State of Oregon
Department of Environmental Quality **Memorandum**

Date: **October 30, 2025**

To: **Laura Hanna, Josie Clark, US EPA**

Through: **Kevin Parrett, DEQ Cleanup Section Manager *KGP***

From: **Rob Hood, Cleanup Project Manager *RAH***

Subject: **Source Control Decision**
Automatic Vending
ECSI #1430

1.0 Introduction

This memorandum presents the basis for the Oregon Department of Environmental Quality (DEQ) source control decision for the Automatic Vending site, located at 5001 North Lagoon Avenue in Portland, Oregon. Automatic Vending conducted a Source Control Evaluation (SCE) for the stormwater and groundwater pathways at the site in accordance with the 2005 *EPA/DEQ Portland Harbor Joint Source Control Strategy,* also known as the JSCS, under a May 2019, Voluntary Cost Recovery Agreement between BCS America, LLC and DEQ.

DEQ concludes from review of the Revised Source Control Evaluation Report (NV5, 2025) and other supporting documents, that upland sources of contamination from current and past operations do not pose a significant current or likely future threat to the Willamette River.

2.0 Site Description and History

2.1 Site Description

The Automatic Vending property is located on the southeast end of the Swan Island peninsula, at river mile 9.1 and is situated between the main stem of the river and Swan Island Basin. (Figure 1 of the Revised SCE, included in attachment 1). The site is 2.7 acres, flat, and inland from the Willamette River.

The site is currently owned and operated by BCS America, LLC. The subject property includes Tax Lot 700 on Multnomah County Tax Map 1N1E2OA.

2.2 Site History and Use

The Portland Airport occupied Swan Island from 1927 to 1940 and runway occupied a portion of the site. In 1944, the property consisted of a parking lot with a building near the western side.

The site has been occupied by a distribution warehouse for candy and vending machine businesses (1963 through 2013), catering and equipment occupants and BCS America (2013-2019), Total Handling Solutions (2015 through 2019), Temp Control Mechanical (2016 through 2019) and Green State of Mind (2016 through 2019). It was vacant through 2019 and 2022 while undergoing renovations for the current occupants (WENCO), which is a janitorial, chemical, and paper distributor. A detailed site history and use is presented in Section 2 through 4 of the Revised SCE Report.

2.3 Potential Sources of Contamination

The potential sources of contamination are identified in Section 5 of the Revised SCE Report, and include the following:

- Potentially impacted soil associated with fill material.
- Potentially impacted soil associated with former underground storage tanks (USTs).
- Residual sediments, if any, located within the stormwater conveyance lines and originating from prior subject property-related activities and/or historical particulate matter on paved surfaces.
- Potentially impacted soil and groundwater associated with former hoist and maintenance shop.

2.3 Chemicals of Interest

Chemicals of interest (COIs) were evaluated and presented in Section 5.3 of the Revised SCE Report. COIs associated with the site and/or sediment adjacent to the stormwater discharge area include petroleum hydrocarbons, dioxins/furans, pesticides, herbicides, tributyl tin, phthalates, volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), PCBs, and metals.

2.4 Potentially Complete Pathways

Potential contaminant transport pathways evaluated include releases during overwater activities, stormwater, riverbank erosion, and groundwater migration.

Overwater Activities – The facility is not adjacent to the river and has no overwater activities. Therefore, this pathway is not complete at the site.

Stormwater – One current storm sewer outflow exists at the facility, Figure 6 of the Revised SCE. The current stormwater line is connected to the City storm line along N. Lagoon Avenue for Basin S-2 which discharges at the southeast end of Swan Island Lagoon. This is a complete pathway.

Riverbank Erosion Pathway – The site is not adjacent to the river and has no riverbank. Therefore, this pathway is not considered complete.

Groundwater Pathway- Groundwater impacted from the site may discharge to the Willamette River which is downgradient of the site. This pathway was carried forward for further evaluation.

3.0 Regulatory History

The Former Automatic Vending site was enrolled in the DEQ Voluntary Cleanup Program in 2019 and assigned DEQ YDO/ECSI No. 1430. Prior to entering DEQ's Voluntary Cleanup Program the site was investigated independently and as part of DEQ's UST Program. Section 3 of the Revised SCE Report presents a detailed summary of previous investigations and remedial actions conducted at the site.

3.1 Underground Storage Tanks

In the early1990s, six USTs were decommissioned in-place (four gasoline northeast of warehouse building, one motor oil, and one waste oil northeast of the shop building, Figure 3 of the Revised SCE). Approximately, 134 tons of soil were excavated from the motor oil and waste oil USTs and transported off-site for disposal. Confirmation samples were collected from soil beneath USTs. One sample showed the up to 1,600 ppm of heavy oil were detected and additional borings were collected outside the footprint of the USTs. Chemical analytical results identified oil in fill material. DEQ concluded that the detection oil appeared to be associated with fill material and not related to the UST release. DEQ issued an NFA in May 1997, for LUST File No. 26-91-0415. However, DEQ listed the subject property as ECSI No. 1430 due to the detections of oil in the fill material.

3.2 Hoist removal

In 2019, K&S Environmental removed two in-ground hydraulic hoists inside the shop building. Approximately, 45.25 tons of soil were taken to Hillsboro Landfill. Up to 3,600 mg/Kg of diesel, 3.42 mg/Kg of PCE, and 0.126 mg/Kg of PCBs were detected.

3.3 Stormwater Permit

The current site use of the warehouse does not require a NPDES 1200Z permit.

3.4 Hazardous Waste

Currently, the site is not a generator of hazardous waste.

4.0 Hazardous Substance Releases

Prior to the source control evaluation, there were reported releases of hazardous substances from USTs, hydraulic hoists, and the fill material. The areas of potential releases were investigated. In soil, Total Petroleum Hydrocarbons (TPH), Semi-Volatile Organic Compounds (SVOCs), VOCs, and total metals have been detected in the following areas: former UST and hoists. It also appears the fill contains some of these contaminants.

5.0 Source Control Evaluation

A source control evaluation for the site was determined to be necessary because it is located within the uplands, draining to the Portland Harbor Superfund study area. The upland source control investigation was conducted in accordance with the 2005 EPA/DEQ JSCS.

The objective of a source control evaluation is to determine whether potential sources of contamination at the site have been identified and if additional characterization or source control measures are needed to prevent impacts to the Willamette River through the stormwater, groundwater, bank erosion, or overwater activities contaminant transport pathways.

Due to the lack of frontage on the Willamette River, DEQ determined that erosion of contaminants from riverbanks or overwater activities are not complete pathways. DEQ determined groundwater and stormwater are potentially complete contaminant transport pathways and the remainder of this decision document presents DEQ's findings regarding these two pathways.

5.1 Stormwater Source Control Evaluation

When stormwater presents as a potential pathway to mobilize contamination from the site to the river, these determinations generally rest upon demonstrating that site-related information provides sufficient support to make the following findings:

1. Existing and potential facility-related contaminant sources have been identified and characterized.

2. Contaminant sources were removed or are being controlled to the extent feasible.

3. Performance monitoring conducted after source control measures were implemented supports the conclusion that the measures are effective.

4. Adequate measures are in-place to ensure source control and good stormwater management measures occur in the future.

As detailed in the 2025 Revised SCE Report, investigation of the stormwater collection and conveyance system was undertaken at the site, in accordance with DEQ's 2009 Guidance for Evaluating the Stormwater Pathway at Upland Sites.

5.1.1 Contaminants of Potential Concern

The following contaminants of potential concern were identified and analyzed for in stormwater:

- TPH (gasoline-, diesel-, and oil-range hydrocarbons).
- Total Metals (arsenic, cadmium, chromium, mercury, and zinc).
- PAHs/SVOCs.
- PCBs.
- VOCs (halogenated).
- Total suspended solids (TSS).
- Butyltins.
- Phenols and substituted phenols.
- Phthalate Esters.
- Dioxins/furans.

Analysis of other Table 17 compounds, including pesticides, herbicides, cyanide, manganese, vanadium, were not performed as part of the upland investigations because these compounds were not identified as COIs based on the lack of known agricultural activity, and the site has not been occupied by businesses that use, store or manufacture equipment or chemicals there would contain these compounds.

5.1.2 Stormwater Configuration

As shown in Figure 6 of the Revised SCE, the majority of the site consists of a warehouse with an asphalt driveway\parking on the eastern portion of the property and storage on the north and west portions of the property. A maintenance shop exists on the southwestern corner of the property.

The stormwater on the western and northern portions of the property flows to catch basins on the western side of the parcel. A new vegetated swale was installed near the loading dock area. On the northeastern portion of the property, water flows over the asphalt to catch basins, which feed into the storm drain on the northeastern portion of the property.

5.1.3 Site Redevelopment/Source Control Measures.

Recent redevelopment of the subject property incorporated several source control measures including the following:

- In 2021, CB1, CB2, CB3, CB5, and CB7 were removed and replaced with new catch basin structures and replaceable filters.
- One new catch basin (CB8) and conveyance line (and new cleanout) connected to the sanitary system was constructed at the loading dock area.
- One additional catch basin (CB9) and conveyance line (and new cleanout) for the stormwater system was constructed at the loading dock area.
- One new catch basin (CB11) was installed immediately northwest of the loading dock area.
- As part of site improvements, former catch basin CB3 was removed; however, the conveyance line connecting catch basin CB5 to the municipal line was retained.
- A new, lined vegetated swale (intended to store and treat stormwater) and associated catch basin/swale overflow CB12 was constructed immediately north of the loading dock area. This vegetated swale also receives effluent from the newly installed catch basin CB11 that replaced former catch basin CB3.

5.1.4 Best Management Practices
A Stormwater Pollution Control Plan (SWPCP) (NV5, 2024) has been developed for the subject property. The SWPCP includes information regarding the current facility at the subject property, potential pollutant sources, and BMPs that will be implemented at the facility to minimize potential pollutants that may ultimately discharge from the subject property. Although the subject property is currently not regulated by a 1200-Z Stormwater Permit, DEQ requested the development of the SWPCP for ongoing operations at the facility as a condition of receiving an SCD. WENCO has agreed to implement the SWPCP which includes replacing catch basin filters, catch basin cleanouts, regular sweeping and inspections of stormwater facilities. WENCO will maintain records in-house that will be available for DEQ upon request.

5.1.4 Stormwater Pathway Investigation and Evaluation
The stormwater pathway evaluation included documentation of the stormwater collection system, sampling and screening of stormwater solids samples from catch basins, and sampling and screening of stormwater samples.

Catch Basin Sediment Sampling. Stormwater solids were collected from site catch basins twice, once in December 2020, prior to the stormwater system cleanout, and once in December 2021, following the January 2021, stormwater system cleanout. As presented in Section 8.2 of the Revised SCE Report, samples were analyzed for TPH, organotins, VOCs, PCBs, SVOCs, phthalates, metals, dioxins/furans, organochlorine pesticides, and organochlorine herbicides.

In samples from 2020 PCBs, PAHs, BEHP, dioxins/furans, arsenic, cadmium, mercury, and/or zinc were detected above sediment/riverbank soil PH Cleanup Levels in one or more samples and chromium, mercury, zinc, PCBs and PAHs were detected at concentrates above those typically observed at site industrial sites in Portland Harbor in one or more catch basins. In December 2021, concentrations of PCBs, BEHP, PAHs, arsenic, cadmium, mercery, and zinc, were detected above sediment/riverbank soil PH Cleanup Levels in one or more samples and chromium, mercury, zinc, PCBs and PAHs were detected at concentrates above those typically observed at site industrial sites in Portland Harbor in one or more catch basins.

Following the June 2022, stormwater system improvements and site repaving, catch basins were monitored in 2022 and 2024 for sediment accumulation but none was observed in either event. The lack of and/or minimal amounts of sediment suggests that catch basin improvements and BMPs are effectively working.

A summary of the sediment sample results is presented in Table 1 of the SCE Report and included in Attachment 2, all Tables are in Attachment 2.

Stormwater Sample Evaluation. Stormwater sampling at the Site was conducted in accordance with DEQ's Guidance for Evaluating the Stormwater Pathway at Upland Sites (2009). Four stormwater sampling events occurred in 2021. Between October 2021 and June 2022, stormwater system improvements and catch basin replacement occurred. Following the upgrades, two stormwater sampling events occurred on the following dates May 24, 2022, and March 27, 2024. Samples were analyzed for petroleum hydrocarbons, metals, butylins, PCBs VOCs, SVOCs, oxygen-containing compounds, phenols and substituted phenols, phthalate esters, PAHs, dioxins, and furans. Stormwater data are presented in Revised SCE Report Tables 2 and 3. Results are screened against PH Cleanup Levels for surface water (Table 17 from EPA 2017) and compared to the rank order curves in Revised SCE Report Section 9.2, with the rank order curves presented in Appendix E, which are included in Attachment 3.

As shown an initial round of stormwater sampling at the two on-site lateral cleanouts (SW-1 and SW-2) was completed between March 18, 2021, and May 24, 2021. Arsenic, cadmium, zinc, PCBs, benzo(b)fluoranthene, benzo(a)pyrene and total dioxins/furans were detected above their PH Cleanup Level in one or more samples. Detected concentrations for all COCs with PH Cleanup Level exceedance were in the flat portion of the rank order curves. Chloromethane was detected above the JSCS SLV of 2.1 ug/L, at a concentration of 4.04 ug/L in one sample. There is not a rank order curve available for chloromethane.

Two additional rounds of stormwater sampling from SW-1 and SW-2 were completed. One in May 2022 following catch basin replacement, and a second in March 2024, following completion of site paving and stormwater system upgrades. Result were consistent with or lower than the 2021 samples and all surface water PH Cleanup Level exceedances plot in the flat portion of the rank order curves.

5.1.6 Stormwater Pathway Lines of Evidence Evaluation
In alignment with Section 5.3 of the JSCS, which describes appropriate approaches for screening of direct discharges, a lines-of-evidence evaluation was undertaken in consideration of the following site-specific factors:

1. Identification and characterization of potential sources of contaminants – Existing and potential facility-related contaminant sources have been identified and characterized. The extensive site redevelopment and current use limit the potential source of contamination at this site. BCS America, LLC characterized stormwater by sampling the new storm system at the site. Stormwater was evaluated for contaminants reasonably expected to be found on the site due to past releases and on-going site operations.

2. Magnitude of stormwater exceedances at each sampling point and proximity of sampling point to the river – Stormwater sampling results that exceeded the EPA surface water Cleanup Level or JSCS water screening level values were compared to DEQ charts from *Appendix E: Tools for Evaluating Stormwater Data*, which was updated in 2015. This tool was created by using contaminant concentration data from many of the stormwater and stormwater solids samples collected at Portland Harbor-area heavy industrial sites. These data were used to create a series of charts that plot rank-order samples against contaminant concentrations and are used to identify contaminant concentrations on samples that are atypically elevated. Concentrations falling within the upper/steeper portion of the curve are an indication that uncontrolled contaminant sources may be present at the site and that additional evaluation or source control measures may be needed. Concentrations that fall on the lower/flatter portion of the curve suggest that stormwater is not being unusually impacted by contaminants at the site, and while concentrations may exceed the risk-based Cleanup Levels, they are within the range found in stormwater from active industrial sites in Portland Harbor.

   Chromium, mercury, zinc, PCBs, and PAHs were detected at concentrates above those typically observed at site industrial sites in Portland Harbor in one or more catch basins prior to cleanout, catch basins replacement, site paving and stormwater system upgrades. Sediment accumulation was not observed post stormwater system upgrades. Arsenic, cadmium, zinc, PCBs, benzo(b)fluoranthene, benzo(a)pyrene and total dioxins/furans were detected above their surface water PH Cleanup Level in one or more of the stormwater samples, but concentrations for all COC with surface water PH Cleanup Level exceedance were in the flat portion of the rank order curves in all samples collected prior to, and post stormwater system upgrades.

3. Regional background soil concentrations of naturally occurring chemicals for evaluating stormwater solids – Cadmium, chromium, copper, lead, mercury, nickel, and zinc were detected in pre-stormwater system upgrades at concentrations above Portland Area background concentrations. It was not necessary to evaluate background concentrations for any contaminants analyzed in the site stormwater system, due to low detected stormwater concentrations and site redevelopment.

4. Presence of bioaccumulative chemicals –Potential bioaccumulative COCs detected in stormwater include arsenic, cadmium, chromium, zinc, PAHs, PC Bs, and dioxins/furans. Given the low concentrations of these contaminants and total suspended solids in stormwater discharged from the site and due to stormwater system and catch basin upgrades sediment impacts are not anticipated.

5. Site hydrology including site conditions, size of drainage and location and estimated size of discharge Stormwater is generated from the pavement and the building roof on the 2.67-acre site, which eventually drains to the storm line that flows west in N. Lagoon Ave. and east in the sanitary line. Annual runoff volumes of this size site discharged to the Willamette River are estimated to be low to moderate in comparison to other industrialize sites discharging to the Portland Harbor.

6. Stormwater system design and management – Precipitation falling on the 2.67 Acre site is primarily managed by a new stormwater system. The Owner is doing appropriate best management practices (BMPs), which includes sweeping the tax lots, cleaning the catch basins and jetting/cleaning the original section of the stormwater conveyance line.

7. Estimate of potential contaminant loading to the river —Supported by low concentrations of detected contaminants and TSS in stormwater and low to moderate volumes of annual stormwater discharge from the site, pollutant loads in stormwater from the site are not significant and will continue to be minimized with continued use of BMPs.

It is anticipated the current owner/tenant will continue to follow the sites Stormwater Pollution Control Plan and implement the identified BMPs including sweeping efforts, use of catch basin inserts, and routine maintenance of stormwater conveyance features to prevent the buildup or discharge of stormwater constituents.

In summary, these lines of evidence indicate that the stormwater pathway from the site to Portland Harbor is not significant and no additional controls are warranted.

5.2 Groundwater Source Control Evaluation

The site is east of the longitudinal axis of Swan Island (Figure 1 of the Revised SCE). Due to its location near the longitudinal axis of the island, the property is likely near a ground water divide separating shallow flow into components discharging to the Swan Island Basin and the main stem of the Willamette River. While the direction of groundwater flow at the site has not been determined is inferred to flow north-northeast across the "Stagecraft" property and discharge in Swan Island Basin approximately 500 feet northeast of the site. As noted in the Revised SCE Report, groundwater was encountered between 21 and 31 feet bgs in the temporary well points in the boring at the property.

Because the shallow stormwater conveyance system is located well above the groundwater level, there is no potential for preferential transport of groundwater in or along underground utilities leading to the river.

5.2.1 Groundwater Source Control Investigations

Site investigations at the subject property included advancing 13 direct-push borings (DP-1 through DP-13; Figure 3 of the Revised SCE) to evaluate soil and groundwater impacts in the shop area in July 2019, and advancing six direct-push borings (DP-14 through DP-19; Figure 2 of Revised SCE) on July 16, 2020, to evaluate the extent of fill material and groundwater conditions across the subject property. The groundwater investigation was conducted in accordance with a DEQ-approved work plan (GeoDesign, Inc., 2020). Additional borings were completed during the underground tank decommissionings.

Soil Samples

Soil samples were collected from 27 borings in total. Analysis of soil samples included TPH, VOCs, metals, SVOCs, and PCBs. Analysis of soil results are summarized in Tables A-1 through A-6 of the Revised SCE Report. The following metals were detected above background levels and the following organics were detected:

- Metals (antimony, arsenic, cadmium, chromium, copper, lead, mercury, and zinc)
- Petroleum Hydrocarbons- (gasoline, diesel, and heavy oil).
- VOCs (ethylbenzene, 4-Methyl-2-Pentanone, isopropylbenzene, n-propylbenzene, naphthalene, PCE, toluene, 1,2,4-TMB, 1,3,5-TMB, m,p-Xylenes, 0-Xylenes.
- PAHs (anthracene, acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Benzyl Alcohol, BEPH, carbzole, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, PCP, phenanthrene, pyrene, 1-methylnaphthalene, 2-methylnaphthalene, and phenol).

Groundwater Samples

Groundwater samples were collected from the 10 temporary borings (DP-1W through DP-3W, DP-14W through DP-19W) and analyzed for metals, PCBs, petroleum hydrocarbons, VOCs, and PAHs.

A summary of the groundwater monitoring from the borings is presented in Tables A-7 through A-11 of the Revised SCE Report.

The following were detected in the site groundwater samples:

- Petroleum Hydrocarbons – (gasoline).
- VOCs -cis-1,2-DCE, trans-1,2-DCE, ethylbenzene, MTBE, PCE, and TCE.
- Metals – Total-arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc. Dissolved-arsenic and copper.
- PAHs-acenaphthene, anthracene, benzyl alcohol, di-n-butyl phthalate, benzoic acid, carbazole, dibenzofuran, fluoranthene, fluorene, 1-methylenapphthalene, 2-methylnapthalene, naphthalene, phenanthrene, pyrene.

5.2.3 Groundwater Pathway Screening

Groundwater data were screened to evaluate the potential for chemicals in groundwater to discharge to the river at concentrations that could cause adverse effects. Not all chemicals that are groundwater contaminants of concern for the Portland Harbor Superfund Site were analyzed; rather, as summarized above, select analyses were conducted based on the potential sources of contamination on site. Chemicals not analyzed on the Automatic Vending site, but on the Portland Harbor Record of Decision (ROD) Table 17 list of groundwater contaminants of concern (COCs) include pesticides, herbicides, C10-C12 (TPH-Dx used as surrogate), manganese, vanadium, cyanide, and perchlorate. There are no known or suspected

sources of these chemicals on the Automatic Vending site. Therefore, source control contaminants of interest at the Automatic Vending site are limited to the contaminants that were analyzed to investigate known or suspected sources of contamination.

The groundwater pathway screening involved evaluating site concentrations relative to cleanup levels listed in Table 17 of the Portland Harbor ROD. For all detected chemicals not identified in Table 17, results were screened against the lowest value from SLVs listed in either:

1. Portland Harbor Joint Source Control Screening Level Values (SLVs) listed in Table 3-1 of the Portland Harbor JSCS (Note: EPA revised the National Recommended Water Quality Criteria [NRWQC] values in 2015 and DEQ revised the Ambient Water Quality Criteria [AWQC] values in 2014. The most current values were taken into account.

2. Toxicity Reference Values (TRVs) and Surface Water contaminants of potential concern (COPCs) from Table 6-43 and 6-65 of the Portland Harbor Baseline Ecological Risk Assessment (BERA) were used as SLVs when lower than the Table 3-1 value.

The screening of the grab groundwater samples identified the following contaminants as COPCs.

- Metals - arsenic, copper, and lead.
- VOCs - PCE, and TCE.
- PAHs - Benzyl Alcohol.

These chemicals are further evaluated by chemical group below using weight-of-evidence approach to determine the potential for discharge to the Willamette River at concentrations that could cause adverse effects or represent a recontamination concern.

Metals-arsenic, copper and lead

Total and dissolved arsenic were detected in groundwater samples DP-1W, DP-2W, DP-3W, DP-14W, DP-15W, DP-17W, and DP-19W at concentrations greater than the EPA PH Cleanup Level of 0.018 ug/L. Detected concentrations range from 0.525 to 9.67 ug/L, which is below the ecological SLV of 150 ug/L and is in the lower range of concentrations observed in shallow groundwater at Portland Harbor sites and in indicative to DEQ of naturally occurring levels. Therefore, no source control action is warranted for arsenic.

