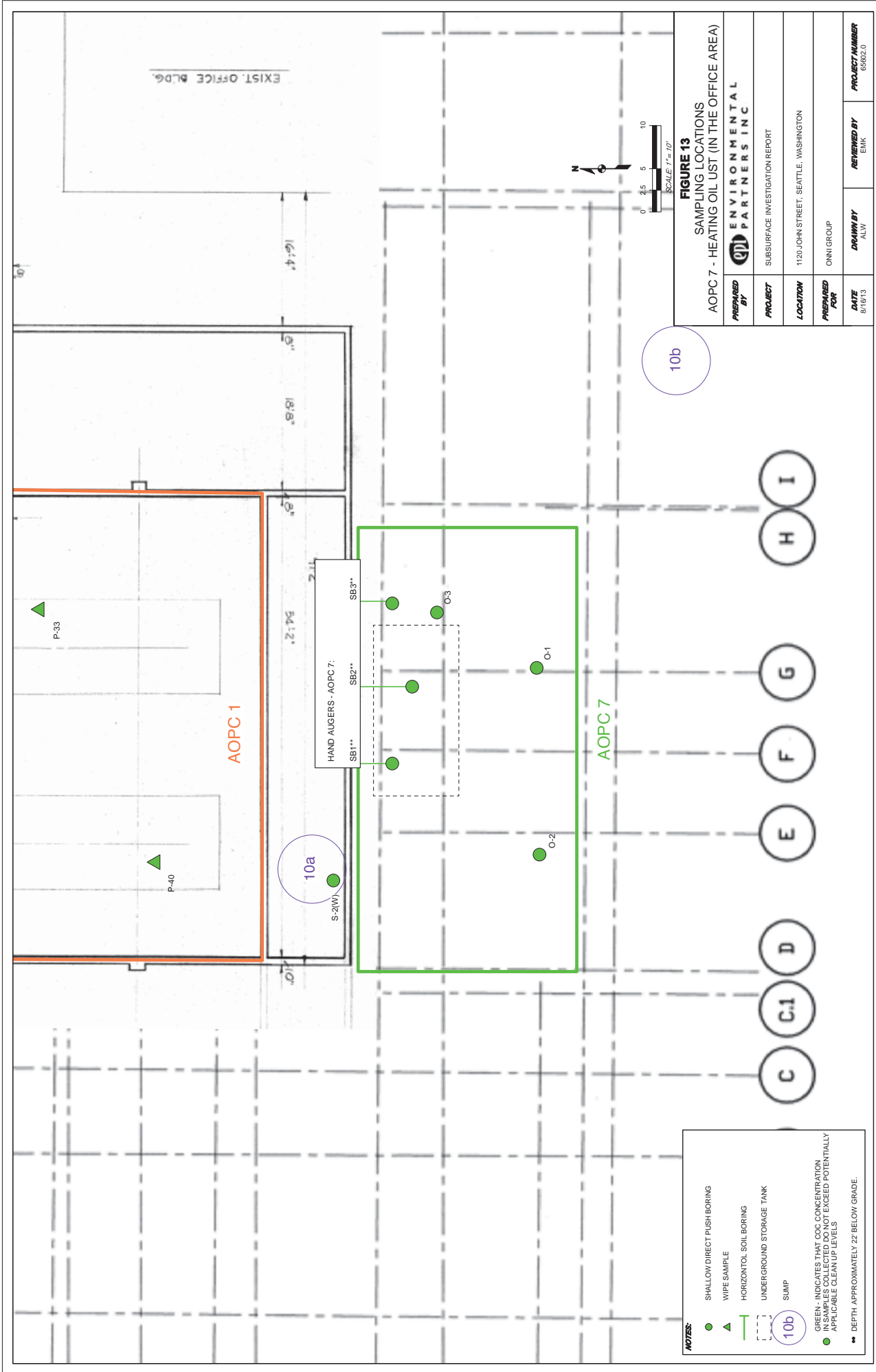


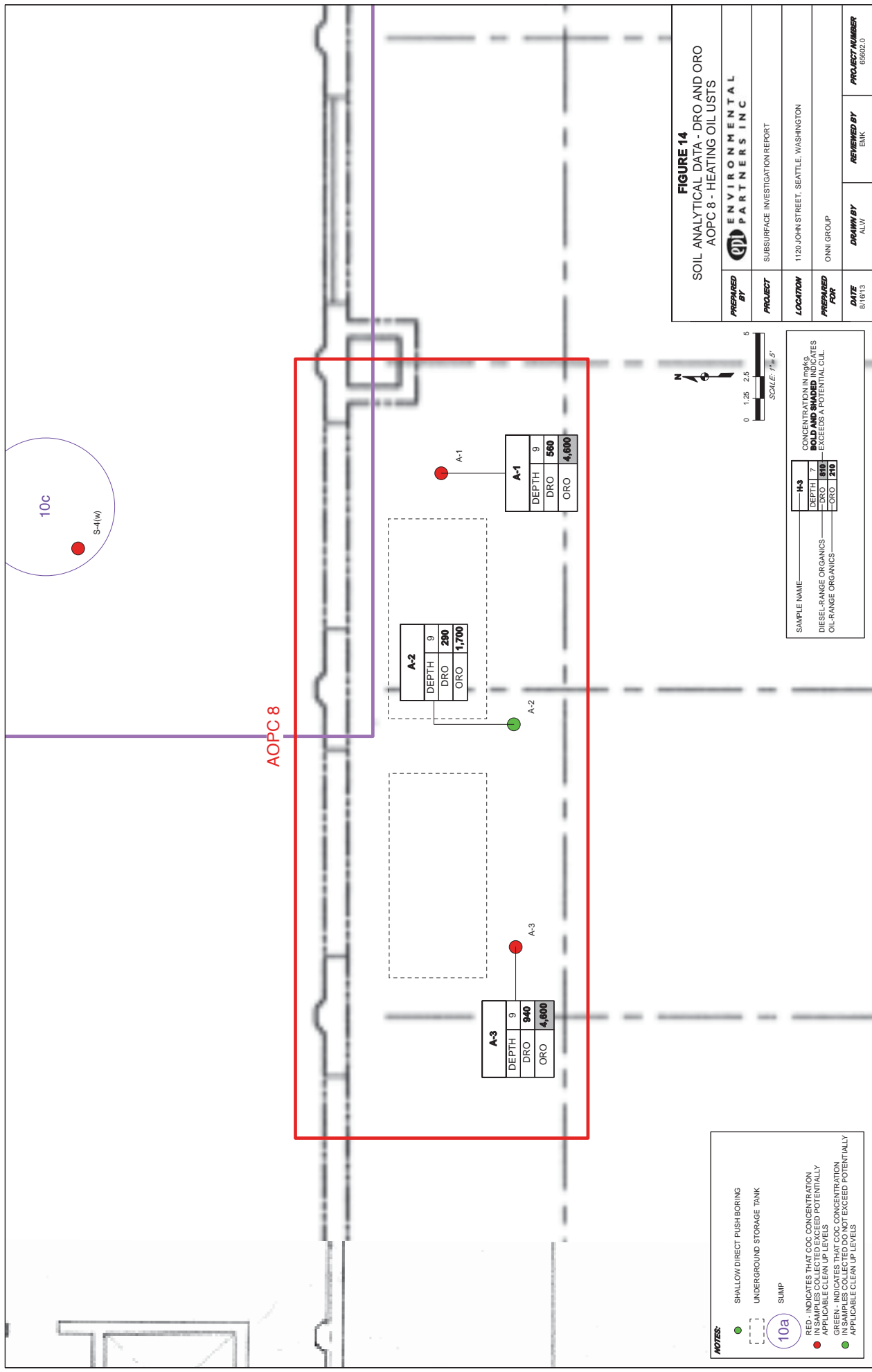
FIGURE 12 SAMPLING LOCATIONS AOPC 6 - WASTE OIL UST			
PREPARED BY	 ENVIRONMENTAL PARTNERS INC		
PROJECT	SUBSURFACE INVESTIGATION REPORT		
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON		
PREPARED FOR	ONNI GROUP		
DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
8/16/13	ALW	EMK	65602.0