Total copper was detected in groundwater samples DP-1W and DP-14W at concentrations greater than the EPA PH Cleanup Level of 2.74 ug/L, with detected concentrations ranging from 1.09 to 10.2 ug/L. However, dissolved copper was not detected in groundwater sample and DP-14W indicating the total detected concentrations of copper at these locations is likely elevated due to inclusion of suspended sediment in the sample. Given the limited locations of exceedance, lack of detected dissolve phase, and low exceedance ratio, no source control action is warranted for copper.

Total lead was detected in groundwater samples DP-1W and DP-14W at concentrations greater than the EPA Portland Harbor CULs of 0.51 ug/L, with detected concentrations ranging from 0.237 to 0.720 ug/L. However, dissolved lead was not detected in groundwater sample DP-14W indicating the total detected concentrations of lead at these locations is likely elevated due to inclusion of suspended sediment in the sample. Given the limited locations of exceedance, lack of detected dissolve phase, and low exceedance ratio, no source control action is warranted for lead.

VOCs-PCE and TCE

PCE and/or TCE were detected in groundwater samples collected from borings DP-1, DP-2, DP-3, and DP-14 (advanced in the vicinity of the shop) at concentrations greater than the EPA PH Cleanup Levels of 0.24 and 0.6 ug/L, respectively. The detected concentrations of PCE and TCE are highest beneath and adjacent to the shop (at DP-2 and DP-3) and appear to attenuate in the presumed down-gradient (northerly) direction, as evidenced by decreasing PCE and TCE concentrations at the DP-14 groundwater sampling location. Further examination of detected VOC concentrations in groundwater samples collected from borings DP-3 and DP-14 also indicate that reductive dechlorination is occurring to some degree, as evidenced by increasing concentrations of cis-1,2-DCE (a breakdown product of PCE) moving in a northerly direction. PID measurements indicate that solvent impacts are limits to the shop area and it appears to DEQ there is insufficient remaining PCE and TCE mass in the vadose and saturated zones to sustain a continuous plum and complete pathway to the river. Therefore, no source control action is warranted for PCE and TCE.

PAHs/SVOCs-Benzyl Alcohol

Benzyl Alcohol was detected at DP-2W at concentrations greater than the JSCS SLV of 8.6 ug/L, there is not a PH Cleanup Level for benzyl alcohol. Detected concentrations ranged from 0.524 to 9.54 ug/L. Based on the isolated detection, low exceedance ratio, and lack of PH Cleanup Level, no source control action is warranted for benzyl alcohol.

5.2.4 Groundwater Pathway Lines of Evidence Evaluation

In alignment with Section 5.2 of the JSCS, which describes factors that need to be considered in evaluating groundwater, a lines-of-evidence evaluation was undertaken in consideration of the following site-specific factors:

1. Nature and extent of groundwater COPCs in each affected water-bearing zone – The nature and extent of site-related groundwater contamination were defined. There were detections of diesel and oil-range petroleum hydrocarbons, PCE, PAHs, and metals in groundwater beneath the site. Contamination does not extend a significant distance off-site, as shown by down gradient wells which are non-detect or at very low concentrations.

2. Potential presence of non-aqueous phase liquid or sheen – No presence of non-aqueous phase liquid or sheen was observed in sampling nor are contaminant concentrations suggestive of separate-phase contamination.

3. Presence of bioaccumulative chemicals – Chemicals of concern for bioaccumulation were detected in groundwater at concentrations above the relevant Portland Harbor groundwater Cleanup Levels. Select bioaccummulative metals including total copper and lead were present above screening levels in groundwater at the borings. The data do not indicate the presence of a plume that is likely to re-contaminate future sediment remedial measures or impact the protectiveness of the remedy.

4. Magnitude of groundwater quality exceedance –Groundwater exceedances of PH Cleanup Levels and JSCS screening levels include PAHs and metals. Exceedances detected in the borings were generally low and/or do not indicate the presence of a plume that is likely to re-contaminate future sediment remedial measures or impact the protectiveness of the remedy.

5. Regional background concentrations for naturally occurring chemicals –Regional background concentrations have not been determined for groundwater constituents. However, DEQ notes groundwater concentrations of arsenic, copper, and lead do not appear to be elevated to levels of concern and are predominantly similar to concentrations observed at other sites in the area.

6. Estimate of potential contaminant loading – Potential contaminant loading to the Willamette River is anticipated to be minimal given the limited extent of elevated contaminant concentrations observed at the stie and anticipated attenuation between the site and the River.

7. Potential hydraulic connection between site groundwater and surface water/sediments –While groundwater presents a potentially complete pathway to the river from the site, the limited extent of elevated contaminants observed in site groundwater, the distance to the River and anticipated natural attenuation indicate minimal potential for discharge of contaminants at levels of concern.

8. Potential for groundwater discharge to results in an accumulation in sediment above protective concentrations – To the extent that groundwater contaminants are present above PH Cleanup Levels in site groundwater, they are not expected to reach or accumulate in sediment.

6.0 Source Control Decision

The Former Automatic Vending Company site has been adequately characterized. The sources, nature, and extent of contamination are understood. The source control evaluation prepared by NV5 on behalf of BCS America LLC presents an acceptable evaluation that generally follows the JSCS and allows DEQ to make this source control decision.

The source control decision review of migration pathways to the Willamette River identified the groundwater migration pathway and the stormwater migration pathway as the only potentially complete pathways to the river for historical contamination at the site. DEQ's source control decision is that additional source control measures are not warranted and these contaminant transport pathways do not pose a significant current or likely future threat to the Willamette River.

7.0 References

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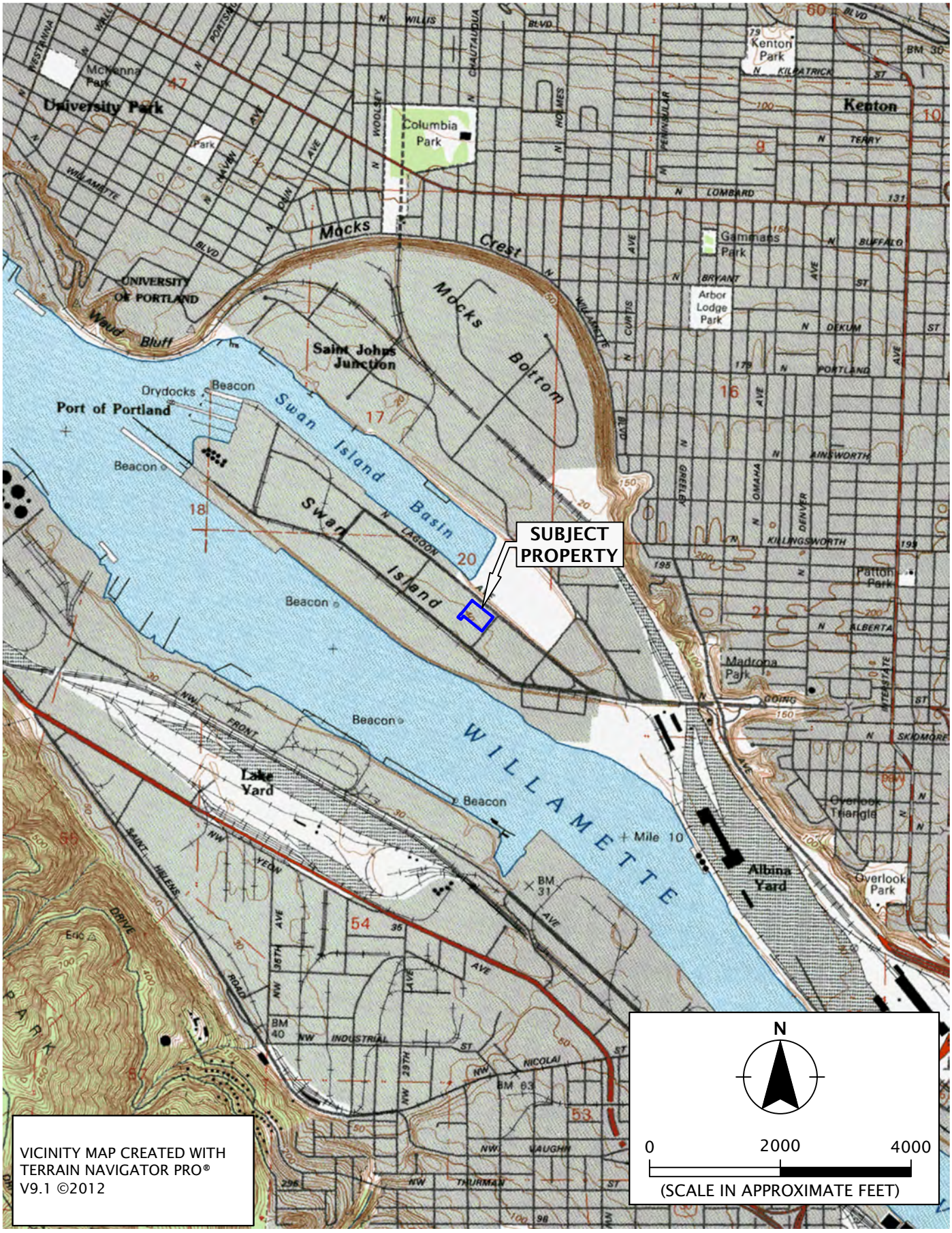
NV5, 2022. Final Stormwater Sampling Event; 5001 N. Lagoon Avenue, Portland, Oregon, prepared by NV5, dated August 12, 2024.

NV5, 2022. Source Control Evaluation Report; 5001 N. Lagoon Avenue, Portland, Oregon, prepared by NV5, dated January 27, 2025.

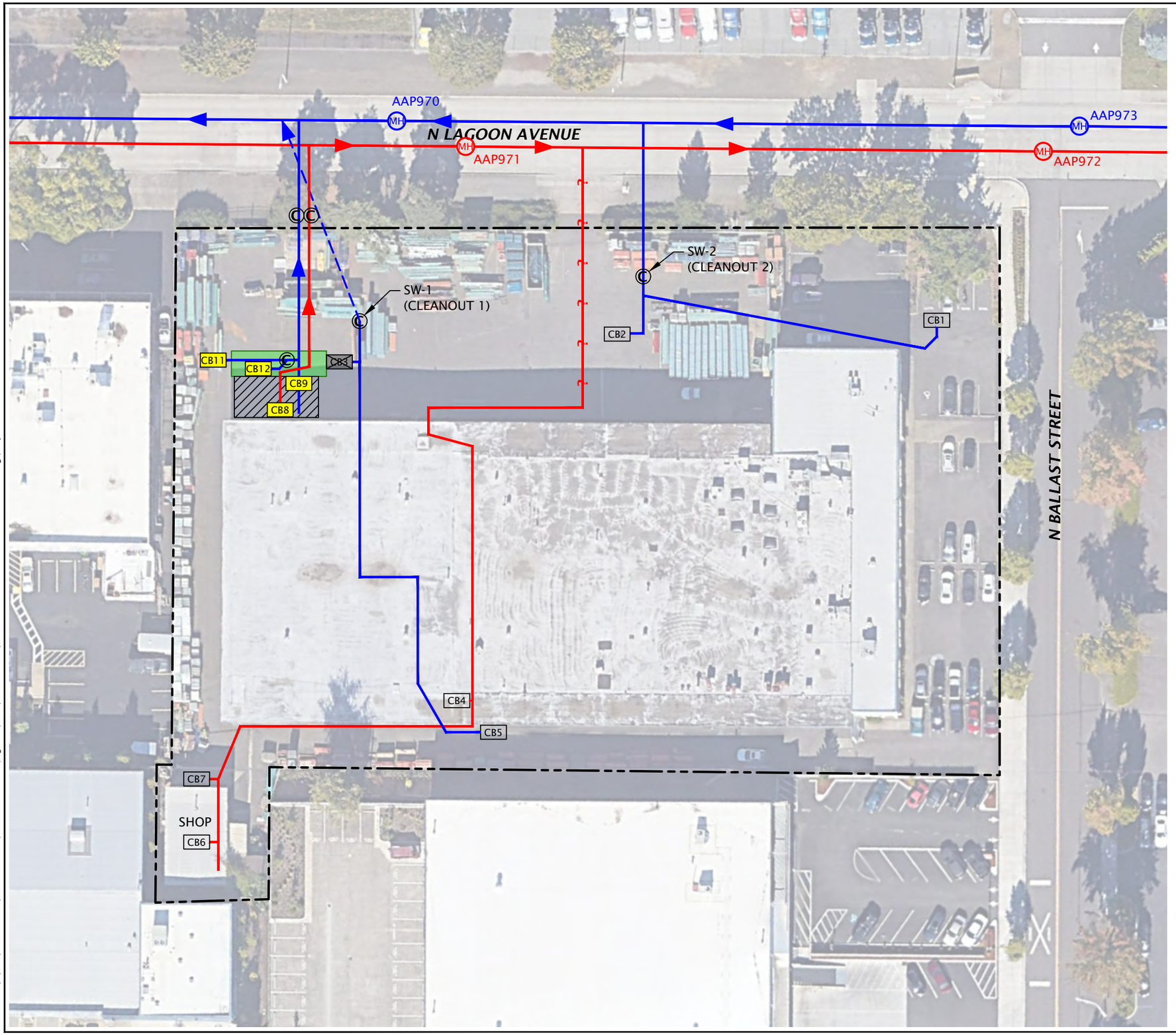
NV5, 2024. Stormwater Pollution Control Plan; 5001 N. Lagoon Avenue, Portland, Oregon, prepared by NV5, dated August 12, 2025.

Attachment 1-Figures



NIV5	BCSAMERICA-1-02	**VICINITY MAP**	
	JANUARY 2025	FORMER AUTOMATIC VENDING COMPANY PORTLAND, OR	**FIGURE 1**

Printed By: Andy.Day | Print Date: 1/4/2025 11:02:14 AM
File Name: J:\A-D\BCSAmerica\BCSAmerica-1\BCSAmerica-1-02\Figures\CAD\SCE REVISED\BCSAmerica-1-02-VM01.dwg | Layout: FIGURE 1



LEGEND:

- SUBJECT PROPERTY BOUNDARY
- STORM LINE (FLOW DIRECTION SHOWN)
- CONCRETE STORM LINE (FLOW DIRECTION SHOWN)
- SANITARY LINE (FLOW DIRECTION SHOWN)
- CB1 — CATCH BASIN
- CB3 — CATCH BASIN REMOVED IN 2022
- © — CLEANOUT (INSTALLED JANUARY 2021)
- AAP970 (MH) — MANHOLE
- CB8 — NEW CATCH BASIN
- NEW VEGETATED SWALE
- NEW LOADING DOCK

NOTE:

QUESTION MARKS DENOTE PORTIONS OF THE LINE THAT COULD NOT BE SCOPED.

N

0 50 100

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, FEBRUARY 28, 2020

STORMWATER CONVEYANCE SYSTEM - UPDATED

FIGURE 6

FORMER AUTOMATIC VENDING COMPANY
PORTLAND, OR

BCSAMERICA-1-02

JANUARY 2025

NV5

LEGEND:

DP-1 ◎	DIRECT-PUSH BORING (GEODESIGN, 2019)
B-1 ◒	BORING (PEMCO, 1992)
B-1 •	BORING (K&S ENVIRONMENTAL, 2019)
C1 ▪	CONFIRMATION SOIL SAMPLE (K&S ENVIRONMENTAL, 2019)
1 ⊗	CONFIRMATION SOIL SAMPLE (PEMCO, NOVEMBER 1991)
1 ○	CONFIRMATION SOIL SAMPLE (PEMCO, OCTOBER 1991)
	UST REMEDIAL EXCAVATION (1991)
	HYDRAULIC HOIST REMEDIAL EXCAVATION (2019)
CB	CATCH BASIN

CONCENTRATIONS EXCEEDING PORTLAND HARBOR CULS AND DEQ JSCS SLVS ARE SHOWN.
CONCENTRATIONS IN MG/KG.

N

0 10 20

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, FEBRUARY 28, 2020

SOIL CONCENTRATIONS - SHOP DETAIL

FIGURE 3

FORMER AUTOMATIC VENDING COMPANY
PORTLAND, OR

BCSAMERICA-1-02

JANUARY 2025

NV5

Printed By: Andy.Day | Print Date: 1/4/2025 11:02:24 AM
File Name: J:\VA-DV\BCSAmerica\BCSAmerica-1\BCSAmerica-1-02\Figures\CAD\SCE REVISED\BCSAmerica-1-02-SOIL-CONCS-SHOP.dwg | Layout: FIGURE 3

Attachment 2-Tables

TABLE 1
Summary of Sediment Sample Chemical Analytical Results
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Analyte	Portland Harbor CULs[1] (µg/kg)	JSCS SLVs[2] (µg/kg)	CB-1 (µg/kg)		CB-2 (µg/kg)		CB-3 (µg/kg)	CB-4 (µg/kg)	CB-5 (µg/kg)		CB-6 (µg/kg)	CB-7 (µg/kg)
Sample Date			12/17/20	12/14/21	12/17/20	12/16/21	12/17/20	12/17/20	12/17/20	12/14/21	12/17/20	12/17/20
Petroleum Hydrocarbons												
Gasoline-Range Hydrocarbons	NE	NE	**33,200**	--	**10,100** J	--	56,000 U	14,200 U	11,600 U	--	**31,100**	83,900 U
Diesel-Range Hydrocarbons	91,000	NE	49,900 U	*524,000 U*	*97,800 U*	*957,000 U*	*96,100 U*	*495,000 U*	*97,600 U*	*1,590,000 U*	*97,300 U*	49,600 U
Oil-Range Hydrocarbons	NE	NE	**1,960,000**	**5,610,000**	**3,120,000**	**5,910,000**	**3,200,000**	**4,780,000**	**3,450,000**	**24,300,000**	**2,480,000**	**2,590,000**
Metals/Inorganics												
Antimony	NE	64,000	**956** J	**4,220** J	**1,070**	**2,400**	**1,030**	**2,710** Q-42	**2,230**	**2,650** J	**593** J	**1,280**
Arsenic	3,000	7,000	**1,590**	**4,780** J	**3,650**	**4,530**	**1,770**	**3,890**	**1,780**	**4,630**	**2,300**	**4,270**
Beryllium	NE	NE	101 U	535 U	100 U	**291** J	100 U	106 U	104 U	308.0 U	108 U	104 U
Cadmium	510	1,000	**265**	**754** J	**1,180**	**872**	**239**	**2,490**	**1,180**	**1,280**	**1,240**	**1,150**
Chromium, total	NE	111,000	**30,400**	**127,000**	**27,600**	**49,600**	**29,500**	**276,000** Q-42	**41,200**	**119,000**	**16,700**	**34,400**
Copper	359,000	149,000	**41,000**	**171,000**	**87,800**	**97,400**	**51,600**	**153,000**	**107,000**	**160,000**	**92,000**	**244,000**
Lead	196,000	17,000	**19,000**	**42,000**	**29,000**	**65,200**	**46,900**	**67,500**	**71,800**	**107,000**	**30,800**	**24,000**
Mercury	85	70	40.2 U	*214 U*	40.1 U	**343**	**53.1** J	**416**	**148**	**249**	**84.3** J	**197**
Nickel	NE	48,600	**13,800**	**37,900**	**22,300**	**21,000**	**12,000**	**33,800**	**21,200**	**53,300**	**17,500**	**62,900**
Selenium	NE	2,000	503 U	*2,670 U*	501 U	965 U	500 U	547 U	520 U	1,540 U	538 U	519 U
Silver	NE	5,000	101 U	535 U	100 U	**205** J	**148** J	**333**	**273**	**350** J	**183** J	**175** J
Zinc	459,000	459,000	**224,000**	**536,000**	**383,000**	**549,000**	**5,860,000**	**661,000**	**1,620,000**	**1,600,000**	**253,000**	**1,050,000**
Butyltins												
Monobutyltin	NE	NE	4.1 U	--	1.9 U	--	2.3 U	5.1 U	4.2 U	--	4.0 U	3.4 U
Dibutyltin	NE	NE	**29**	--	**9.7**	--	1.2 U	5.1 U	4.2 U	--	4.0 U	3.4 U
Tributyltin	3,080	2.3	**23**	--	2.0 U	--	*2.5 U*	*5.5 U*	*4.5 U*	--	*4.3 U*	*3.7 U*
Tetrabutyltin	NE	NE	2.2 U	--	1.0 U	--	1.2 U	2.8 U	2.2 U	--	2.2 U	1.8 U
PCBs Aroclors												
Aroclor 1016	NE	530	9.13 U	10.2 U	8.47 U	18.7 U	8.16 U	9.26 U	96.2 U	31.1 U	19.6 U	9.66 U
Aroclor 1221	NE	NE	9.13 U	10.2 U	8.47 U	18.7 U	8.16 U	9.26 U	96.2 U	31.1 U	19.6 U	19.3 U
Aroclor 1232	NE	NE	18.3 U	10.2 U	16.9 U	18.7 U	8.16 U	9.26 U	96.2 U	31.1 U	60.4 U	19.3 U
Aroclor 1242	NE	NE	9.13 U	10.2 U	8.47 U	**38.2**	**111** P-12	**32.8** P-12	96.2 U	31.1 U	19.6 U	9.66 U
Aroclor 1248	NE	1,500	9.13 U	10.2 U	8.47 U	18.7 U	8.16 U	9.26 U	96.2 U	31.1 U	19.6 U	19.3 U
Aroclor 1254	NE	300	9.13 U	**11.6** J	**12.4** J	**91.9**	**45.6** P-12	**311** P-12	**1,480**	**194**	**40.0** P-12	**53.1** P-12
Aroclor 1260	NE	200	9.13 U	10.2 U	**15.2** J	**39.7**	**23.6** P-12	**43.3** P-12	96.2 U	**55.1**	**21.7** P-12	**50.2** P-12
Total PCBs												
0	9	0.39	0 U	**11.6**	**27.6**	**170**	**180**	**387**	**1,480**	**249**	**61.7**	**103**

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Portland, Oregon

Analyte	Portland Harbor CULs[1] (µg/kg)	JSCS SLVs[2] (µg/kg)	CB-1 (µg/kg)		CB-2 (µg/kg)		CB-3 (µg/kg)	CB-4 (µg/kg)	CB-5 (µg/kg)		CB-6 (µg/kg)	CB-7 (µg/kg)
Sample Date			12/17/20	12/14/21	12/17/20	12/16/21	12/17/20	12/17/20	12/17/20	12/14/21	12/17/20	12/17/20
Chlorinated Herbicides												
Dalapon	NE	NE	230 U	--	110 U	--	130 U	260 U	230 U	--	230 U	180 U
Dicamba	NE	NE	15 U	--	6.9 U	--	8.2 U	17 U	15 U	--	15 U	12 U
MCPA	NE	NE	33,000 U	--	15,000 U	--	18,000 U	38,000 U	33,000 U	--	33,000 U	26,000 U
Dichlorprop	NE	NE	150 U	--	72 U	--	85 U	180 U	150 U	--	150 U	120 U
2,4-D	NE	NE	150 U	--	71 U	--	84 U	180 U	150 U	--	150 U	120 U
2,4,5-TP (Silvex)	NE	NE	11 U	--	**15** J	--	**9** J, P	**25** J	11 U	--	11 U	9.1 U
2,4,5-T	NE	NE	12 U	--	5.4 U	--	6.4 U	13 U	12 U	--	12 U	9.2 U
2,4-DB	NE	NE	150 U	--	68 U	--	81 U	170 U	150 U	--	150 U	120 U
Dinoseb	NE	NE	60 U	--	28 U	--	33 U	70 U	60 U	--	60 U	48 U
MCPP	NE	NE	21,000 U	--	9,700 U	--	11,000 U	24,000 U	21,000 U	--	21,000 U	16,000 U
Organochlorine Pesticides												
α - BHC	NE	NE	16.5 U	--	7.84 U	--	9.30 U	9.62 U	9.80 U	--	4.72 U	4.33 U
β - BHC	NE	NE	16.5 U	--	7.84 U	--	9.30 U	9.62 U	28.40 U	--	13.7 U	8.66 U
γ - BHC (Lindane)	5	4.99	*16.5 U*	--	*7.84 U*	--	*9.30 U*	*9.62 U*	*9.80 U*	--	4.72 U	4.33 U
δ - BHC	NE	NE	16.5 U	--	7.84 U	--	9.30 U	9.62 U	9.80 U	--	9.43 U	4.33 U
Heptachlor	NE	10	16.5 U	--	7.84 U	--	9.30 U	9.62 U	9.80 U	--	4.72 U	4.33 U
Heptachlor epoxide	NE	16	16.5 U	--	7.84 U	--	9.30 U	9.62 U	9.80 U	--	9.43 U	4.33 U
Aldrin	2	40	*16.5 U*	--	*7.84 U*	--	*9.30 U*	*9.62 U*	*9.80 U*	--	*9.43 U*	*4.33 U*
Chlordane	NE	0.37	*496 U*	--	*235 U*	--	*279 U*	*288 U*	*294 U*	--	*142 U*	*130 U*
Endosulfan I	NE	NE	16.5 U	--	7.84 U	--	9.3 U	9.62 U	9.80 U	--	4.72 U	4.33 U
Endosulfan II	NE	NE	16.5 U	--	7.84 U	--	9.3 U	9.62 U	9.80 U	--	4.72 U	4.33 U
Endosulfan sulfate	NE	NE	16.5 U	--	7.84 U	--	9.3 U	9.62 U	9.80 U	--	4.72 U	4.33 U
DDE	226	0.33	*16.5 U*	--	*7.84 U*	--	*9.30 U*	*9.62 U*	*19.60 U*	--	*9.43 U*	*4.33 U*
DDD	114	0.33	*47.9 U*	--	*15.7 U*	--	*9.30 U*	*9.62 U*	*9.80 U*	--	*4.72 U*	*4.33 U*
DDT	246	0.33	*33.1 U*	--	*7.84 U*	--	*9.30 U*	*19.2 U*	*50.0 U*	--	*9.43 U*	*8.66 U*
DDT - total (DDE+DDD+DDT)	NE	0.33	*97.5 U*	--	*31.4 U*	--	*27.9 U*	*38.4 U*	*79.4 U*	--	*23.6 U*	*17.3 U*
Dieldrin	0.007	0.0081	*16.5 U*	--	*7.84 U*	--	*9.30 U*	*9.62 U*	*19.6 U*	--	*4.72 U*	*4.33 U*
Endrin	NE	207	16.5 U	--	7.84 U	--	9.30 U	19.2 U	9.80 U	--	4.73 U	4.33 U
Endrin aldehyde	NE	NE	33.1 U	--	15.7 U	--	9.30 U	9.62 U	9.80 U	--	4.82 U	4.33 U
Endrin ketone	NE	NE	33.1 U	--	15.7 U	--	9.3 U	9.62 U	9.8 U	--	4.72 U	4.33 U
Methoxychlor	NE	NE	49.6 U	--	23.5 U	--	27.9 U	28.8 U	29.4 U	--	14.2 U	13.0 U
Toxaphene	NE	NE	496 U	--	235 U	--	279 U	288 U	294 U	--	142 U	130 U

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Sample Date			12/17/20	12/14/21	12/17/20	12/16/21	12/17/20	12/17/20	12/17/20	12/14/21	12/17/20	12/17/20
VOCs[3]												
4-Isopropyltoluene	NE	NE	**448**	--	**76.3** J	--	**56.0**	142 U	116 U	--	**377**	83.9 U
1,2,4-TMB	NE	NE	144 U	--	**160**	--	56.0 U	142 U	116 U	--	**552**	**122**
1,3,5-TMB	NE	NE	144 U	--	**86.1**	--	56.0 U	142 U	116 U	--	**194**	83.9 U
m,p-Xylene	NE	NE	144 U	--	70.6 U	--	56.0 U	142 U	116 U	--	**220** J	83.9 U
o-Xylene	NE	NE	71.8 U	--	**35.3** J	--	28.0 U	70.8 U	57.8 U	--	**111** J	41.9 U
Toluene	NE	NE	**207**	--	**110** J	--	56.0 U	142 U	116 U	--	**552**	**122** J
Vinyl Chloride	NE	NE	71.8 U	--	35.3 U	--	28.0 U	70.8 U	57.8 U	--	71.4 U	41.9 U
Organonitrogen Compounds												
Carbazole	NE	1,600	*5,290 U*	**4,150**	1,240 U	**531** J	1,300 U	685 U	593 U	1,240 U	531 U	517 U
Oxygen-Containing Compounds												
Dibenzofuran	NE	NE	937 U	**361** J	828 U	254 U	867 U	455 U	394 U	827 U	353 U	344 U
Phthalate Esters												
Dimethylphthalate	NE	NE	9,370 U	2,780 U	8,280 U	2,540 U	8,670 U	4,550 U	3,840 U	8,270 U	3,530 U	3,440 U
Di-n-butylphthalate	NE	60	*9,370 U*	*2,780 U*	*8,280 U*	2,540 *U*	*8,670 U*	*4,550 U*	*3,840 U*	*8,270 U*	*3,530 U*	*3,440 U*
Butylbenzylphthalate	NE	NE	9,370 U	2,780 U	8,280 U	2,540 U	8,670 U	4,550 U	3,840 U	8,270 U	3,530 U	3,440 U
Di-n-octylphthalate	NE	NE	9,370 U	2,780 U	8,280 U	2,540 U	8,670 U	4,550 U	3,840 U	8,270 U	3,530 U	3,440 U
bis(2-Ethylhexyl)phthalate	135	330	*14,100 U*	*4,180 U*	*12,400 U*	**9,250**	*13,000 U*	**10,300** J	**6,940** J	*12,400 U*	**13,600**	**12,900**
PAHs												
Naphthalene[4]	NE	561	**336** J	558 U	**154** J	509 U	112 U	283 U	231 U	*1,660 U*	**286** J	**168** J
2-Methylnaphthalene	NE	200	*1,880 U*	*558 U*	*1,660 U*	509 *U*	*1,740 U*	*914 U*	*732 U*	*1,660 U*	*709 U*	*691 U*
Acenaphthylene	NE	200	*937 U*	278 U	*828 U*	254 U	*867 U*	*455 U*	*394 U*	*827 U*	*353 U*	*344 U*
Acenaphthene	NE	300	**957** J, Q-42	**387** J	*828 U*	254 U	*867 U*	*455 U*	*394 U*	*827 U*	*353 U*	*344 U*
Fluorene	NE	536	*937 U*	**412** J	*828 U*	254 U	*867 U*	455 U	394 U	*827 U*	353 U	344 U
Phenanthrene	NE	1,170	**17,200**	**11,500**	**2,490**	**1,830**	**1,620**	**687** J	**649** J	**1,130** J	353 U	344 U
Anthracene	NE	845	**3,070**	**1,780**	828 U	**351**	*867 U*	455 U	394 U	827 U	353 U	344 U
Fluoranthene	NE	2,230	**41,200**	**28,400**	**7,240**	**3,970**	**3,910**	**1,320**	**1,320**	**2,140** J	353 U	344 U
Pyrene	NE	1,520	**37,400**	**26,200**	**6,710**	**3,770**	**3,620**	**1,410**	**1,430**	**2,460**	353 U	344 U
Benzo(a)anthracene	NE	1,050	**14,400**	**10,300**	**3,650**	**1,500**	**1,730** J	**572** J	**665** J	**1,480** J	353 U	344 U
Chrysene	NE	1,290	**26,600**	**17,300**	**4,640**	**2,140**	**2,710**	**1,080**	**1,290**	**2,770**	353 U	344 U
Benzo(b)fluoranthene	NE	NE	**27,300** M-05	**22,800**	**4,590** M-05	**2,410**	**3,160** M-05	**1,400** M-05	**1,400** M-05	**1,980** J	531 U	517 U
Benzo(k)fluoranthene	NE	13,000	**18,600**	**9,660**	**3,690** M-05	**1,120**	**2,490** J	**1,020** J	**954** J	1,240 U	531 U	517 U
Benzo(a)pyrene	NE	1,450	**21,400**	**15,300**	**4,160**	**1,880**	**2,760**	**1,220** J	**665** J	**2,230** J	353 U	344 U
Indeno(1,2,3-cd)pyrene	NE	100	**21,100**	**13,300**	**2,870**	**1,370**	**1,740**	**760** J	**647** J	**1,010** J	*353 U*	*344 U*

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Analyte	Portland Harbor CULs[1] (µg/kg)	JSCS SLVs[2] (µg/kg)	CB-1 (µg/kg)		CB-2 (µg/kg)		CB-3 (µg/kg)	CB-4 (µg/kg)	CB-5 (µg/kg)		CB-6 (µg/kg)	CB-7 (µg/kg)
Sample Date			12/17/20	12/14/21	12/17/20	12/16/21	12/17/20	12/17/20	12/17/20	12/14/21	12/17/20	12/17/20
Dibenz(a,h)anthracene	NE	1,300	2,900	2,720	828 U	346 J	867 U	384 U	394 U	827 U	353 U	344 U
Benzo(g,h,i)perylene	NE	300	21,100	13,300	2,970	1,360	1,740	580 J	628 J	1,330 J	*353 U*	*344 U*
cPAHs	774	NE	31,004	22,907	5,656	2,781	3,902	1,661	1,705	3,111	508	495
Total PAHs												
0	23,000	NE	253,563	173,359	43,164	22,047	25,480	10,049	9,648	16,530	286	168
Chlorinated Dioxins and Furans												
2,3,7,8,-TCDD (Toxicity Equivalence Quotient)	1.00E-02	NE	2.43E-02	5.49E-02	1.99E-02	1.20E-01	1.91E-02	1.12E-01	8.49E-02	3.76E-01	1.51E-03	2.25E-03
2,3,7,8,-TCDD	2.00E-04	9.10E-06	*1.28E-02 U*	3.87E-03	2.76E-03 J	3.46E-03	*4.20E-03 U*	*5.83E-03 U*	*3.80E-03 U*	4.79E-03	*5.91E-03 U*	*5.69E-03 U*
2,3,7,8,-TCDF	4.07E-04	7.70E-04	*1.14E-02 U*	2.83E-03	*4.04E-03 U*	5.48E-03	5.80E-03 J, K	3.99E-02	1.27E-03	1.60E-02	*7.65E-03 U*	*7.52E-03 U*
1,2,3,7,8,-PeCDD	2.00E-04	2.60E-03	1.44E-02 J	1.98E-02	6.63E-03 J, K	2.64E-02	9.06E-03 J, K	2.15E-02 J	2.09E-02 J, K	7.01E-02	*1.25E-02 U*	*7.74E-03 U*
1,2,3,7,8,-PeCDF	NE	2.60E-03	*5.61E-03 U*	2.68E-03	3.20E-03 B, J	4.15E-03	4.47E-03 J, K	3.65E-02 J, K	9.71E-03 J, K	1.35E-02	*7.69E-03 U*	*5.42E-03 U*
2,3,4,7,8,-PeCDF	3.00E-04	3.00E-05	*5.35E-03 U*	5.20E-03	4.42E-03 J,K	1.01E-02	5.28E-03 J, K	6.72E-02 J	1.38E-02 J, K	5.57E-02	*6.63E-03 U*	*5.26E-03 U*
1,2,3,4,7,8-HxCDD	NE	NE	1.10E-02 U	2.19E-02	5.09E-03 J	4.22E-02	7.38E-03 J,K	2.53E-02 J	1.90E-02 J,K	1.29E-01	1.02E-02 U	6.97E-03 U
1,2,3,6,7,8,-HxCDD	NE	NE	1.14E-02 J, K	3.98E-02	1.31E-02 J, K	1.02E-01	1.30E-02 J, K	7.01E-02 J	6.09E-02 J	3.62E-01	9.95E-03 U	7.24E-03 U
1,2,3,7,8,9,-HxCDD	NE	NE	2.69E-02 J, K	3.54E-02	9.82E-03 J	5.37E-02	1.37E-05 J	5.30E-02 J	4.82E-02 J	1.63E-01	1.02E-02 U	7.19E-03 U
1,2,3,4,7,8,-HxCDF	4.00E-04	2.70E-03	7.55E-03 J	9.83E-03	5.03E-03 J	1.67E-02	7.59E-03 J	6.92E-02 J	2.41E-02 J	1.08E-01	6.25E-03 J	6.30E-03 J, K
1,2,3,6,7,8,-HxCDF	NE	2.70E-03	6.11E-03 U	8.17E-03	4.24E-03 J, K	1.76E-02	6.05E-03 J, K	6.20E-02 J	1.85E-02 J, K	1.00E-01	*5.57E-03 U*	*6.47E-03 U*
1,2,3,7,8,9,-HxCDF	NE	2.70E-03	9.38E-03 U	4.46E-03	*3.49E-03 U*	6.45E-03	*5.03E-03 U*	2.04E-02 J, K	6.10E-03 J, K	5.62E-02	*7.18E-03 U*	*8.84E-03 U*
2,3,4,6,7,8,-HxCDF	NE	2.70E-03	7.72E-03 J, K	1.21E-02	5.41E-03 J, K	2.64E-02	5.38E-03 J, K	6.03E-02 J, K	2.08E-02 J	1.61E-01	*5.95E-03 U*	*6.74E-03 U*
1,2,3,4,6,7,8,-HpCDD	NE	6.90E-01	2.94E-01	1.17E+00	3.42E-01	4.18E+00	3.00E-01	1.99E+00	2.63E+00	1.19E+01	5.70E-02 J	1.08E-01 J
1,2,3,4,6,7,8,-HpCDF	NE	6.90E-01	5.66E-02 J ,K	1.36E-01	4.96E-02 J	4.83E-01	5.90E-02 J	5.70E-01	3.88E-01	3.00E+00	1.81E-02 J ,K	2.89E-02 J
1,2,3,4,7,8,9,-HpCDF	NE	6.90E-01	1.69E-02 U	9.47E-03	4.07E-03 U	2.69E-02	8.53E-03 U	4.53E-02 J, K	2.50E-02 J	2.14E-01	9.14E-03 U	9.90E-03 U
OCDD	NE	2.30E+01	3.55E+00	1.71E+01	4.70E+00	5.69E+01	3.32E+00	2.01E+01	3.71E+01	1.20E+02	4.54E-01	8.20E-01
OCDF	NE	2.30E+01	9.73E-02 J	2.76E-01	1.08E-01 J	8.63E-01	1.12E-01	1.16E+00	7.94E-01	6.41E+00	2.79E-02 J	4.33E-02 J
Total tetrachlorinated dioxins	NE	NE	1.28E-02 U	3.25E-02	2.76E-03 J	2.62E-02	4.20E-03 J	2.14E-02 J, K	1.65E-02 J	3.78E-02	5.91E-03 U	5.69E-03 U
Total pentachlorinated dioxins	NE	NE	8.07E-02 J, K	1.10E-01	2.28E-02 J, K	1.37E-01	3.43E-02 J, K	1.31E-01 J, K	1.20E-01 J, K	2.90E-01	1.25E-02 U	7.74E-03 U
Total hexachlorinated dioxins	NE	NE	1.80E-01 J, K	4.16E-01	1.06E-01 J, K	4.16E-01	1.25E-01 J, K	5.84E-01 J, K	5.29E-01 J, K	8.20E-01	9.95E-03 U	3.23E-02 J, K
Total heptachlorinated dioxins	NE	NE	6.24E-01	2.42E+00	6.93E-01	8.51E+00	6.31E-01	3.98E+00	5.27E+00	3.73E+01	1.05E-01 J	2.18E-01 J
Total tetrachlorinated furans	NE	NE	1.14E-02 U	7.50E-02	1.93E-02 J, K	1.12E-01	1.77E-02 J, K	7.75E-01 J, K	9.37E-02 J, K	3.19E-01	7.65E-03 U	7.52E-03 U
Total pentachlorinated furans	NE	NE	3.09E-02 J, K	9.01E-02	5.71E-02 J, K	2.36E-01	6.67E-02 J, K	7.17E-01 J, K	2.03E-01 J, K	1.22E+00	5.87E-03 B, J ,K	1.62E-02 J, K
Total hexachlorinated furans	NE	NE	7.39E-02 J, K	2.61E-01	8.53E-02 J, K	1.10E+00	9.16E-02 J, K	8.59E-01 J, K	5.28E-01 J, K	7.44E+00	1.56E-02 B, J ,K	4.16E-02 J, K
Total heptachlorinated furans	NE	NE	1.41E-01 J, K	3.61E-01	1.37E-01 J, K	1.49E+00	1.49E-01 J, K	1.48E+00 J, K	1.19E+00 J	1.69E+01	5.13E-02 J, K	6.93E-02 J

TABLE A-1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)		Total Petroleum Hydrocarbons (mg/kg)	TPH Method 418.1 (mg/kg)
				Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range		
Confirmation Soil Samples - Northeastern USTs											
#1	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#2	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#3	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#4	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#5	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#6	14	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#7	12	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
#8	12	Unknown	09/27/91	ND	ND	ND	–	–	–	–	–
Confirmation Soil Samples - Shop USTs											
1	8	Unknown	10/17/91	ND	ND	DET	–	–	–	–	970
2	8	Unknown	10/17/91	ND	ND	DET	–	–	–	–	1,200
3	7	Unknown	10/17/91	ND	ND	DET	–	–	–	–	2,300
4	8	Unknown	10/17/91	ND	ND	DET	–	–	–	–	990
1	6	Unknown	11/18/91	–	–	–	–	–	–	–	690
2	7	Unknown	11/18/91	–	–	–	–	–	–	–	590
3	9	Unknown	11/18/91	–	–	–	–	–	–	–	260
4	7	Unknown	11/18/91	–	–	–	–	–	–	–	190
5	7.5	Unknown	11/18/91	–	–	–	–	–	–	–	930
6	8	Unknown	11/18/91	–	–	–	–	–	–	–	390
7	8.5 - 9	Unknown	11/18/91	–	–	–	–	–	–	–	1,400
8	7.5	Unknown	11/18/91	–	–	–	–	–	–	–	220
9	7	Unknown	11/18/91	–	–	–	–	–	–	–	910
10	7.5	Unknown	11/18/91	–	–	–	–	–	–	–	1,600
11	6.5	Unknown	11/18/91	–	–	–	–	–	–	–	900
12	6.5-7	Unknown	11/18/91	–	–	–	–	–	–	–	210
K&S Borings											
B-1 - #1	4	Native	01/09/19	ND	ND	ND	–	–	–	–	–
B-2 - #2	4	Native	01/09/19	ND	ND	DET	–	25.0 U		402	427	–
B-3 - #3*	7	Native	01/09/19	–	–	–	70.5	25,800		17,000	42,871	–
B-4 - #4	8	Native	01/09/19	–	–	–	–	25.0 U		610	635	–
B-3 - #5*	9	Native	01/09/19	–	–	–	–	*357 U*		10,200	10,557	–
Confirmation Soil Samples - Hydraulic Hoist Remedial Excavation											
C1	12	Native	03/08/19	–	–	–	–	25.0 U		1,450	1,475	–
C2	12	Native	03/08/19	–	–	–	–	25.0 U		1,060	1,085	–
C3	9	Native	03/08/19	–	–	–	–	*948 U*		3,600	4,548	–

TABLE A-1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)		Total Petroleum Hydrocarbons (mg/kg)	TPH Method 418.1 (mg/kg)
				Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range		
C4	9	Native	03/08/19	–	–	–	–	25.0 U	50.0 U	**75.0**	–
C5	9	Native	03/08/19	–	–	–	–	25.0 U	**60.7**	**85.7**	–
C6	9	Native	03/08/19	–	–	–	–	25.0 U	50.0 U	**75.0**	–
C7	10	Native	03/08/19	–	–	–	–	**276**	**326**	**602**	–
C8	14	Native	03/08/19	–	–	–	–	25.0 U	**718**	**743**	–
GeoDesign Borings											
DP-1	11-12.5	Native	07/18/19	–	–	–	3.04 U	11.1 U	22.2 U	36.3	–
DP-2	11-12.5	Native	07/18/19	–	–	–	3.10 U	9.64 U	19.3 U	32.0	–
DP-2	21-22.5	Native	07/18/19	–	–	–	2.89 U	9.81 U	**261**	274	–
DP-2	25-26.5	Native	07/18/19	–	–	–	–	11.6 U	23.3 U	34.9	–
DP-3	10-11.5	Native	07/18/19	–	–	–	2.83 U	9.77 U	19.5 U	32.1	–
DP-4	11.5-13	Native	07/19/19	–	–	–	2.87 U	9.90 U	19.8 U	32.6	–
DP-5	10-11.5	Native	07/19/19	–	–	–	3.12 U	10.6 U	21.3 U	35.0	–
DP-6	12-13.5	Native	07/19/19	–	–	–	2.76 U	9.72 U	19.4 U	31.9	–
DP-7	11.5-13	Native	07/19/19	–	–	–	2.59 U	10.4 U	20.7 U	33.7	–
DP-8	11.5-13	Native	07/19/19	–	–	–	3.01 U	10.1 U	20.1 U	33.2	–
DP-9	11-12.5	Native	07/19/19	–	–	–	3.18 U	10.6 U	21.3 U	35.1	–
DP-10	6-7.5	Native	07/19/19	–	–	–	3.24 U	10.3 U	20.5 U	34.0	–
DP-11	6-7.5	Fill	07/19/19	–	–	–	**15.0**	*218 U*	**972**	1,205	–
DP-11	10-11.5	Native	07/19/19	–	–	–	**4.42**	10.6 U	21.2 U	36.2	–
DP-12	5-6.5	Fill	07/19/19	–	–	–	**14.5**	*213 U*	**1,360**	1,588	–
DP-12	10-11.5	Native	07/19/19	–	–	–	2.99 U	10.0 U	20.1 U	33.1	–
DP-13	5-6.5	Fill	07/19/19	–	–	–	**22.0**	*315 U*	**1,680**	2,017	–
DP-13	10-11.5	Native	07/19/19	–	–	–	3.38 U	10.3 U	20.5 U	34.2	–
DP-14	0.5-1.5	Fill	07/16/20	–	–	–	2.90 U	10.6 U	**427**	441	–
DP-14	1.5-2.5	Native	07/16/20	–	–	–	2.93 U	10.8 U	43.0 U	56.7	–
DP-15	1-2	Fill	07/16/20	–	–	–	**8.48**	*225 U*	**1,940**	2,173	–
DP-15	2.5-3.5	Native	07/16/20	–	–	–	2.50 U	10.1 U	40.5 U	53.1	–
DP-16	6-7	Native	07/16/20	–	–	–	2.96 U	10.2 U	40.7 U	53.9	–
DP-17	0.5-1.5	Fill	07/16/20	–	–	–	3.20 U	11.8 U	**47.1**	62.1	–
DP-17	2-3	Native	07/16/20	–	–	–	3.13 U	12.1 U	**30.1**	45.3	–
DP-18	2-3	Fill	07/16/20	–	–	–	3.25 U	12.2 U	**29.0**	44.5	–
DP-19	0.5-1.5	Fill	07/16/20	–	–	–	3.18 U	11.5 U	23.0 U	37.7	–

TABLE A-1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)		Total Petroleum Hydrocarbons (mg/kg)	TPH Method 418.1 (mg/kg)
				Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range		
Off-Site Borings											
#1 B-1	5-6.5	Fill	05/05/92	–	–	–	–	–	–	--	**1,100**
#2 B-1	7.5-8	Fill	05/05/92	–	–	–	–	–	–	--	**1,400**
#3 B-2	4-5.5	Fill	05/05/92	–	–	–	–	–	–	--	**1,800**
#4 B-2C	7-8.5	Fill	05/05/92	–	–	–	–	–	–	--	ND
#5 B-3	4-5.5	Fill	05/05/92	–	–	–	–	–	–	--	**66**
#6 B-3	7-8.5	Fill	05/05/92	–	–	–	–	–	–	--	**2,000**
EPA Portland Harbor CULs[1]				NE	NE	NE	NE	91	NE	NE	NE
DEQ JSCS SLVs[2]				NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
DET: detected
ND: not detected at concentrations greater than the reporting or detection limit shown
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.
--: not analyzed
* Soil represented by this samples was subsequently removed.