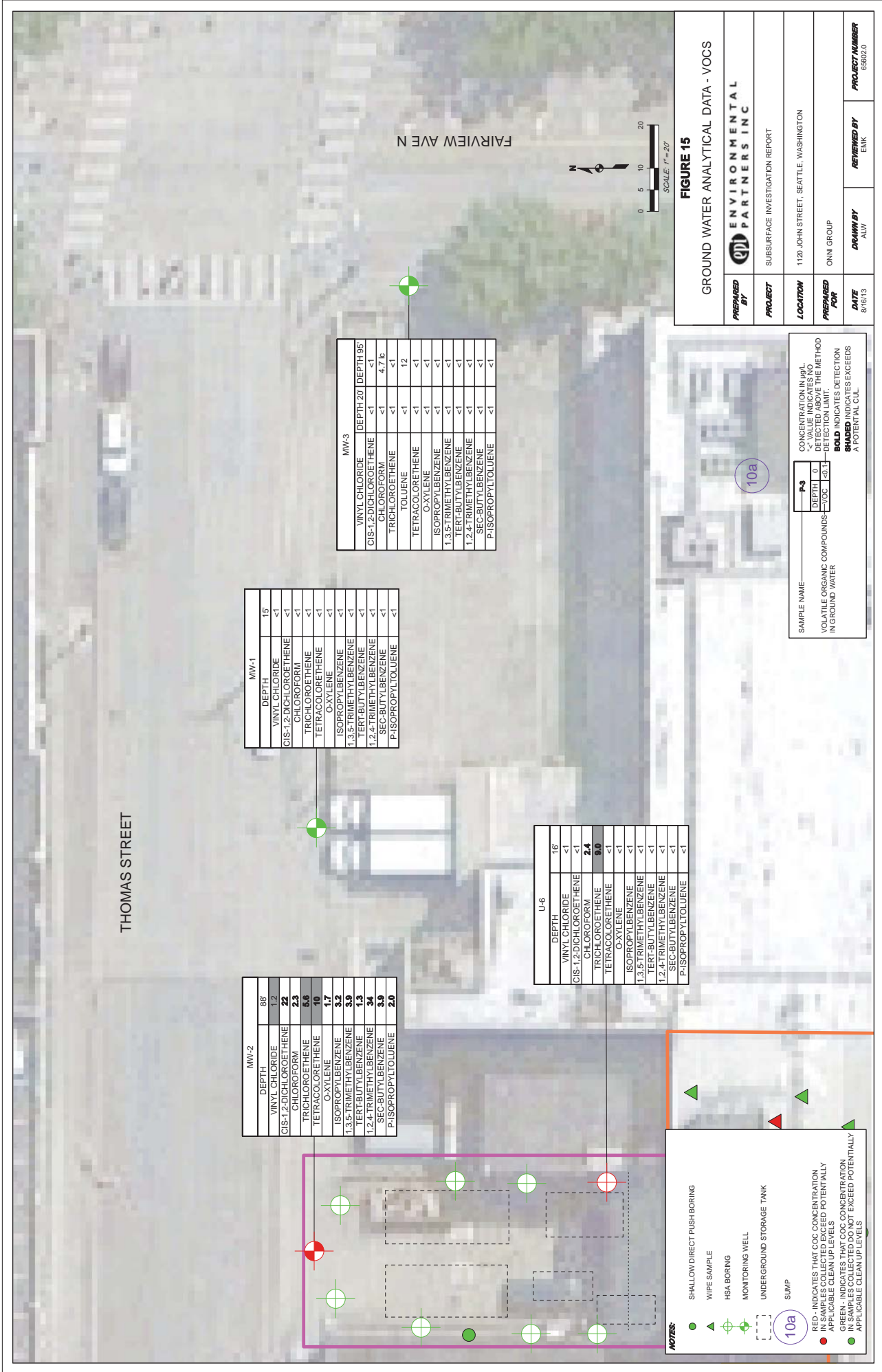


- NOTES:**
- SHALLOW DIRECT PUSH BORING
 - ▲ WIFE SAMPLE
 - HORIZONTAL SOIL BORING
 - - - UNDERGROUND STORAGE TANK
 - SUMP
- 10b
- GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DO NOT EXCEED POTENTIALLY APPLICABLE CLEANUP LEVELS
- ** DEPTH APPROXIMATELY 22' BELOW GRADE