TABLE A-2
Summary of Soil Sample Chemical Analytical Results
EPH and VPH
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/ Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	EPH Method NWEPH (mg/kg)										VPH Method NWVPH (mg/kg)						
				C8-C10 Aliphatic	C10-C12 Aliphatic	C12-C16 Aliphatic	C16-C21 Aliphatic	C21-C34 Aliphatic	C8-C10 Aromatic	C10-C12 Aromatic	C12-C16 Aromatic	C16-C21 Aromatic	C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C10-C12 Aliphatic	C8-C10 Aromatic	C10-C12 Aromatic	C12-C13 Aromatic
DP-1	11-12.5	Native	07/18/19	25.9 U, C	*13.0 U*	13.0 U	13.0 U	13.0 U	13.0 U, C	13.0 U, C	13.0 U	13.0 U	13.0 U	3.69 U	5.28 U	2.96 U	*3.17 U*	6.33 U	1.27 U	14.8 U
DP-2	11-12.5	Native	07/18/19	18.8 U, C	*9.42 U*	9.42 U	9.42 U	9.42 U	9.42 U, C	9.42 U, C	9.42 U	9.42 U	9.42 U	2.04 U	2.91 U	1.63 U	1.74 U	3.49 U	0.698 U	8.14 U
DP-2	21-22.5	Native	07/18/19	20.4 U, C	*10.2 U*	10.2 U	10.2 U	10.2 U	10.2 U, C	10.2 U, C	10.2 U	10.2 U	10.2 U	1.96 U	2.81 U	1.57 U,Q	1.68 U	3.37 U	**0.880** Q	7.85 U, Q
DP-3	10-11.5	Native	07/18/19	24.4 U, C	*12.2 U*	12.2 U	12.2 U	12.2 U	12.2 U, C	12.2 U, C	12.2 U	12.2 U	12.2 U	2.30 U	3.29 U	1.84 U	1.97 U	3.95 U	0.790 U	9.21 U
DP-5	10-11.5	Native	07/19/19	20.5 U, C	*10.2 U*	10.2 U	10.2 U	10.2 U	10.2 U, C	10.2 U, C	10.2 U	10.2 U	10.2 U	2.01 U	2.87 U	1.61 U	1.72 U	3.44 U	0.688 U	8.03 U
DP-10	6-7.5	Native	07/19/19	20.9 U, C	*10.4 U*	10.4 U	10.4 U	10.4 U	10.4 U, C	10.4 U, C	10.4 U	10.4 U	10.4 U	2.07 U	2.95 U	1.65 U	1.77 U	3.54 U	0.709 U	8.27 U
DP-11	6-7.5	Fill	07/19/19	23.8 U, C	*11.9 U*	11.9 U	11.9 U	**17.1**	11.9 U, C	11.9 U, C	11.9 U	**17.8**	**62.4**	2.90 U	4.14 U	2.32 U	2.49 U	4.97 U	**1.25**	11.6 U
DP-11	10-11.5	Native	07/19/19	18.9 U, C	*9.46 U*	9.46 U	9.46 U	9.46 U	9.46 U, C	9.46 U, C	9.46 U	9.46 U	9.46 U	2.89 U	4.14 U	2.32 U,Q	2.48 U	4.96 U	0.992 U, Q	11.6 U, Q
DP-12	5-6.5	Fill	07/19/19	21.8 U, C	*10.9 U*	**62.9**	**78.8**	**26.9**	10.9 U, C	10.9 U, C	10.9 U	**16.1**	**54.0**	2.28 U	3.26 U	1.83 U	**2.12**	3.91 U	**6.63**	9.13 U
DP-12	10-11.5	Native	07/19/19	21.4 U, C	*10.7 U*	10.7 U	10.7 U	10.7 U	10.7 U, C	10.7 U, C	10.7 U	10.7 U	10.7 U	1.86 U	2.66 U	1.49 U,Q	1.60 U	3.20 U	0.639 U, Q	7.46 U, Q
DP-13	5-6.5	Fill	07/19/19	19.8 U, C	*9.88 U*	**11.4**	**58.3**	**158**	9.88 U, C	9.88 U, C	9.88 U	**25.4**	**128**	1.93 U	2.76 U	**1.83**	**9.89**	3.32 U	**10.4**	**11.8**
DP-13	10-11.5	Native	07/19/19	22.4 U, C	*11.2 U*	11.2 U	11.2 U	11.2 U	11.2 U, C	11.2 U, C	11.2 U	11.2 U	11.2 U	2.58 U	3.68 U	2.06 U,Q	2.21 U	4.42 U	0.884 U, Q	10.3 U, Q
DP-14	0.5-1.5	Fill	07/16/20	22.7 U	*11.4 U*	11.4 U	11.4 U	11.4 U	11.4 U	11.4 U	11.4 U	11.4 U	11.4 U	2.20 U	3.15 U	1.76 U	1.89 U	3.78 U	**6.44**	8.81 U
DP-15	1-2	Fill	07/16/20	19.9 U	*9.97 U*	9.97 U	**11.6**	**172**	9.97 U	9.97 U	9.97 U	**46.2**	**205**	1.65 U	2.35 U	1.32 U	**3.46**	2.82 U	**46.6**	**10.5**
EPA Portland Harbor CULs[1]				NE	2.6	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DEQ JSCS SLVs[2]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
C: Value is not within control limits.
NE: not established
Q: analyte with an initial or continuing calibration that does not meet established acceptance criteria
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.

TABLE A-3
Summary of Soil Sample Chemical Analytical Results
VOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	VOCs[1] EPA Methods 5035A and 8260C (mg/kg)										
				n-Butylbenzene	Ethylbenzene	4-Methyl-2-Pentanone (MiBK)	Isoproplybenzene	n-propylbenzene	Naphthalene	PCE	Toluene	1,2,4-TMB	1,3,5-TMB	m,p-Xylenes	o-Xylenes
K&S Borings															
B-3 - #3*	7	Native	01/09/19	**0.133** M-02	**0.0338**	0.626 U	**0.103**	**0.239**	**1.18**	**10.3**	**0.115**	**0.987**	**0.577**	**0.162**	**0.135**
Confirmation Soil Samples - Hydraulic Hoist Remedial Excavation															
C1	12	Unknown	03/08/19	0.0516 U	0.0258 U	0.0516 U	0.0516 U	0.0258 U	0.103 U	**1.66**	0.0516 U	0.0516 U	0.0516 U	0.0516 U	0.0258 U
C2	12	Unknown	03/08/19	0.0501 U	0.0251 U	0.0501 U	0.0501 U	0.0251 U	0.100 U	**0.845**	0.0501 U	0.0501 U	0.0501 U	0.0501 U	0.0251 U
C3	9	Unknown	03/08/19	0.0588 U	0.0294 U	0.588 U	0.0588 U	0.0294 U	0.118 U	**3.42**	0.0588 U	0.0588 U	0.0588 U	0.0588 U	0.0294 U
C4	9	Unknown	03/08/19	0.0542 U	0.0271 U	0.542 U	0.0542 U	0.0271 U	0.108 U	**0.0339**	0.0542 U	0.0542 U	0.0271 U	0.0542 U	0.0271 U
C5	9	Unknown	03/08/19	0.0495 U	0.0248 U	0.495 U	0.0495 U	0.0248 U	0.0991 U	0.0248 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0248 U
C6	9	Unknown	03/08/19	0.0512 U	0.0256 U	0.512 U	0.0512 U	0.0256 U	0.102 U	0.0256 U	0.0512 U	0.0512 U	0.0512 U	0.0512 U	0.0256 U
C7	10	Unknown	03/08/19	0.0618 U	0.0309 U	0.618 U	0.0618 U	0.0309 U	0.124 U	**0.175**	0.0618 U	0.0618 U	0.0618 U	0.0618 U	0.0309 U
C8	14	Unknown	03/08/19	0.0634 U	0.0317 U	0.634 U	0.0634 U	0.0317 U	0.127 U	**0.0563**	0.0634 U	0.0634 U	0.0634 U	0.0634 U	0.0317 U
GeoDesign Borings															
DP-1	11-12.5	Native	07/18/19	0.0304 U	0.0304 U	0.304 U	0.0152 U	0.0152 U	0.0608 U	0.0152 U	0.0304 U	0.0304 U	0.0304 U	0.0304 U	0.0304 U
DP-2	11-12.5	Native	07/18/19	0.0310 U	0.0155 U	0.310 U	0.0310 U	0.0155 U	0.0620 U	0.0155 U	0.0310 U	0.0310 U	0.0310 U	0.0310 U	0.0310 U
DP-2	21-22.5	Native	07/18/19	0.0289 U	0.0144 U	0.289 U	0.0289 U	0.0144 U	0.0578 U	**0.0150** J	0.0289 U	0.0289 U	0.0289 U	0.0289 U	0.0289 U
DP-2	25-26.5	Native	07/18/19	0.0374 U	0.0187 U	0.374 U	0.0374 U	0.0187 U	0.0749 U	0.0187 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0187 U
DP-3	10-11.5	Native	07/18/19	0.0283 U	0.0141 U	0.283 U	0.0283 U	0.0141 U	0.0565 U	0.0141 U	0.0283 U	0.0283 U	0.0283 U	0.0283 U	0.0283 U
DP-4	11.5-13	Native	07/19/19	0.0287 U	0.0144 U	0.287 U	0.0287 U	0.0144 U	0.0575 U	0.0144 U	0.0287 U	0.0287 U	0.0287 U	0.0287 U	0.0287 U
DP-5	10-11.5	Native	07/19/19	0.0312 U	0.0156 U	0.312 U	0.0312 U	0.0156 U	0.0623 U	0.0156 U	0.0312 U	0.0312 U	0.0312 U	0.0312 U	0.0312 U
DP-5	15-16.5	Native	07/19/19	0.0329 U	0.0164 U	0.329 U	0.0329 U	0.0164 U	0.0657 U	0.0164 U	0.0329 U	0.0329 U	0.0329 U	0.0329 U	0.0329 U
DP-6	12-13.5	Native	07/19/19	0.0276 U	0.0138 U	0.276 U	0.0276 U	0.0138 U	0.0553 U	0.0138 U	0.0276 U	0.0276 U	0.0276 U	0.0276	0.0276 U
DP-7	11.5-13	Native	07/19/19	0.0259 U	0.0129 U	0.259 U	0.0259 U	0.0129 U	0.0518 U	0.0129 U	0.0259 U	0.0259 U	0.0259 U	0.0259 U	0.0259 U
DP-8	11.5-13	Native	07/19/19	0.0301 U	0.0301 U	0.301 U	0.0301 U	0.0301 U	0.0602 U	0.0151 U	0.0301 U	0.0301 U	0.0301 U	0.0301 U	0.0301 U
DP-9	11-12.5	Native	07/19/19	0.0318 U	0.0318 U	0.318 U	0.0318 U	0.0318 U	0.0635 U	0.0159 U	0.0318 U	0.0318 U	0.0318 U	0.0318 U	0.0318 U
DP-10	6-7.5	Native	07/19/19	0.0324 U	0.0324 U	0.324 U	0.0324 U	0.0324 U	0.0648 U	0.0162 U	0.0324 U	0.0324 U	0.0324 U	0.0324 U	0.0324 U
DP-11	6-7.5	Fill	07/19/19	0.0326 U	0.0326 U	**0.831**	0.0326 U	0.0326 U	0.0652 U	**0.0978**	0.0326 U	0.0326 U	0.0326 U	0.0652 U	**0.0482**
DP-11	10-11.5	Native	07/19/19	0.0262 U	0.0131 U	0.262 U	0.0262 U	0.0131 U	0.105 U	0.0131 U	0.0262 U	0.0262 U	0.0262 U	0.0262 U	0.0131 U
DP-12	5-6.5	Fill	07/19/19	0.0283 U	**0.0153** J	**0.351** J	0.0283 U	0.0141 U	0.0565 U	**0.105**	0.0283 U	**0.0401** J	**0.0571**	**0.0492** J	**0.0922**
DP-12	10-11.5	Native	07/19/19	0.0299 U	0.0149 U	0.299 U	0.0299 U	0.0149 U	0.119 U	0.0149 U	0.0299 U	0.0299 U	0.0299 U	0.0299	0.0149 U
DP-13	5-6.5	Fill	07/19/19	0.0390 U	**0.0195** J	0.390 U	0.0390 U	0.0390 U	0.0780 U	**0.141**	0.0390 U	**0.0585** J	**0.0405** J	**0.0468** J	**0.0678**
DP-13	10-11.5	Native	07/19/19	0.0338 U	0.0169 U	0.338 U	0.0338 U	0.0169 U	0.135 U	0.0169 U	0.0338 U	0.0338 U	0.0338 U	0.0338 U	0.0169 U
DP-14	0.5-1.5	Fill	07/16/20	0.0290 U	0.0145 U	0.290 U	0.0290 U	0.0145 U	0.0581 U	0.0145 U	0.0290 U	0.0290 U	0.0290 U	0.0290 U	0.0145 U
DP-14	1.5-2.5	Native	07/16/20	0.0293 U	0.0146 U	0.293 U	0.0293 U	0.0146 U	0.0586 U	0.0146 U	0.0293 U	0.0293 U	0.0293 U	0.0293 U	0.0146 U
DP-15	1-2	Fill	07/16/20	0.0294 U	0.0147 U	0.294 U	0.0294 U	0.0147 U	0.0588 U	0.0147 U	0.0294 U	0.0294 U	0.0294 U	0.0294 U	0.0147 U
DP-15	2.5-3.5	Native	07/16/20	0.0250 U	0.0125 U	0.250 U	0.0250 U	0.0125 U	0.0500 U	0.0125 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0125 U
DP-16	6-7	Native	07/16/20	0.0296 U	0.0148 U	0.296 U	0.0296 U	0.0148 U	0.0591 U	0.0148 U	0.0296 U	0.0296 U	0.0296 U	0.0296 U	0.0148 U
DP-17	0.5-1.5	Fill	07/16/20	0.0320 U	0.0160 U	0.320 U	0.0320 U	0.0160 U	0.0640 U	0.0160 U	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.0160 U
DP-17	2-3	Native	07/16/20	0.0313 U	0.0157 U	0.313 U	0.0313 U	0.0157 U	0.0626 U	0.0157 U	0.0313 U	0.0313 U	0.0313 U	0.0313 U	0.0157 U
DP-18	2-3	Fill	07/16/20	0.0325 U	0.0163 U	0.325 U	0.0325 U	0.0163 U	0.0651 U	0.0163 U	0.0325 U	0.0325 U	0.0325 U	0.0325 U	0.0163 U
DP-19	0.5-1.5	Fill	07/16/20	0.0318 U	0.0159 U	0.318 U	0.0318 U	0.0159 U	0.0637 U	0.0159 U	0.0318 U	0.0318 U	0.0318 U	0.0318 U	0.0159 U
EPA Portland Harbor CULs[2]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DEQ JSCS SLVs[3]				NE	NE	NE	NE	NE	0.561	0.5	NE	9.2	NE	NE	NE

TABLE A-3
Summary of Soil Sample Chemical Analytical Results
VOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Notes:
1. Only detected VOCs are listed.
2. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
3. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005

J: Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-02: Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regualtory screening level.
* Soil represented by this samples was subsequently removed.

TABLE A-4
Summary of Soil Sample Chemical Analytical Results
SVOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/ Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	SVOCs EPA Method 8270D-SIM (mg/kg) Anthracene	Acenaphthene	Acenaphthylene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phtalate	Benzyl Alcohol	BEHP	Carbzole	Chrysene
Confirmation Soil Samples - Hydraulic Hoist Remedial Excavation																
C1	12	Unknown	03/08/19	0.0102 U	0.0102 U	0.0102 U	0.0102 U	0.0102 U	0.0102 U	**0.0804**	0.0102 U	--	--	--	--	0.0102 U
C2	12	Unknown	03/08/19	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	**0.0518**	0.0105 U	--	--	--	--	0.0105 U
C3	9	Unknown	03/08/19	0.0519 U	0.0519 U	0.0519 U	0.0519 U	0.0519 U	0.0519 U	**0.374**	0.0519 U	--	--	--	--	0.0519 U
C7	10	Unknown	03/08/19	**0.011**	0.0107 U	**0.0147**	**0.0368** M-05	**0.0761**	**0.0912** M-05	**0.0785**	**0.0252** M-05	--	--	--	--	**0.0476**
C8	14	Unknown	03/08/19	0.0510 U	0.0510 U	0.0510 U	0.0510 U	0.0510 U	0.0510 U	**0.0781**	0.0510 U	--	--	--	--	0.0510 U
GeoDesign Borings																
DP-1	11-12.5	Native	07/18/19	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	--	--	--	--	0.00549 U
DP-2	11-12.5	Native	07/18/19	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	--	--	--	--	0.00539 U
DP-2	21-22.5	Native	07/18/19	0.0146 U	0.0146 U	0.0146 U	0.0146 U	*0.0220 U*	0.0220 U	0.0146 U	0.0220 U	**0.250** J	**1.07** Q-42	**0.250** J	0.0220 U	0.0146 U
DP-2	25-26.5	Native	07/18/19	0.00177 U	0.00177 U	0.00177 U	0.00177 U	0.00266 U	0.00266 U	0.00177 U	0.00266 U	0.0266 U	0.00887 U	*0.0266 U*	0.00266 U	0.00177 U
DP-3	10-11.5	Native	07/18/19	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	--	--	--	--	0.00538 U
DP-5	10-11.5	Native	07/19/19	0.00533 U	0.00533 U	0.00533 U	**0.00841** J	**0.00558** J	**0.00583** J	0.00533 U	0.00533 U	--	--	--	--	**0.00636** J
DP-10	6-7.5	Native	07/19/19	**0.00541**	0.00145 U	**0.00810**	**0.0366**	**0.0695**	**0.0779** Q-42	**0.0701** Q-42	**0.0261** M-05	0.0218 U	0.00727 U	*0.0218 U*	0.00218 U	**0.0576** Q-42
DP-11	6-7.5	Fill	07/19/19	**0.290**	0.0578 U	**0.244**	**1.65**	**2.87**	**4.26**	**2.32**	**1.35** M-05	0.868 U	0.290 U	*0.868 U*	**0.0887** J	**2.30**
DP-11	10-11.5	Native	07/19/19	0.00141 U	0.00141 U	0.00141 U	**0.00291**	**0.00284** J	**0.00301** J	**0.00355**	0.00212 U	0.02120 U	0.00707 U	*0.0212 U*	0.00212 U	**0.00279** J
DP-12	5-6.5	Fill	07/19/19	**0.366** J	0.348 U	*0.348 U*	**2.81**	**5.59**	**8.12**	**6.99**	**2.63**	5.23 U	1.74 U	*5.23 U*	0.523 U	**3.55**
DP-12	10-11.5	Native	07/19/19	**0.00447**	**0.00249**	**0.00359**	**0.0155**	**0.0124**	**0.0130** M-05	**0.00886**	**0.00477** M-05	0.0207 U	0.00689 U	*0.0207 U*	0.00207	**0.0167**
DP-13	5-6.5	Fill	07/19/19	**0.324** J	0.173 U	**0.355**	**2.44**	**6.23**	**8.23** M-05	**6.75**	**2.70**	2.61 U	0.869 U	*2.61 U*	0.261 U	**3.04**
DP-13	10-11.5	Native	07/19/19	0.00140 U	0.00140 U	0.00140 U	**0.00362**	**0.00264** J	**0.00275** J	**0.00205** J	0.00210 J	0.0210 U	0.00700 U	*0.0210 U*	0.00210 U	**0.00345**
DP-14	0.5-1.5	Fill	07/16/20	**0.106**	0.0280 U	**0.123**	**0.624**	**0.951**	**1.39**	**0.976**	**0.390** M-05	--	--	--	--	**0.778**
DP-14	1.5-2.5	Native	07/16/20	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	--	--	--	--	0.00557 U
DP-15	1-2	Fill	07/16/20	**0.397**	0.110 U	**0.719**	**1.54**	**2.86**	**3.86**	**3.40**	**0.888** M-05	--	--	--	--	**2.16**
DP-15	2.5-3.5	Native	07/16/20	0.00499 U	0.00499 U	0.00499 U	**0.00789** J	**0.00635** J	**0.00628** J	**0.00519** J	0.00499 U	--	--	--	--	**0.00617** J
DP-16	6-7	Native	07/16/20	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	--	--	--	--	0.00520 U
DP-17	0.5-1.5	Fill	07/16/20	**0.00827** J	0.00597 U	**0.00895** J	**0.0212**	**0.0340**	**0.0432**	**0.0437**	**0.0163** M-05	--	--	--	--	**0.0339**
DP-17	2-3	Native	07/16/20	0.00623 U	0.00623 U	0.00623 U	**0.00757** J	0.00623 U	0.00623 U	0.00623 U	0.00623 U	--	--	--	--	0.00623 U
DP-18	2-3	Fill	07/16/20	0.00613 U	0.00613 U	0.00613 U	0.00613 U	0.00613 U	0.00613 U	0.00613 U	0.00613 U	--	--	--	--	0.00613 U
DP-19	0.5-1.5	Fill	07/16/20	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	--	--	--	--	0.00579 U
EPA Portland Harbor CULs[1]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.135	NE	NE
DEQ JSCS SLVs[2]				0.845	0.3	0.2	1.05	1.45	NE	0.3	13	NE	NE	0.330	1.6	1.29

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
J: Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-05: Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
NC: not calculated
NE: not established
Q-42: Matrix spike and/or duplicate analysis was performed on this sample. Percent recovery or RPD for this analyte is outside the laboratory control limits.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regualtory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.
--: not analyzed

TABLE A-4
Summary of Soil Sample Chemical Analytical Results
SVOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/ Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	SVOCs EPA Method 8270D-SIM (mg/kg)												cPAHs (mg/kg)	Total PAHs (mg/kg)
				Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	PCP	Phenanthrene	Pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Phenol		
Confirmation Soil Samples - Hydraulic Hoist Remedial Excavation																	
C1	12	Unknown	03/08/19	0.0102 U	--	0.0102 U	0.0102 U	0.0102 U	0.0102 U	--	0.0102 U	0.0102 U	--	--	--	**0.0234**	**0.2334**
C2	12	Unknown	03/08/19	0.0105 U	--	0.0105 U	0.0105 U	0.0105 U	0.0105 U	--	0.0105 U	0.0105 U	--	--	--	**0.0239**	**0.2093**
C3	9	Unknown	03/08/19	0.0519 U	--	0.0519 U	0.0519 U	0.0519 U	0.0519 U	--	0.0519 U	0.0519 U	--	--	--	**0.119**	**1.1525**
C7	10	Unknown	03/08/19	0.0107 U	--	**0.0569**	0.0107 U	**0.0716**	0.0107 U	--	**0.0166**	**0.0893**	--	--	--	**0.104**	**0.6583**
C8	14	Unknown	03/08/19	0.0510 U	-- U	0.0510 U	0.0510 U	0.0510 U	0.0510 U	--	0.0510 U	**0.0586**	--	--	--	**0.1154**	**0.8507**
GeoDesign Borings																	
DP-1	11-12.5	Native	07/18/19	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	--	0.00549 U	0.00549 U	0.00549 U	0.00549 U	--	NC	NC
DP-2	11-12.5	Native	07/18/19	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	0.00539 U	--	0.00539 U	0.00539 U	0.00539 U	0.00539 U	--	NC	NC
DP-2	21-22.5	Native	07/18/19	0.0146 U	0.0146 U	0.0146	0.0146 U	0.0146 U	0.0294 U	0.146 U	0.0146 U	**0.0169** J	0.0294 U	0.0294 U	**0.0302** J	**0.041**	**0.346**
DP-2	25-26.5	Native	07/18/19	0.00177 U	0.00177 U	0.00177 U	0.00177 U	0.00177 U	0.00355 U	0.0177 U	0.00177 U	0.00177 U	0.00355 U	0.00355 U	0.00355 U	NC	NC
DP-3	10-11.5	Native	07/18/19	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	0.00538 U	--	0.00538 U	0.00538 U	0.00538 U	0.00538 U	--	NC	NC
DP-5	10-11.5	Native	07/19/19	0.00533 U	0.00533 U	**0.00890** J	0.00533 U	0.00533 U	0.00533 U	--	0.00533 U	**0.0104** J	0.00533 U	0.00533 U	--	**0.0127**	**0.1148**
DP-10	6-7.5	Native	07/19/19	**0.00669**	0.00145 U	**0.117** Q-42	0.00145 U	**0.0557** Q-42	0.00291 U	0.0145 U	**0.0471**	**0.164** Q-42	0.00291 U	0.00291 U	0.00291 U	**0.094**	**0.755**
DP-11	6-7.5	Fill	07/19/19	**0.613**	0.0578 U	**2.86**	0.0578 U	**2.36**	0.116 U	**0.598** J	**0.967**	**3.15**	0.116 U	0.116 U	**0.898**	**4.35**	**25.8**
DP-11	10-11.5	Native	07/19/19	0.00141 U	0.00141 U	**0.00611**	0.00141 U	**0.00287**	0.00283 U	0.0141 U	**0.00407**	**0.00766**	0.00283 U	0.00283 U	0.00283 U	**0.00447**	**0.05488**
DP-12	5-6.5	Fill	07/19/19	**1.52**	0.348 U	**3.05**	0.348 U	**6.32**	*0.698 U*	*3.48 U*	**0.650** J	**4.29**	0.698 U	*0.698 U*	*0.698 U*	**8.93**	**49.4**
DP-12	10-11.5	Native	07/19/19	**0.00167** J	0.00137 U	**0.0274**	**0.00194** J	**0.00859**	0.00276 U	0.0137 U	**0.0200**	**0.0375**	0.00276 U	0.00276 U	0.00276 U	**0.0179**	**0.1885**
DP-13	5-6.5	Fill	07/19/19	**1.52**	0.173 U	**2.49**	0.173 U	**6.33**	0.348 U	**2.01** J	**0.695**	**4.02**	0.348 U	*0.348 U*	**0.767** J	**9.55**	**46.7**
DP-13	10-11.5	Native	07/19/19	0.00140 U	0.00140 U	**0.00467**	0.00140 U	**0.00200** J	0.00280 U	0.0140 U	**0.00254** J	**0.00640**	0.00280 U	0.00280 U	0.00280 U	**0.00411**	**0.04902**
DP-14	0.5-1.5	Fill	07/16/20	**0.225**	0.0280 U	**0.673**	0.0280 U	**0.938**	0.0280 U	--	**0.172**	**0.815**	0.0280 U	0.0280 U	--	**1.32**	**8.33**
DP-14	1.5-2.5	Native	07/16/20	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	0.00557 U	--	0.00557 U	0.00557 U	0.00557 U	0.00557 U	--	NC	NC
DP-15	1-2	Fill	07/16/20	**0.793**	0.110 U	**1.40**	0.110 U	**3.13**	**0.114** J	--	**0.426**	**2.31**	0.110 U	0.110 U	--	**3.99**	**24.5**
DP-15	2.5-3.5	Native	07/16/20	0.00499 U	0.00499 U	**0.00827** J	0.00499 U	**0.00510** J	0.00499 U	--	0.00499 U	**0.0111**	0.00499 U	0.00499 U	--	**0.0106**	**0.1112**
DP-16	6-7	Native	07/16/20	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	0.00520 U	--	0.00520 U	0.00520 U	0.00520 U	0.00520 U	--	NC	NC
DP-17	0.5-1.5	Fill	07/16/20	0.00597 U	0.00597 U	**0.0629**	0.00597 U	**0.0378**	**0.0318**	--	**0.0279**	**0.0805**	0.00597 U	**0.00665** J	--	**0.0459**	**0.4869**
DP-17	2-3	Native	07/16/20	0.00623 U	0.00623 U	**0.00777** J	0.00623 U	0.00623 U	0.00623 U	--	**0.00624** J	**0.00997** J	0.00623 U	0.00623 U	--	**0.01114**	**0.12500**
DP-18	2-3	Fill	07/16/20	0.00613 U	0.00613 U	0.00613 U	0.00613 U	0.00613 U	**0.00797** J	--	0.00613 U	0.00613 U	0.00613 U	0.00613 U	--	NC	NC
DP-19	0.5-1.5	Fill	07/16/20	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	0.00579 U	--	0.00579 U	0.00579 U	0.00579 U	0.00579 U	--	NC	NC
				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1.076	23
				1.3	NE	2.23	0.536	0.1	0.561	0.250	1.17	1.52	NE	0.2	0.050	NE	NE

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
J: Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-05: Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
NC: not calculated
NE: not established
Q-42: Matrix spike and/or duplicate analysis was performed on this sample. Percent recovery or RPD for this analyte is outside the laboratory control limits.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regualtory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.
--: not analyzed

TABLE A-5
Summary of Soil Sample Chemical Analytical Results
PCBs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/ Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	PCBs EPA Method 8082 (mg/kg)												Total PCBs (mg/kg)
				PCB 1016		PCB 1221		PCB 1232		PCB 1242		PCB 1248		PCB 1254		PCB 1260		0
K&S Borings																		
B-3 - #3*	7	Native	01/09/19	0.0203	U	0.0203	U	0.0203	U	0.0203	U	0.0203	U	0.0203	U	**0.109**		0.0
Confirmation Soil Samples - Hydraulic Hoist Remedial Excavation																		
C1	12	Unknown	03/08/19	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0
C2	12	Unknown	03/08/19	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0.0103	U	0
C3	9	Unknown	03/08/19	0.0109	U	0.0109	U	0.0109	U	0.0109	U	0.0109	U	0.0109	U	**0.0339**	P-09	0.0339
C7	10	Unknown	03/08/19	0.0107	U	0.0107	U	0.0107	U	0.0107	U	0.0107	U	**0.0501**	P-10	**0.0229**	P-10	0.0730
C8	14	Unknown	03/08/19	0.0098	U	0.0098	U	0.0098	U	0.0098	U	0.0098	U	**0.0166**	P-10	0.0098	U	0.0166
GeoDesign Borings																		
DP-1	11-12.5	Native	07/18/19	0.00541	U	0.00541	U	0.00541	U	0.00541	U	0.00541	U	0.00541	U	0.00541	U	0
DP-2	11-12.5	Native	07/18/19	0.00546	U	0.00546	U	0.00546	U	0.00546	U	0.00546	U	0.00546	U	0.00546	U	0
DP-2	21-22.5	Native	07/18/19	0.00546	U	0.00546	U	0.00546	U	0.00546	U	0.00546	U	**0.00942**	J	0.00546	U	0.00942
DP-3	10-11.5	Native	07/18/19	0.00522	U	0.00522	U	0.00522	U	0.00522	U	0.00522	U	0.00522	U	0.00522	U	0
DP-4	11.5-13	Native	07/19/19	0.00544	U	0.00544	U	0.00544	U	0.00544	U	0.00544	U	0.00544	U	0.00544	U	0
DP-5	10-11.5	Native	07/19/19	0.00523	U	0.00523	U	0.00523	U	0.00523	U	0.00523	U	0.00523	U	0.00523	U	0
DP-6	12-13.5	Native	07/19/19	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0
DP-7	11.5-13	Native	07/19/19	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0.00535	U	0
DP-8	11.5-13	Native	07/19/19	0.00524	U	0.00524	U	0.00524	U	0.00524	U	0.00524	U	0.00524	U	0.00524	U	0
DP-9	11-12.5	Native	07/19/19	0.00537	U	0.00537	U	0.00537	U	0.00537	U	0.00537	U	0.00537	U	0.00537	U	0
DP-10	6-7.5	Native	07/19/19	0.00567	U	0.00567	U	0.00567	U	0.00567	U	0.00567	U	0.00567	U	0.00567	U	0
DP-11	6-7.5	Fill	07/19/19	0.0549	U	0.0549	U	0.0549	U	**0.245**	P-10	0.0549	U	**1.73**	P-10	**0.505**	P-10	**2.48**
DP-11	10-11.5	Native	07/19/19	0.00204	U	0.00204	U	0.00204	U	0.00204	U	0.00204	U	0.00204	U	0.00204	U	0
DP-12	5-6.5	Fill	07/19/19	0.270	U	0.270	U	0.270	U	**2.27**	P-10	0.270	U	**9.32**	P-10	**1.69**	P-10	**13.28**
DP-12	10-11.5	Native	07/19/19	0.00203	U	0.00203	U	0.00203	U	0.00203	U	0.00203	U	0.00203	U	0.00203	U	0
DP-13	5-6.5	Fill	07/19/19	0.324	U	0.324	U	0.324	U	**1.06**	P-10	0.324	U	**5.05**	P-10	**0.978**	P-10	**7.09**
DP-13	10-11.5	Native	07/19/19	0.00217	U	0.00217	U	0.00217	U	0.00217	U	0.00217	U	0.00217	U	0.00217	U	0
DP-14	0.5-1.5	Fill	07/16/20	0.0424	U	0.0424	U	0.0424	U	0.0424	U	0.0424	U	**0.830**	P-10,Q-39, Q-42	**0.261**	P-10,Q-39, Q-42	**1.09**
DP-14	1.5-2.5	Native	07/16/20	0.00215	U	0.00215	U	0.00215	U	0.00215	U	0.00215	U	0.00215	U	0.00215	U	0
DP-15	1-2	Fill	07/16/20	0.209	U	0.209	U	0.209	U	0.209	U	**11.5**	P-10	0.209	U	**0.938**	P-10	**12.4**
DP-15	2.5-3.5	Native	07/16/20	0.00208	U	0.00208	U	0.00208	U	0.00208	U	0.00208	U	0.00208	U	0.00208	U	0
DP-16	6-7	Native	07/16/20	0.00207	U	0.00207	U	0.00207	U	0.00207	U	0.00207	U	0.00207	U	0.00207	U	0
DP-17	0.5-1.5	Fill	07/16/20	0.00230	U	0.00230	U	0.00230	U	0.00230	U	0.00230	U	**0.0287**		0.00230	U	0.0287
DP-17	2-3	Native	07/16/20	0.00242	U	0.00242	U	0.00242	U	0.00242	U	0.00242	U	0.00242	U	0.00242	U	0
DP-18	2-3	Fill	07/16/20	0.00246	U	0.00246	U	0.00246	U	0.00246	U	0.00246	U	0.00246	U	0.00246	U	0
DP-19	0.5-1.5	Fill	07/16/20	0.00230	U	0.00230	U	0.00230	U	0.00230	U	0.00230	U	0.00230	U	0.00230	U	0
EPA Portland Harbor CULs[1]				NE		NE		NE		NE		NE		NE		NE		0.009
DEQ JSCS SLVs[2]				0.530		NE		NE		NE		1.5		0.300		0.200		0.00039

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
NE: not established
P-10: Result estimated due to the presence of multiple PCB Arochlors and/or matrix interference.
Q-39: Results for sample duplicate are significantly higher than the sample results. The duplicate results in QC section of the report.
Q-42: Matrix spike and/or duplicate analysis was performed on this sample. Percent recovery or RPD for this analyte is outside the laboratory control limits.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.
* Soil represented by this samples was subsequently removed.

TABLE A-6
Summary of Soil Sample Chemical Analytical Results
Total Metals
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Boring/ Sample I.D.	Sample Depth (feet BGS)	Fill or Native	Sample Date	Total Metals EPA Method 6020A (mg/kg)													
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
DP-1	11-12.5	Native	07/18/19	--	2.48	102	--	0.359	11.0	--	2.50	0.0452 U	--	0.565 U	0.113 U	--	--
DP-2	11-12.5	Native	07/18/19	--	2.56	61.4	--	0.357	9.23	--	2.17	0.0441 U	--	0.552 U	0.110 U	--	--
DP-3	10-11.5	Native	07/18/19	--	2.20	61.4	--	0.297	8.36	--	2.09	0.0639 J	--	0.559 U	0.112 U	--	--
DP-4	11.5-13	Native	07/19/19	--	2.55	59.9	--	0.381	9.53	--	2.41	0.0435 U	--	0.544 U	0.109 U	--	--
DP-5	10-11.5	Native	07/19/19	--	2.39	67.4	--	0.383	10.4	--	2.62	0.0465 U	--	0.581 U	0.116 U	--	--
DP-10	6-7.5	Native	07/19/19	0.619 U	2.12	75.7	0.272	0.362	11.5	14.1	3.42	0.0495 U	17.0	0.619 U	0.124 U	0.124 U	39.3
DP-11	6-7.5	Fill	07/19/19	6.74	51.3	--	0.111 U	1.05	201	2,410	480	14.9	10.3	0.554 U	0.315	0.111 U	1,650
DP-11	10-11.5	Native	07/19/19	0.576 U	1.84	--	0.280	0.115 U	6.49	10.7	1.96	0.0461 U, H-06	12.0	0.576 U	0.115 U	0.115 U	26.3
DP-12	5-6.5	Fill	07/19/19	102	172	--	0.109 U	1.81	212	4,240	1,110	36.0	24.6	0.546 U	0.215 J	0.109 U	2,790
DP-12	10-11.5	Native	07/19/19	0.559 U	2.31	--	0.262	0.112 U	9.15	12.2	2.41	0.0447 U, H-06	15.6	0.559 U	0.112 U	0.112 U	33.3
DP-13	5-6.5	Fill	07/19/19	2.26	55.1	--	0.243 J	0.902	114	2,320	475	19.7	23.0	0.643 U	0.136 J	0.129 U	936
DP-13	10-11.5	Native	07/19/19	0.579 U	1.87	--	0.233	0.116 U	7.70	11.1	2.11	0.0463 U, H-06	13.3	0.579 U	0.116 U	0.12 U	29.3
DP-14	0.5-1.5	Fill	07/16/20	1.76	21.0	117	--	0.985	50.8	878	194	4.94	--	0.613 U	0.133	--	609
DP-14	1.5-2.5	Native	07/16/20	0.588 U	1.91	52.5	--	0.118 U	10.9	11.5	2.17	0.0470 U	--	0.588 U	0.118 U	--	33.3
DP-15	1-2	Fill	07/16/20	7.02	123	120	--	1.06	140	4,420	1,180	26.1	--	0.582 U	0.246	--	1,460
DP-15	2.5-3.5	Native	07/16/20	0.540 U	2.68	61.4	--	0.108 U	11.7	15.0	2.85	0.0561	--	0.540 U	0.108 U	--	39.5
DP-16	6-7	Native	07/16/20	0.527 U	2.63	77.9	--	0.105 U	13.0	14.8	2.52	0.0444 J	--	0.527 U	0.105 U	--	42.1
DP-17	0.5-1.5	Fill	07/16/20	0.618 U	3.37	144	--	0.124 U	25.4	44.1	10.7	0.158 B-02	--	0.618 U	0.124 U	--	65.5
DP-17	2-3	Native	07/16/20	0.627 U	2.99	150	--	0.125 U	23.1	23.8	4.21	0.0650	--	0.627 U	0.125 U	--	53.6
DP-18	2-3	Fill	07/16/20	0.666 U	4.19	151	--	0.133 U	21.9	21.9	4.65	0.0615	--	0.666 U	0.133 U	--	55.9
DP-19	0.5-1.5	Fill	07/16/20	0.592 U	3.09	87.8	--	0.118 U	17.2	20.2	3.48	0.0529 J	--	0.592 U	0.118 U	--	46.3
EPA Portland Harbor CULs[1]				NE	3	NE	NE	0.51	NE	359	196	0.085	NE	NE	NE	NE	459
DEQ JSCS SLVs[2]				64	7	NE	NE	1	111	149	17	0.07	48.6	2	5	NE	459
Background Concentrations				0.56	8.8	790	2	0.63	76	34	28	0.23	47	0.71	0.82	5.2	180

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
B-02: Analyte detected in an asscoiated blank at a level between one-half the MRL and the MRL.
H-06: This sample was analyzed outside the recommended holding time.
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.
--: not analyzed

TABLE A-7
Summary of Groundwater Sample Chemical Analytical Results
Petroleum Hydrocarbons
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	Gasoline-Range Hydrocarbons Method NWTPH-Gx (µg/L)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (µg/L)	
				Diesel-Range	Oil-Range
DP-1W	07/18/19	20 - 30	50.0 U	94.3 U	189 U
DP-2W	07/18/19	20 - 30	50.0 U	94.3 U	189 U
DP-3W	07/18/19	25 - 35	**58.8**	94.3 U	189 U
DP-14W	07/16/20	24 - 34	50.0 U	96.2 U	192 U
DP-15W	07/16/20	20 - 35	50.0 U	96.2 U	192 U
DP-16W	07/16/20	20 - 30	50.0 U	96.2 U	192 U
DP-16W-DUP	07/16/20	20 - 30	50.0 U	98.0 U	196 U
DP-17W	07/16/20	20 - 35	50.0 U	96.2 U	192 U
DP-18W	07/16/20	19.5 - 34.5	50.0 U	96.2 U	192 U
DP-19W	07/16/20	20 - 35	50.0 U	96.2 U	192 U
EPA Portland Harbor CULs[1]			NE	NE	NE
DEQ JSCS SLVs[2]			NE	NE	NE

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.

TABLE A-8
Summary Groundwater Sample Chemical Analytical Results
VOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	VOCs[1] EPA Methods 8260C and 8260C-SIM (µg/L)					
			cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	MTBE	PCE	TCE
DP-1W	07/18/19	20 - 30	0.0100 U	0.0100 U	0.0500 U	0.0100 U	**0.601**	0.0100 U
DP-2W	07/18/19	20 - 30	**1.49**	**0.0181** J	0.0500 U	0.0100 U	**10.5**	**1.86**
DP-3W	07/18/19	25 - 35	**0.651**	0.0100 U	0.0500 U	0.0100 U	**16.6**	**0.909**
DP-14W	07/16/20	24 - 34	**3.18**	**0.0104** J	**0.0818** J	0.0100 U	**1.71**	**2.06**
DP-15W	07/16/20	20 - 35	0.0200 U	0.0100 U	**0.0545** J	0.0100 U	**0.0465**	0.0200 U
DP-16W	07/16/20	20 - 30	0.0100 U	0.0100 U	0.0500 U	0.0100 U	0.0100 U	0.0100 U
DP-16W-DUP	07/16/20	20 - 30	0.0100 U	0.0100 U	0.0500 U	0.0100 U	0.0100 U	0.0100 U
DP-17W	07/16/20	20 - 35	0.0100 U	0.0100 U	0.0500 U	0.0100 U	0.0100 U	0.0100 U
DP-18W	07/16/20	19.5 - 34.5	0.0100 U	0.0100 U	0.0500 U	0.0100 U	0.0100 U	0.0100 U
DP-19W	07/16/20	20 - 35	0.0100 U	0.0100 U	0.0500 U	**0.0215**	0.0100 U	0.0100 U
EPA Portland Harbor CULs[2]			9.9	NE	7.3	NE	0.24	0.6
DEQ JSCS SLVs[3]			61.0	110	7.3	NE	0.12	0.17

Notes:
1. Only VOCs detected are shown.
2. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
3. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005

NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.

TABLE A-9
Summary of Groundwater Sample Chemical Analytical Results
SVOCs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	SVOCs EPA Method 8270D-SIM (µg/L)																										
			Acenaphthene	Acenaphthylene	Anthracene	Benzyl Alcohol	Di-n-butylphtalate	Bis(2-ethylhexyl)phthalate	Benzoic Acid	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Carbazole	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	PCP	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Phenol	Pyrene
DP-1W	07/18/19	20 - 30	0.00935 U	0.00935 U	0.00935 U	**0.524**	0.187 U	0.187 U	**2.08**	*0.00935 U*	*0.0140 U*	*0.0140 U*	*0.0140 U*	0.00935 U	0.0140 U	*0.00935 U*	*0.00935 U*	0.00935 U	*0.0935 U*	0.00935 U	0.00935 U	*0.00935 U*	0.0187 U	0.0187 U	0.0187 U	**0.00976** J	**0.207** J	0.00935 U
DP-2W	07/18/19	20 - 30	0.0374 U	0.0374 U	0.0374 U	**9.54**	0.748 U	0.748 U	4.67 U	*0.0374 U*	*0.0561 U*	*0.0561 U*	*0.0561 U*	0.0374 U	0.0561 U	*0.0374 U*	*0.0374 U*	0.0374 U	*0.374 U*	0.0374 U	0.0374 U	*0.0374 U*	0.0748 U	0.0748 U	0.075 U	0.0374 U	0.748 U	0.0374 U
DP-3W	07/18/19	25 - 35	0.00943 U	0.00943 U	0.00943 U	0.0943 U	0.189 U	0.189 U	1.18 U	*0.00943 U*	*0.0142 U*	*0.0142 U*	*0.0142 U*	0.00943 U	0.0142 U	*0.00943 U*	*0.00943 U*	0.00943 U	*0.0943 U*	0.00943 U	0.00943 U	*0.00943 U*	0.0189 U	0.0189 U	0.0189 U	**0.0154** J	0.189 U	0.00943 U
DP-14W	07/16/20	24 - 34	0.00935 U	0.00935 U	0.00935 U	0.094 U	**0.245** J	0.187 U	1.17 U	*0.00935 U*	*0.0140 U*	*0.0140 U*	*0.0140 U*	0.00935 U	0.0140 U	*0.00935 U*	*0.00935 U*	0.00935 U	*0.0935 U*	0.00935 U	**0.0125** J	*0.00935 U*	0.0187 U	0.0187 U	**0.0226** J	**0.0247**	0.187 U	**0.00936** J
DP-15W	07/16/20	20 - 35	0.00943 U	0.00943 U	0.00943 U	0.0943 U	0.189 U	0.189 U	1.18 U	*0.00943 U*	*0.0142 U*	*0.0142 U*	*0.0142 U*	0.00943 U	0.0142 U	*0.00943 U*	*0.00943 U*	0.00943 U	*0.0943 U*	0.00943 U	0.00943 U	*0.00943 U*	0.0189 U	0.0189 U	0.0189 U	**0.00962** J	0.189 U	0.00943 U
DP-16W	07/16/20	20 - 30	0.00952 U	0.00952 U	0.00952 U	0.0952 U	0.190 U	0.190 U	1.19 U	0.00952 U	*0.0143 U*	*0.0143 U*	*0.0143 U*	0.00952 U	0.0143 U	*0.00952 U*	0.00952 U	0.00952 U	*0.0952 U*	0.00952 U	0.00952 U	*0.00952 U*	0.0190 U	0.0190 U	0.0190 U	0.00952 U	0.190 U	0.00952 U
DP-16W-DUP	07/16/20	20 - 30	0.00962 U	0.00962 U	0.00962 U	0.0962 U	0.192 U	0.192 U	1.20 U	0.00962 U	*0.0144 U*	*0.0144 U*	*0.0144 U*	0.00962 U	0.0144 U	*0.00962 U*	0.00962 U	**0.0110** J	*0.0962 U*	0.00962 U	0.0192 U	*0.00962 U*	**0.0282** J	**0.0379** J	0.0192 U	**0.0147** J	0.192 U	**0.0175** J
DP-17W	07/16/20	20 - 35	0.00943 U	0.00943 U	0.00943 U	0.0943 U	0.189 U	0.189 U	1.18 U	0.00943 U	*0.0142 U*	*0.0142 U*	*0.0142 U*	0.00943 U	0.0142 U	*0.00943 U*	0.00943 U	0.00943 U	*0.0943 U*	0.00943 U	0.00943 U	*0.00943 U*	0.0189 U	0.0189 U	0.0189 U	0.0094 U	0.189 U	0.00943 U
DP-18W	07/16/20	19.5 - 34.5	0.00943 U	0.00943 U	0.00943 U	0.0943 U	0.189 U	0.189 U	1.18 U	0.00943 U	*0.0142 U*	*0.0142 U*	*0.0142 U*	0.00943 U	0.0142 U	*0.00943 U*	0.00943 U	0.00943 U	*0.0943 U*	0.00943 U	0.00943 U	*0.00943 U*	0.0189 U	0.0189 U	0.0189 U	**0.0106** J	0.189 U	0.00943 U
DP-19W	07/16/20	20 - 35	**0.0124** J	0.00943 U	**0.0239**	0.0943 U	0.189 U	0.189 U	1.18 U	*0.00943 U*	*0.0142 U*	*0.0142 U*	*0.0142 U*	0.00943 U	**0.0194** J	*0.00943 U*	*0.00943 U*	**0.00971** J	*0.0943 U*	**0.0488**	**0.0124**	*0.00943 U*	0.0189 U	0.0189 U	0.0189 U	**0.107**	0.189 U	**0.0499**
EPA Portland Harbor CULs[1]			23	NE	0.73	NE	NE	NE	NE	0.0012	0.00012	0.0012	0.0013	NE	NE	0.00130	0.00012	NE	0.03	NE	NE	0.0012	NE	NE	NE	NE	NE	NE
DEQ JSCS SLVs[2]			0.2	0.2	0.2	8.6	3.0	2.2	42	0.018	0.018	0.018	0.018	0.2	3.4	0.018	0.018	3.7	0.56	0.2	0.2	0.018	2.1	0.2	0.2	0.2	2,560	0.2

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
J: Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.