FIGURE 13
SAMPLING LOCATIONS
AOPC 7 - HEATING OIL UST (IN THE OFFICE AREA)

PREPARED BY	ENVIRONMENTAL PARTNERS INC
PROJECT	SUBSURFACE INVESTIGATION REPORT
LOCATION	1120 JOHN STREET, SEATTLE, WASHINGTON
PREPARED FOR	ONNI GROUP
DATE	8/16/13
DRAWN BY	ALW
REVIEWED BY	ENK
PROJECT NUMBER	65602.0





MW-2

DEPTH	85'
VINYL CHLORIDE	1.2
CIS-1,2-DICHLOROETHENE	2.2
CHLOROFORM	2.3
TRICHLOROETHENE	5.6
TETRACHLOROETHENE	10
O-XYLENE	1.7
ISOPROPYLBENZENE	3.2
1,3,5-TRIMETHYLBENZENE	3.9
TERT-BUTYLBENZENE	1.3
1,2,4-TRIMETHYLBENZENE	34
SEC-BUTYLBENZENE	3.9
P-ISOPROPYLTOLUENE	2.0

MW-1

DEPTH	15'
VINYL CHLORIDE	<1
CIS-1,2-DICHLOROETHENE	<1
CHLOROFORM	<1
TRICHLOROETHENE	<1
TETRACHLOROETHENE	<1
O-XYLENE	<1
ISOPROPYLBENZENE	<1
1,3,5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1,2,4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
P-ISOPROPYLTOLUENE	<1

MW-3

	DEPTH 20'	DEPTH 95'
VINYL CHLORIDE	<1	<1
CIS-1,2-DICHLOROETHENE	<1	<1
CHLOROFORM	<1	4.7 lb
TRICHLOROETHENE	<1	<1
TOLUENE	<1	12
TETRACHLOROETHENE	<1	<1
O-XYLENE	<1	<1
ISOPROPYLBENZENE	<1	<1
1,3,5-TRIMETHYLBENZENE	<1	<1
TERT-BUTYLBENZENE	<1	<1
1,2,4-TRIMETHYLBENZENE	<1	<1
SEC-BUTYLBENZENE	<1	<1
P-ISOPROPYLTOLUENE	<1	<1

U-6

DEPTH	16'
VINYL CHLORIDE	<1
CIS-1,2-DICHLOROETHENE	<1
CHLOROFORM	2.8
TRICHLOROETHENE	8.4
TETRACHLOROETHENE	<1
O-XYLENE	<1
ISOPROPYLBENZENE	<1
1,3,5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1,2,4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
P-ISOPROPYLTOLUENE	<1

NOTES:

- SHALLOW DIRECT PUSH BORING
- ▲ WIPE SAMPLE
- ⊕ HSA BORING
- ⊕ MONITORING WELL
- ⊕ UNDERGROUND STORAGE TANK
- ⊕ SUMP

10a

RED - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

GREEN - INDICATES THAT COC CONCENTRATION IN SAMPLES COLLECTED DID NOT EXCEED POTENTIALLY APPLICABLE CLEAN UP LEVELS

CONCENTRATION IN µg/L

<1 VALUE INDICATES NO DETECTION

<1 VALUE INDICATES THE METHOD DETECTION LIMIT

BOLD INDICATES DETECTION EXCEEDS A POTENTIAL CUL.

DEPTH	0'
VOC	<0.1

10a

FIGURE 15

GROUND WATER ANALYTICAL DATA - VOCS

PREPARED BY: ENVIRONMENTAL PARTNERS INC.

PROJECT: SUBSURFACE INVESTIGATION REPORT

LOCATION: 1120 JOHN STREET, SEATTLE, WASHINGTON

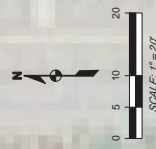
PREPARED FOR: ONNI GROUP

DATE: 8/16/13

DESIGNED BY: ALW

REVIEWED BY: ENK

PROJECT NUMBER: 65602.0



THOMAS STREET

FAIRVIEW AVE N