TABLE A-10
Summary of Groundwater Sample Chemical Analytical Results
PCBs
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	PCBs EPA Method 8082 (µg/L)							Total PCBs (µg/L)
			PCB 1016	PCB 1221	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	0
DP-1W	07/18/19	20 - 30	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0
DP-2W	07/18/19	20 - 30	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0
DP-3W	07/18/19	25 - 35	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0
DP-14W	07/16/20	24 - 34	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0
DP-15W	07/16/20	20 - 35	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0.0194 U	0
DP-17W	07/16/20	20 - 35	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0
EPA Portland Harbor CULs[1]			NE	NE	NE	NE	NE	NE	NE	0.0000064
DEQ JSCS SLVs[2]			0.96	0.034	0.034	0.034	0.034	0.034	0.034	0.0000064

Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
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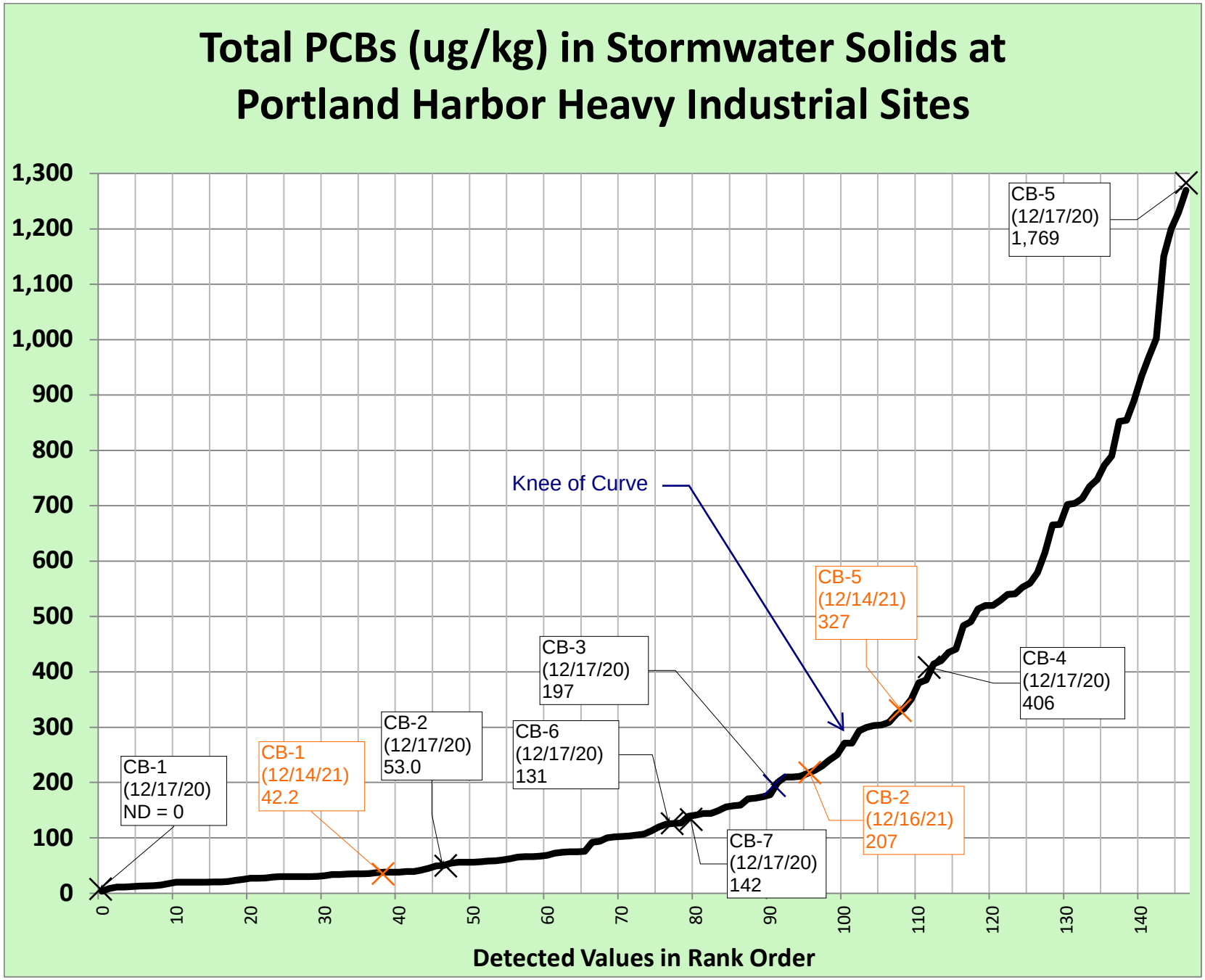
U: Not detected. Reporting or detection limit shown.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.

TABLE A-11
Summary of Groundwater Sample Chemical Analytical Results
Total and Dissolved Metals
Former Automatic Vending Company
5001 North Lagoon Avenue
Portland, Oregon

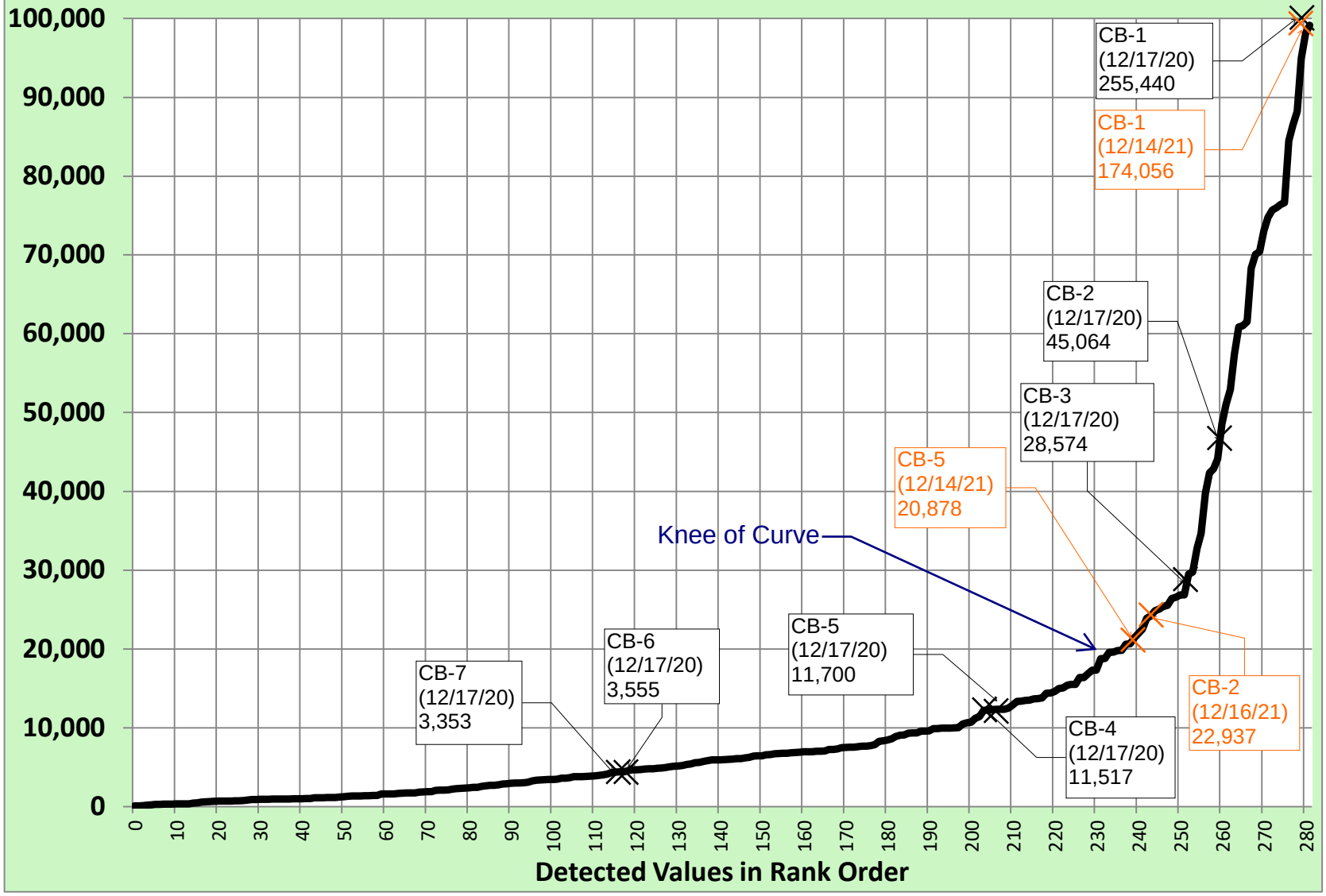
Sample I.D.	Sample Date	Screen Interval (feet BGS)	Total Metals EPA Method 6020A (ICP-MS) (µg/L)													Dissolved Metals EPA Method 6020A (ICP-MS) (µg/L)			
			Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Arsenic	Copper	Mercury	Lead
DP-1W	07/18/19	20 - 30	0.500 U	**9.61**	0.100 U	**0.0577** J	**0.713** J	**10.2**	**0.720**	**0.108**	**8.35**	0.500 U	0.100 U	0.100 U	**9.10**	**9.17**	–	–	–
DP-2W	07/18/19	20 - 30	0.500 U	**1.19**	0.100 U	0.0400 U	**0.791** J	**1.20**	**0.237**	0.0400 U	**2.56**	0.500 U	0.100 U	0.100 U	**4.03**	**1.15**	–	–	–
DP-3W	07/18/19	25 - 35	0.500 U	**0.647** J	0.100 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.0400 U	**9.49**	0.500 U	0.100 U	0.100 U	2.00 U	**0.525** J	0.500 U	–	0.100 U
DP-14W	07/16/20	24 - 34	–	**1.33**	–	*0.100 U*	–	**5.62**	**0.584**	0.0400 U	–	–	–	–	**6.56**	**1.06**	1.00 U	0.0400 U	0.100 U
DP-15W	07/16/20	20 - 35	–	**1.42**	–	*0.100 U*	–	**1.39**	0.100 U	0.0400 U	–	–	–	–	**4.49**	**1.64**	1.00 U	0.0400 U	0.100 U
DP-16W	07/16/20	20 - 30	–	*0.500 U*	–	–	–	1.00 U	0.100 U	–	–	–	–	–	–	*0.500 U*	**1.08** J	–	0.100 U
DP-16W-DUP	07/16/20	20 - 30	–	*0.500 U*	–	–	–	**1.09** J	0.100 U	–	–	–	–	–	–	*0.500 U*	1.00 U	–	0.100 U
DP-17W	07/16/20	20 - 35	–	**0.831** J	–	–	–	1.00 U	0.100 U	0.0400 U	–	–	–	–	–	**0.873** J	1.00 U	–	0.100 U
DP-18W	07/16/20	19.5 - 34.5	–	*0.500 U*	–	0.100 U	–	1.00 U	0.100 U	0.0400 U	–	–	–	–	2.00 U	*0.500 U*	1.00 U	0.0400 U	0.100 U
DP-19W	07/16/20	20 - 35	–	**0.924** J	–	–	–	**2.07**	0.100 U	–	–	–	–	–	–	**1.00**	1.00 U	–	0.100 U
EPA Portland Harbor CULs[1]			NE	0.018	NE	0.091	11	2.74	0.54	NE	NE	NE	NE	NE	36.5	0.018	2.74	NE	0.54
DEQ JSCS SLVs[2]			6	0.045	NE	0.094	100	2.7	0.54	0.77	16	5	0.12	NE	36	0.045	2.7	0.77	0.54

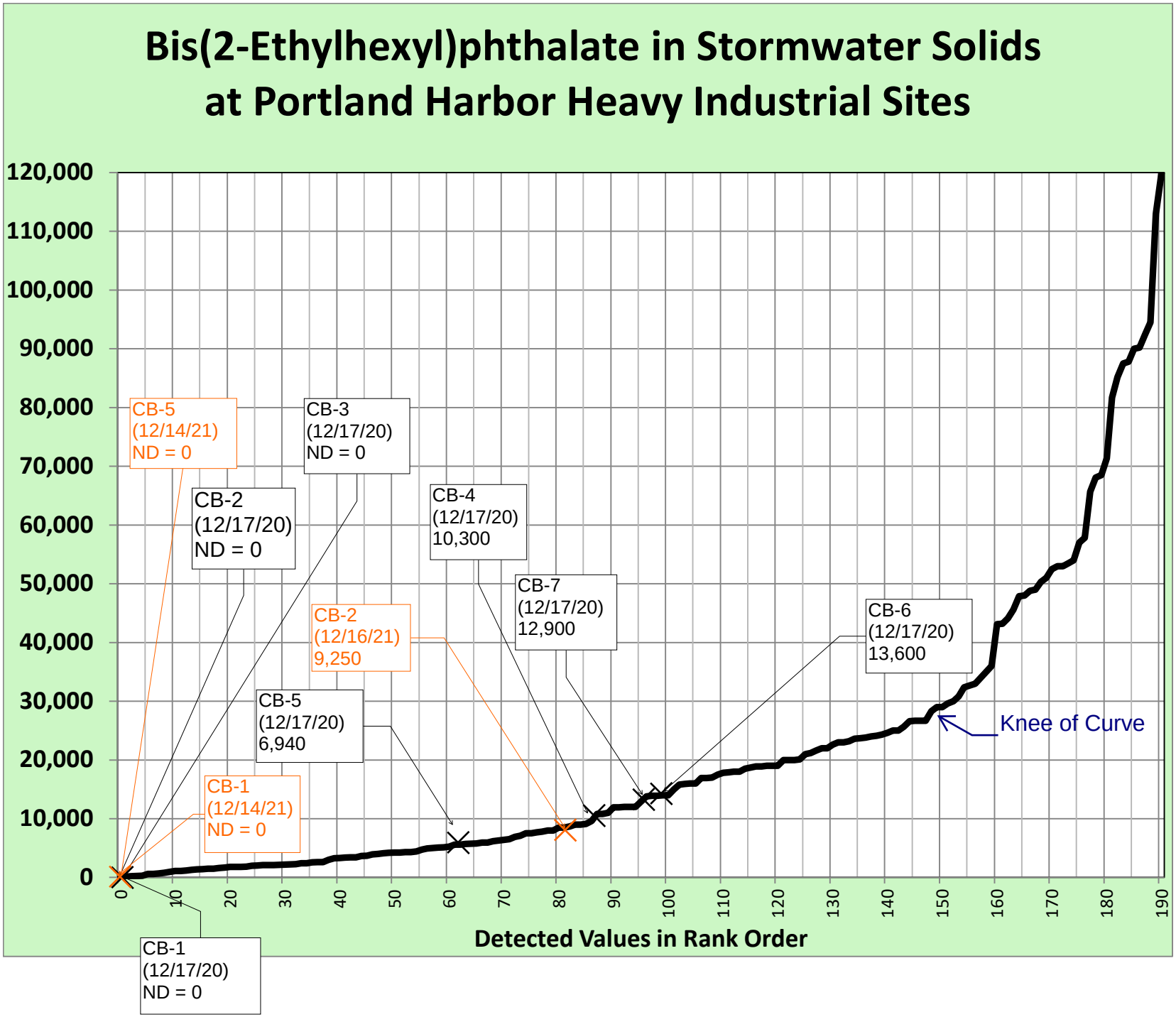
Notes:
1. Table 17 of EPA's Record of Decision for the Portland Harbor Superfund Site, updated January 2020
2. Table 3.1 of DEQ's Portland Harbor Joint Source Control Strategy, dated December 2005
J: Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than regulatory screening level.
Italics indicate detection limit is greater than EPA Portland Harbor CULs and/or DEQ JSCS SLVs.
–: not analyzed

Attachment 3-Stormwater Charts

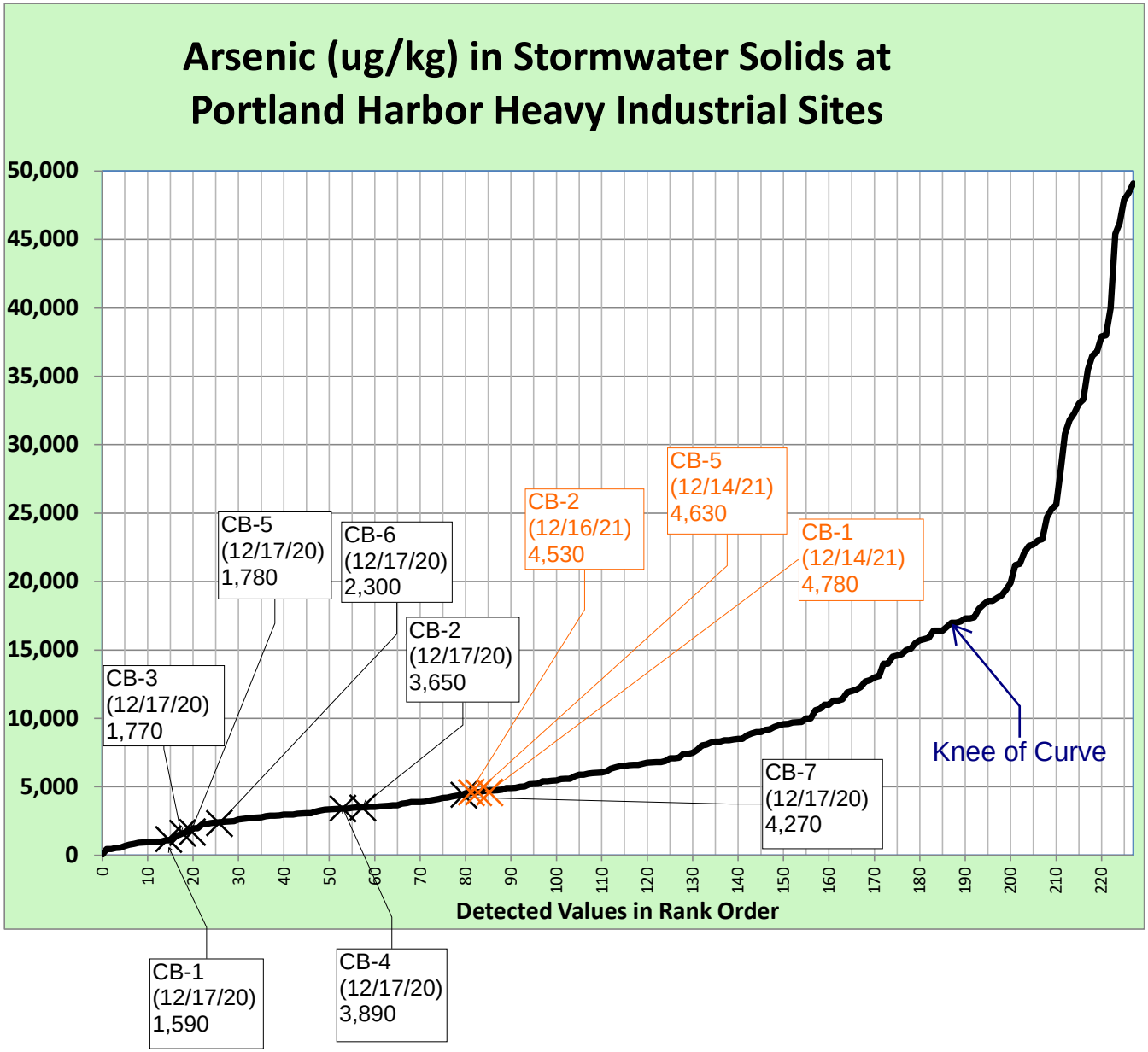

Total PCBs (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
Detected Values in Rank Order
CB-5 (12/17/20) 1,769
Knee of Curve
CB-5 (12/14/21) 327
CB-3 (12/17/20) 197
CB-4 (12/17/20) 406
CB-2 (12/17/20) 53.0
CB-6 (12/17/20) 131
CB-1 (12/14/21) 42.2
CB-1 (12/17/20) ND = 0
CB-2 (12/16/21) 207
CB-7 (12/17/20) 142

Total PAHs (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites

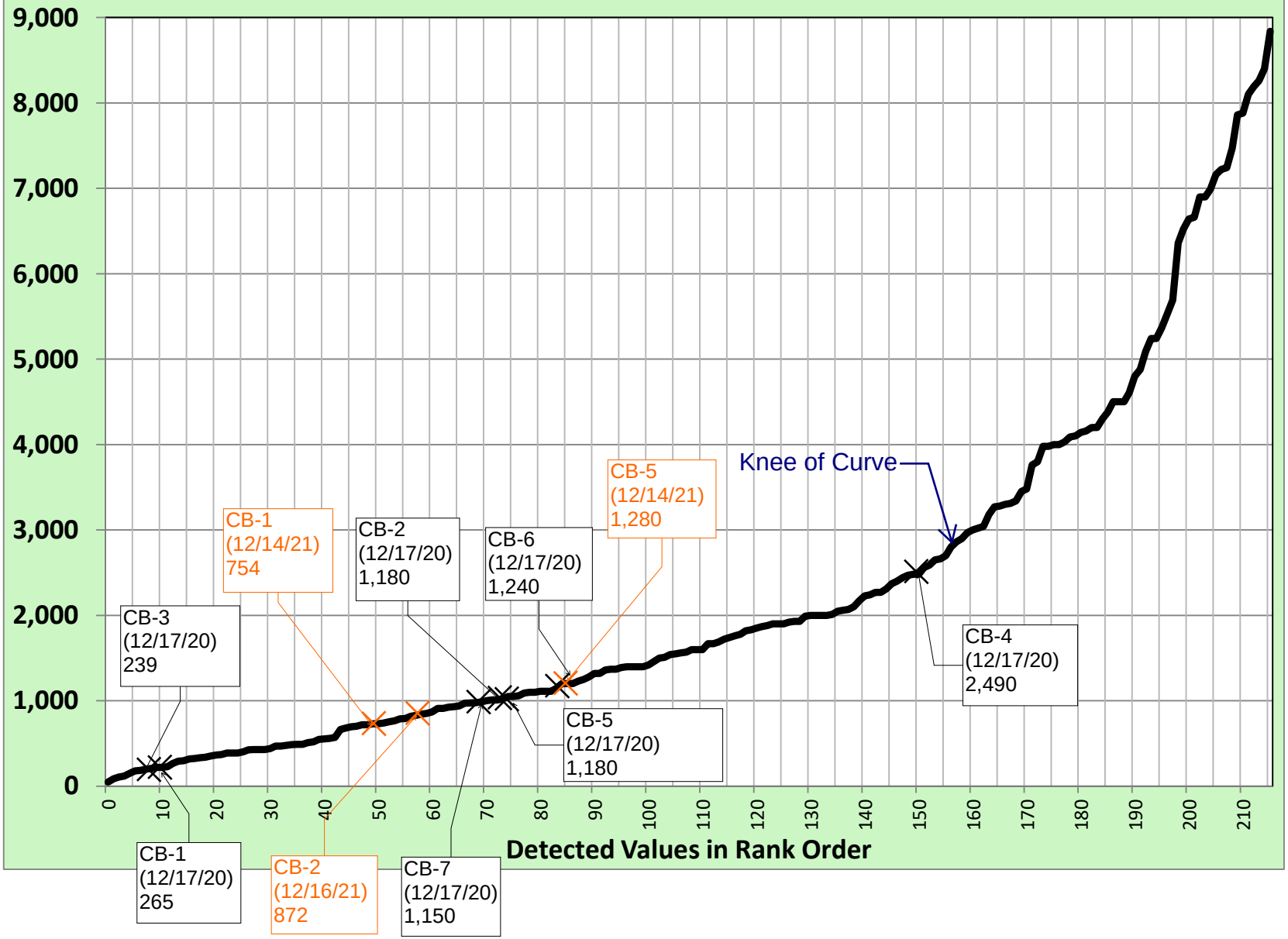


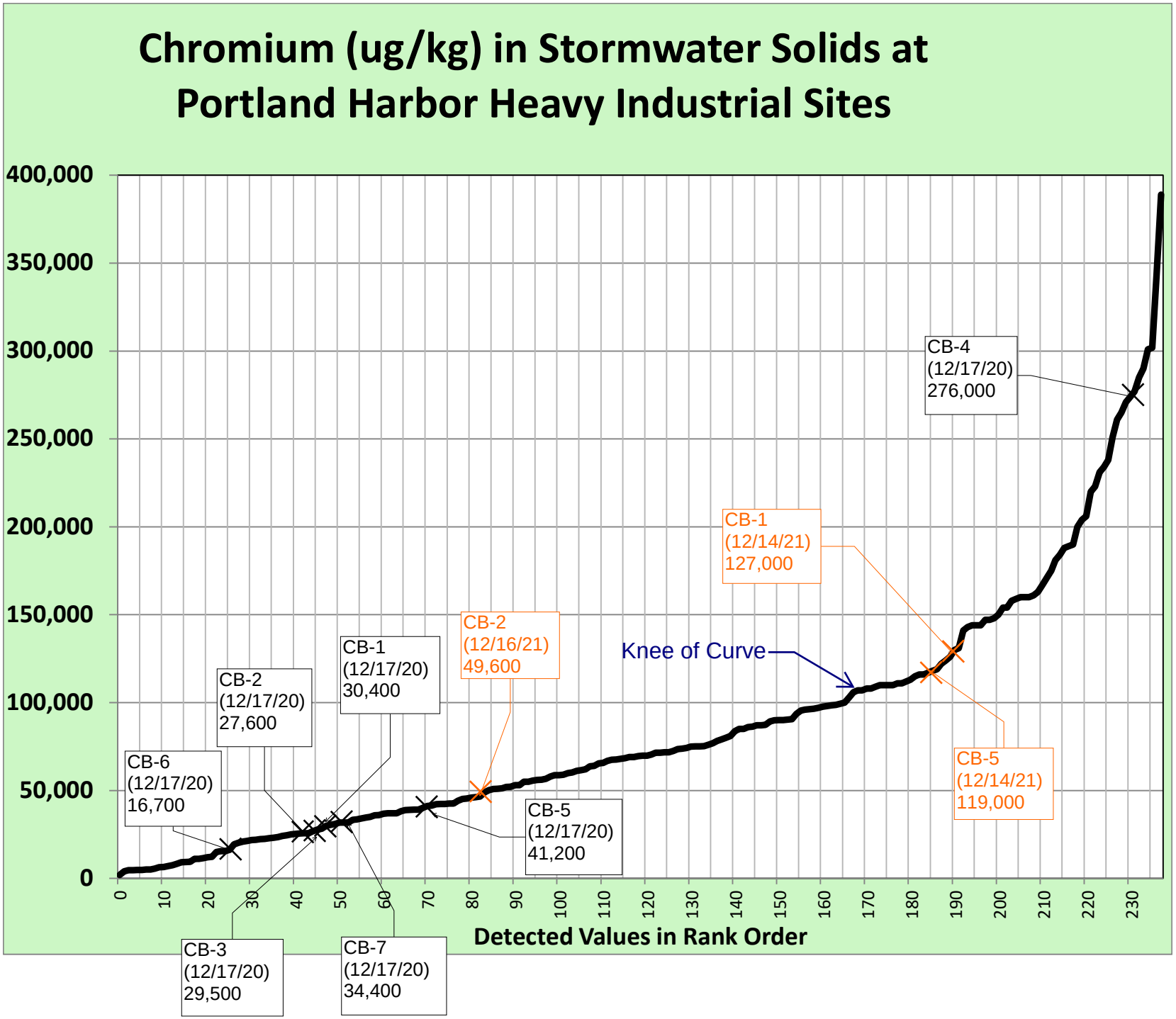

Bis(2-Ethylhexyl)phthalate in Stormwater Solids
at Portland Harbor Heavy Industrial Sites
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
Detected Values in Rank Order
CB-5 (12/14/21) ND = 0
CB-3 (12/17/20) ND = 0
CB-2 (12/17/20) ND = 0
CB-4 (12/17/20) 10,300
CB-7 (12/17/20) 12,900
CB-6 (12/17/20) 13,600
CB-2 (12/16/21) 9,250
CB-5 (12/17/20) 6,940
CB-1 (12/14/21) ND = 0
Knee of Curve
CB-1 (12/17/20) ND = 0

State of Oregon Department of Environmental Quality

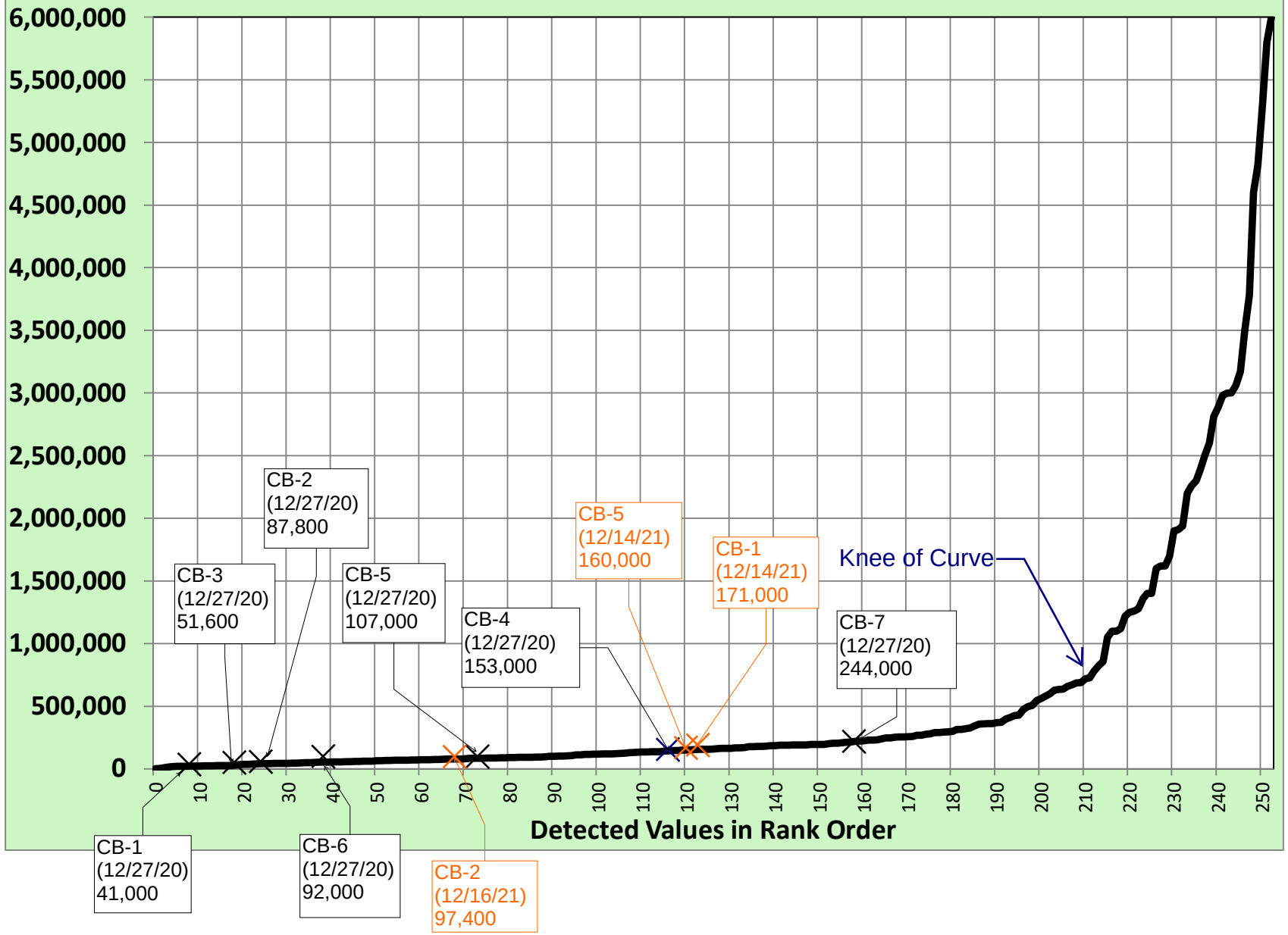


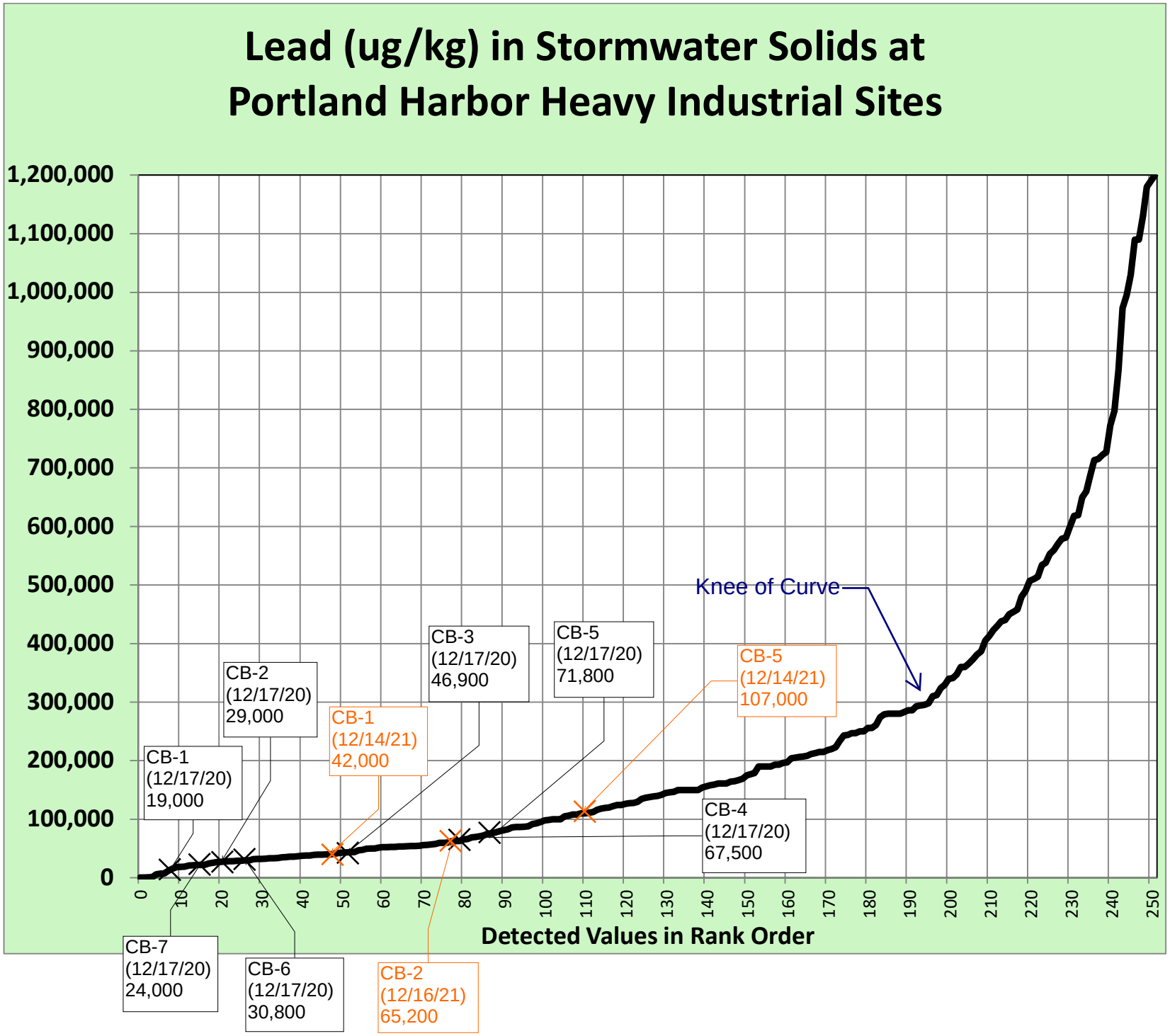
Cadmium (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites



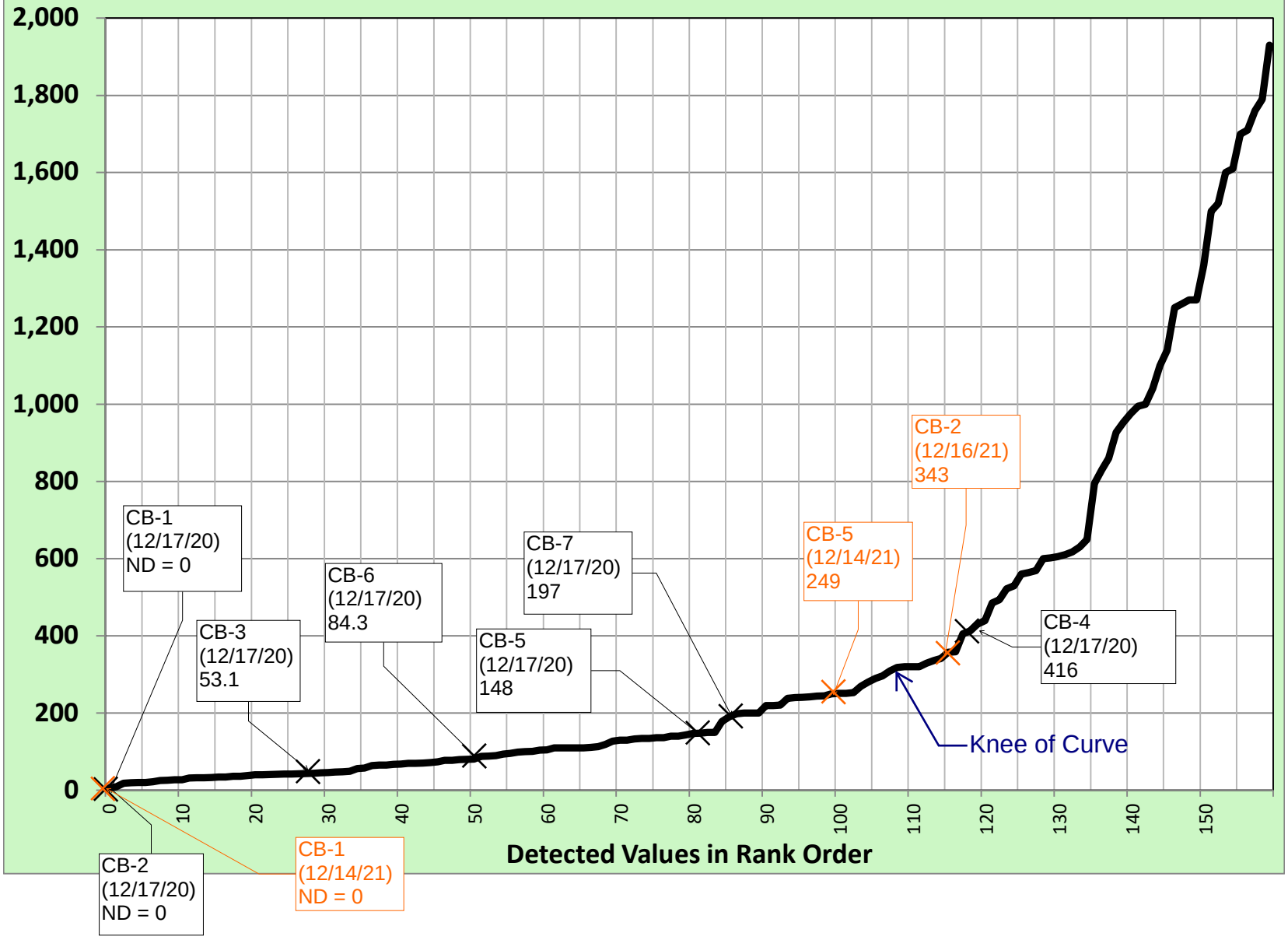

Chromium (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
Detected Values in Rank Order
CB-4 (12/17/20) 276,000
CB-1 (12/14/21) 127,000
CB-2 (12/16/21) 49,600
Knee of Curve
CB-1 (12/17/20) 30,400
CB-2 (12/17/20) 27,600
CB-6 (12/17/20) 16,700
CB-5 (12/14/21) 119,000
CB-5 (12/17/20) 41,200
CB-3 (12/17/20) 29,500
CB-7 (12/17/20) 34,400

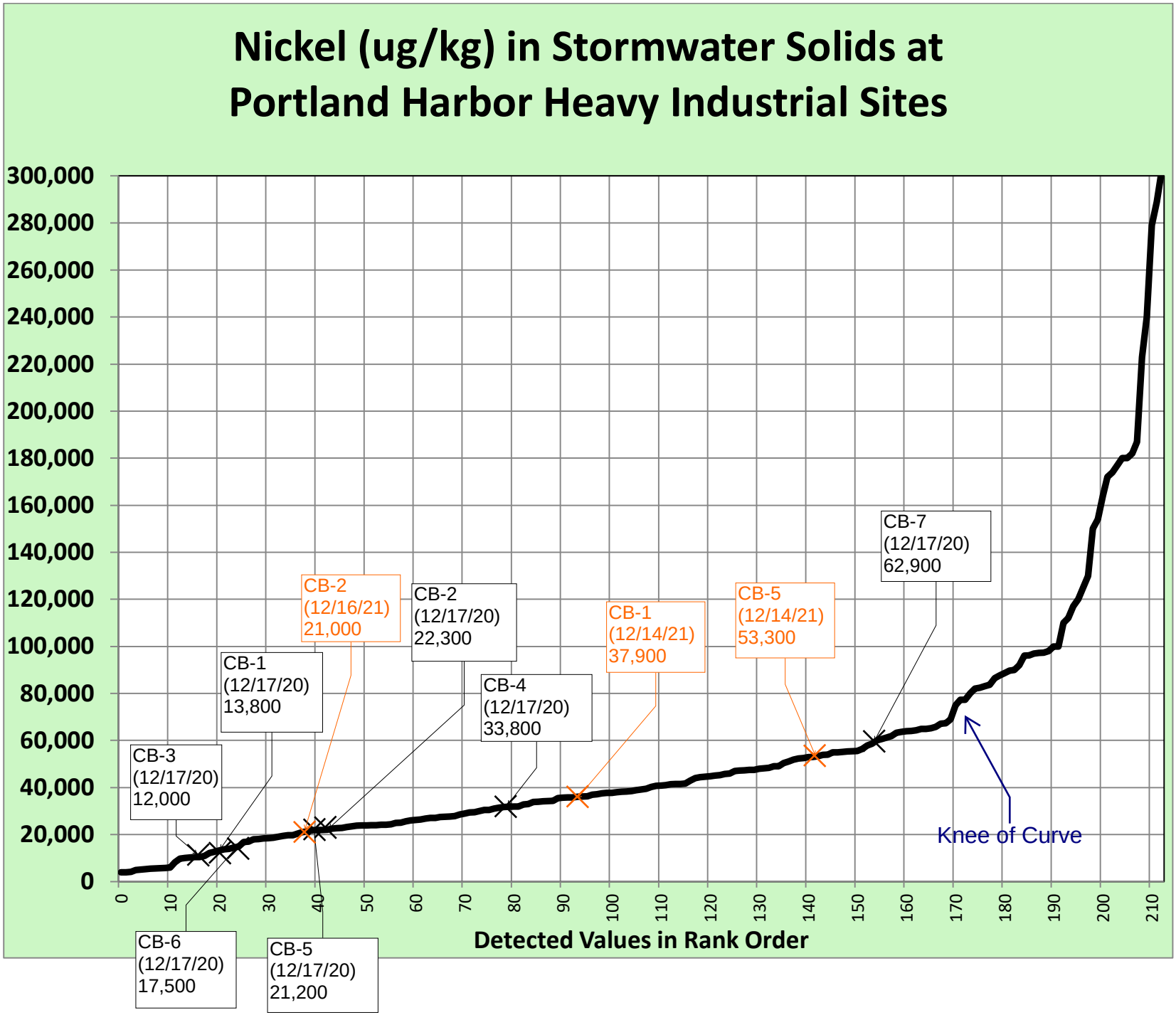
Copper (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites



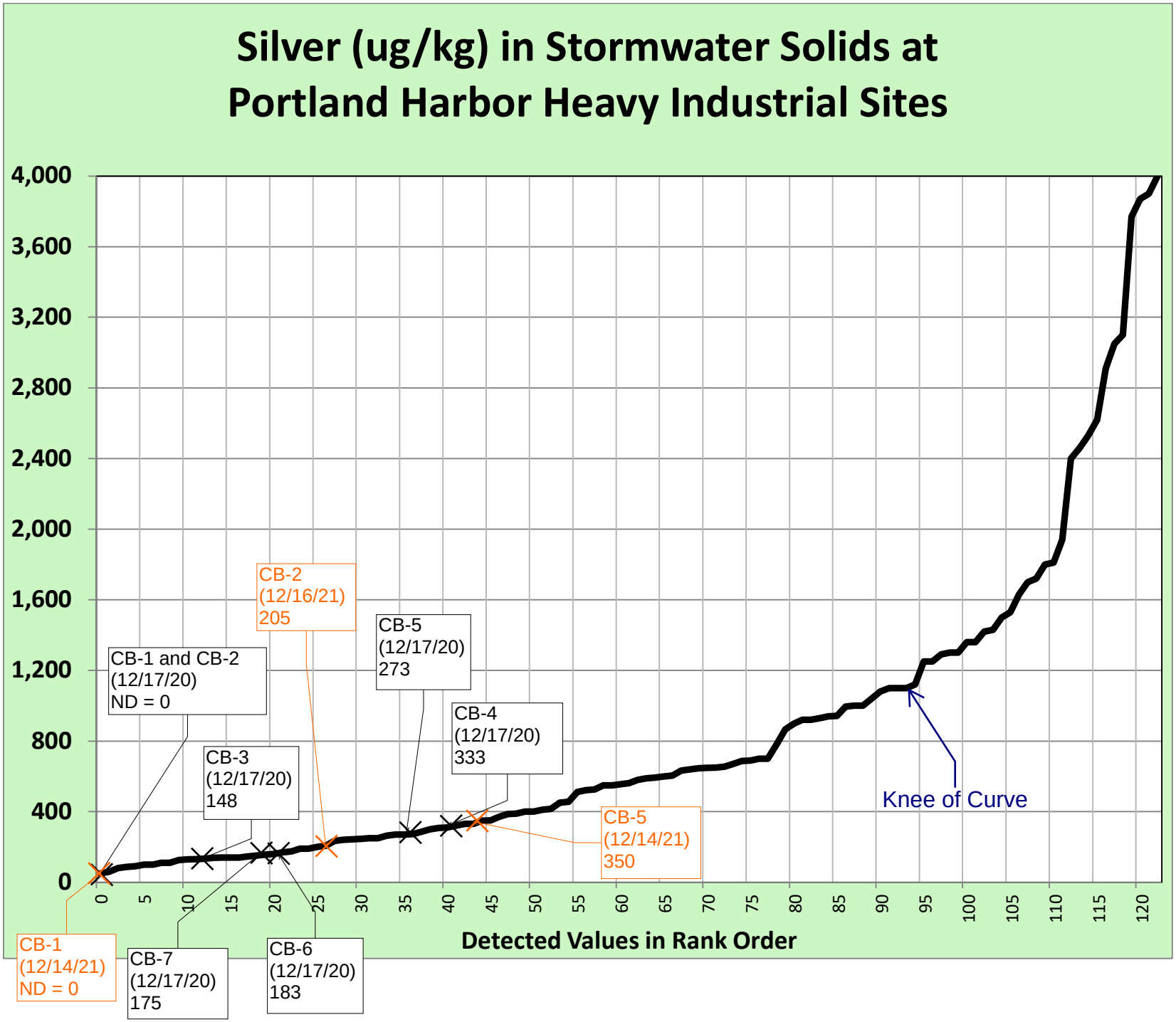

Lead (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites
1,200,000
1,100,000
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
Detected Values in Rank Order
Knee of Curve
CB-1 (12/17/20) 19,000
CB-2 (12/17/20) 29,000
CB-3 (12/17/20) 46,900
CB-5 (12/17/20) 71,800
CB-4 (12/17/20) 67,500
CB-7 (12/17/20) 24,000
CB-6 (12/17/20) 30,800
CB-1 (12/14/21) 42,000
CB-2 (12/16/21) 65,200
CB-5 (12/14/21) 107,000

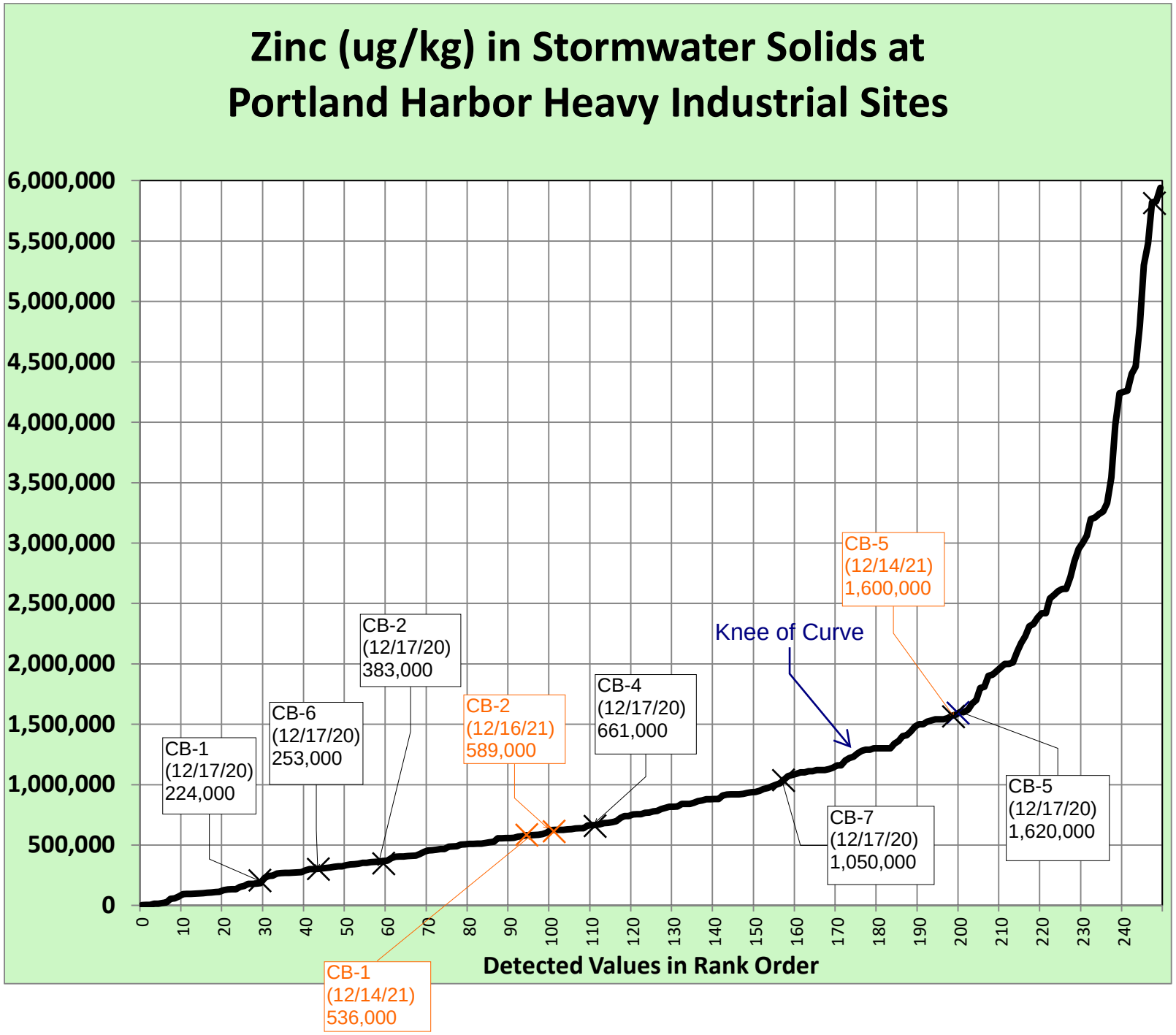
Mercury (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites

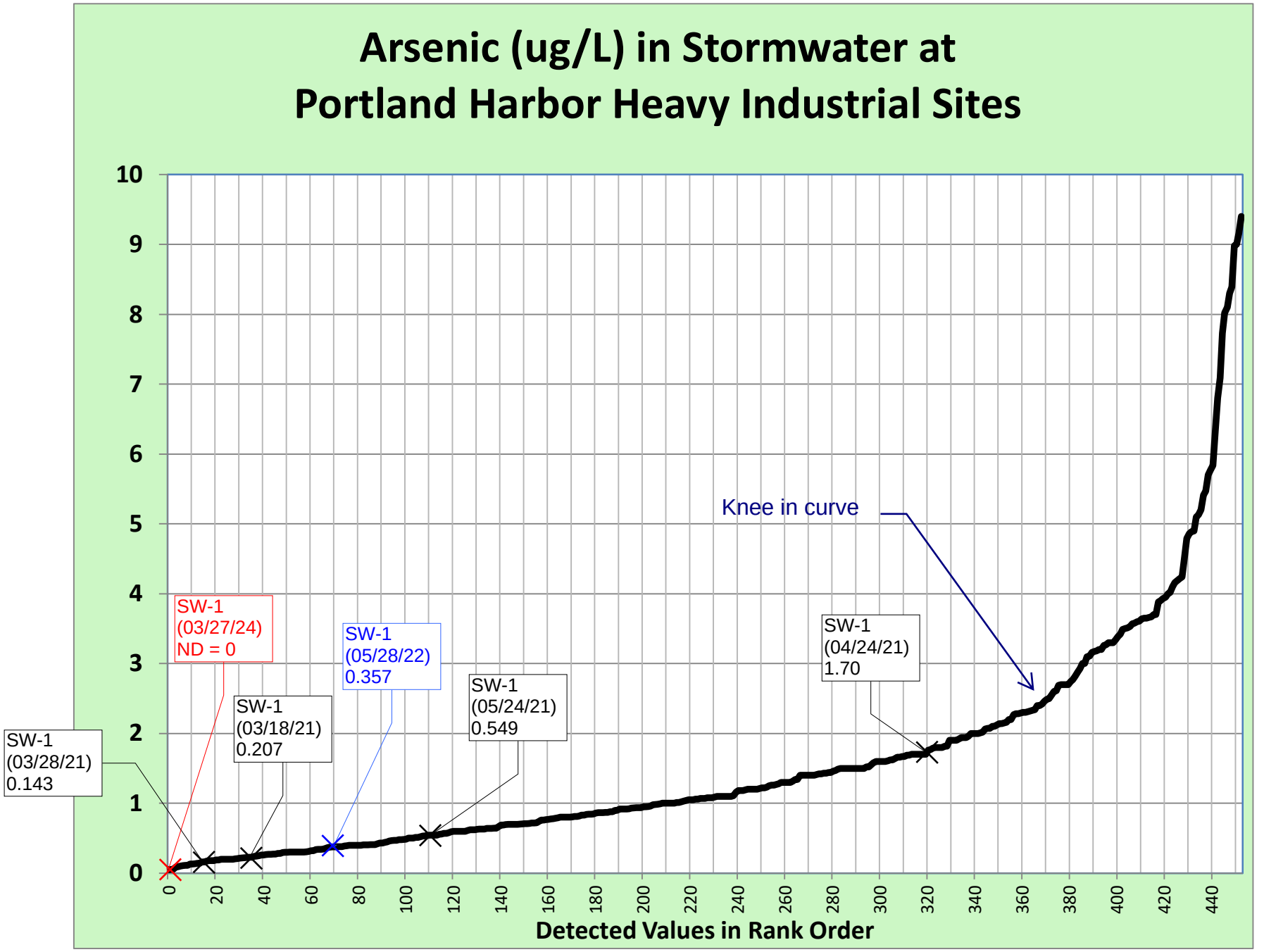


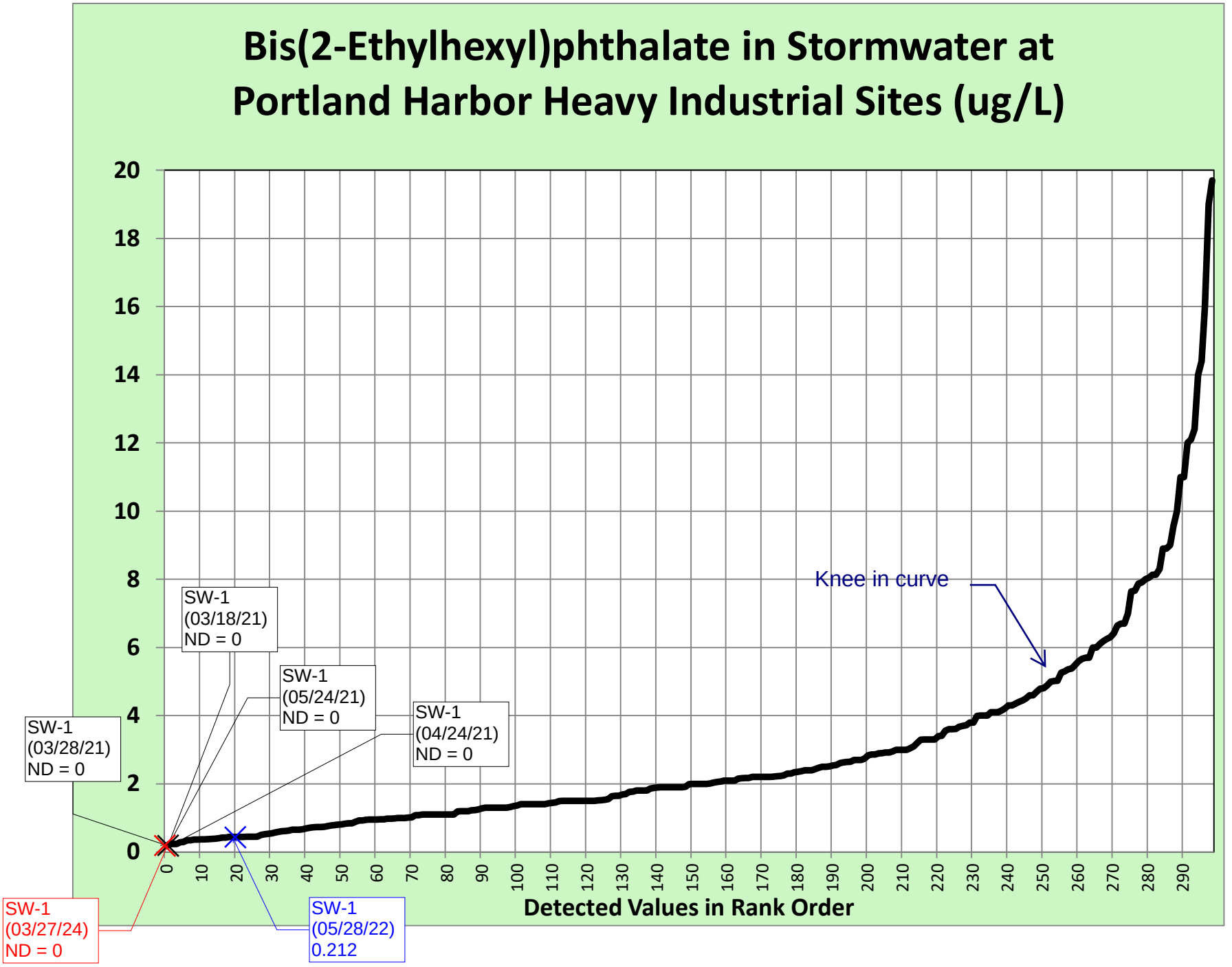

Nickel (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites
300,000
280,000
260,000
240,000
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
Detected Values in Rank Order
CB-3 (12/17/20) 12,000
CB-1 (12/17/20) 13,800
CB-2 (12/16/21) 21,000
CB-2 (12/17/20) 22,300
CB-4 (12/17/20) 33,800
CB-1 (12/14/21) 37,900
CB-5 (12/14/21) 53,300
CB-7 (12/17/20) 62,900
Knee of Curve
CB-6 (12/17/20) 17,500
CB-5 (12/17/20) 21,200

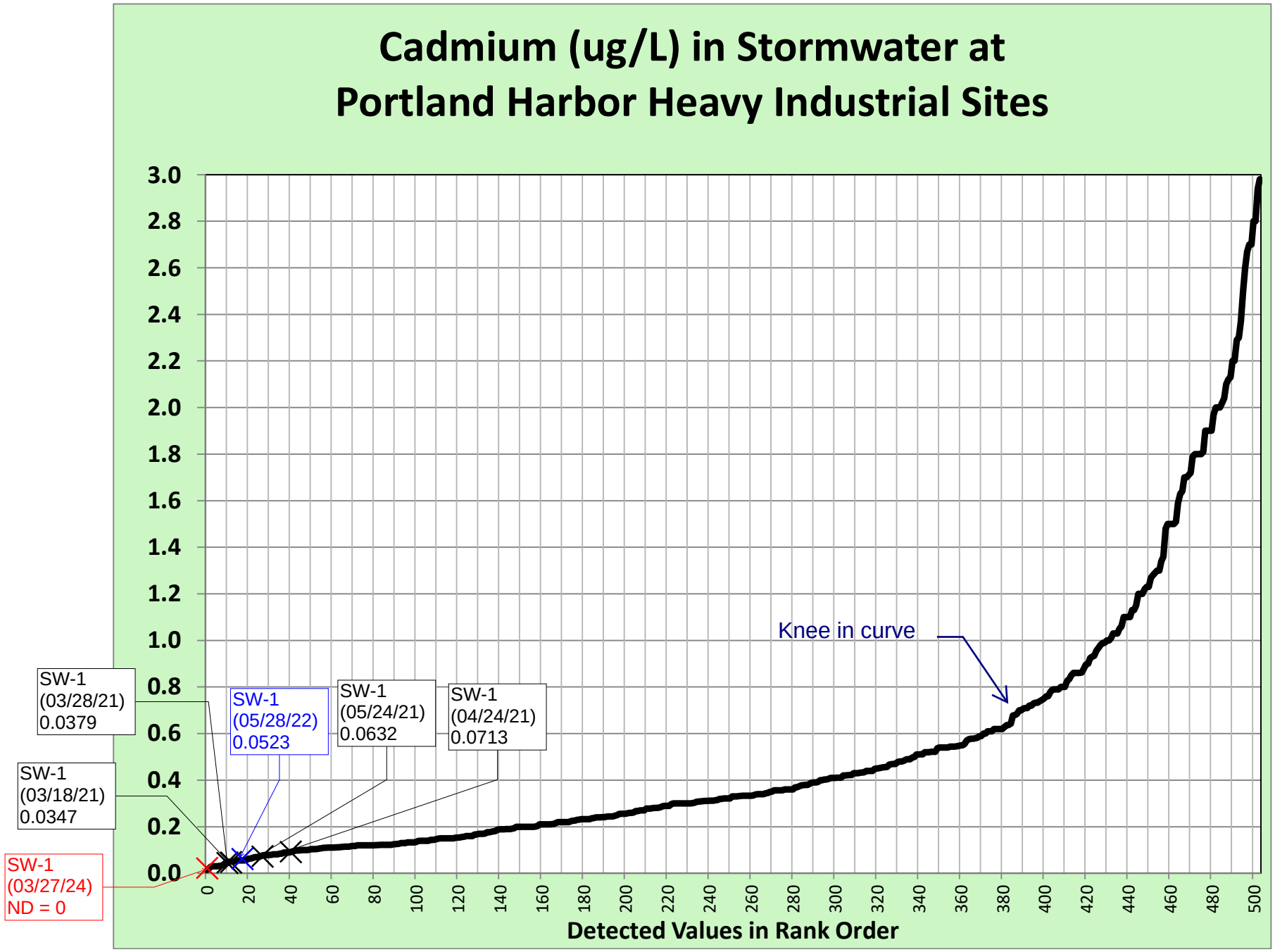
Silver (ug/kg) in Stormwater Solids at Portland Harbor Heavy Industrial Sites

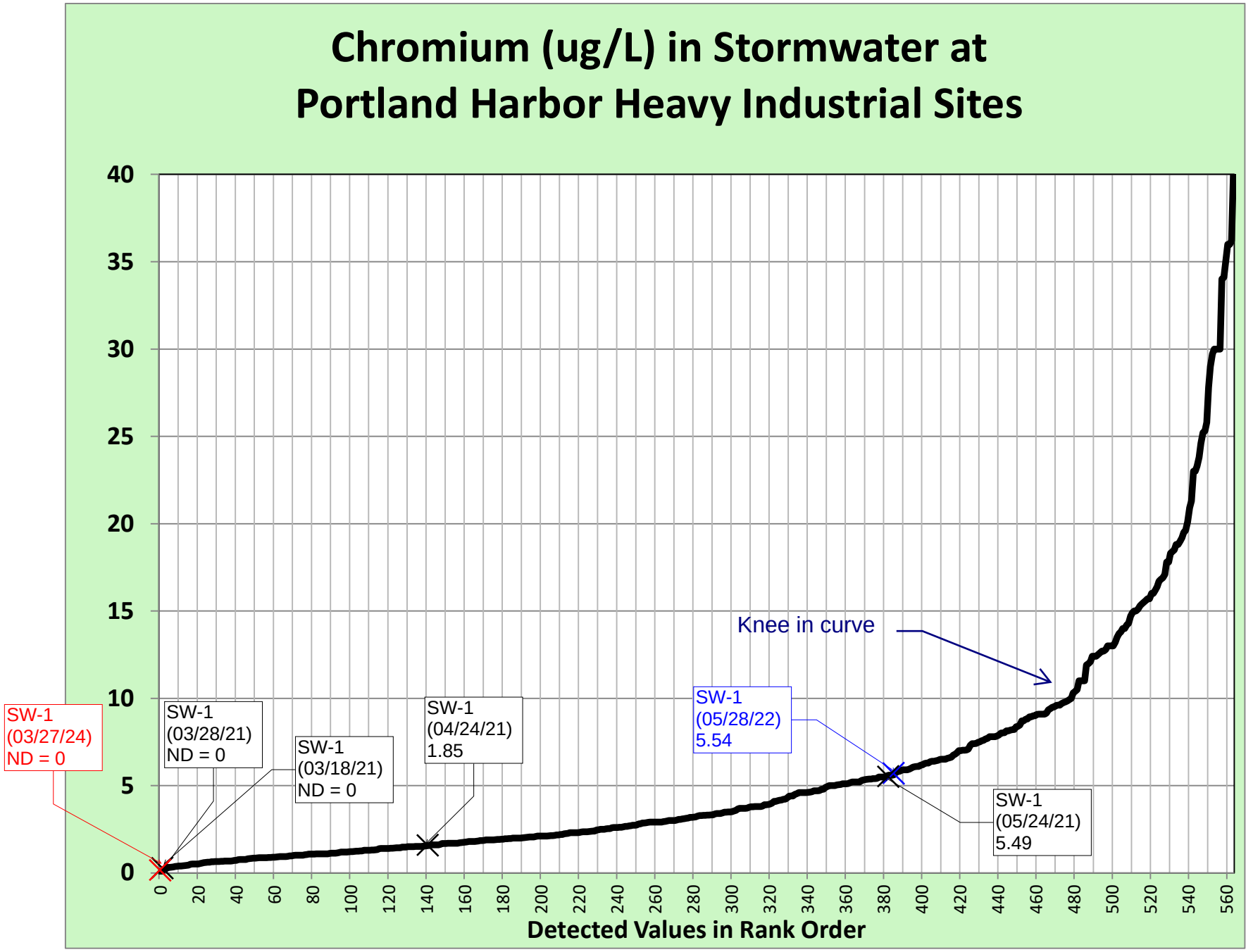


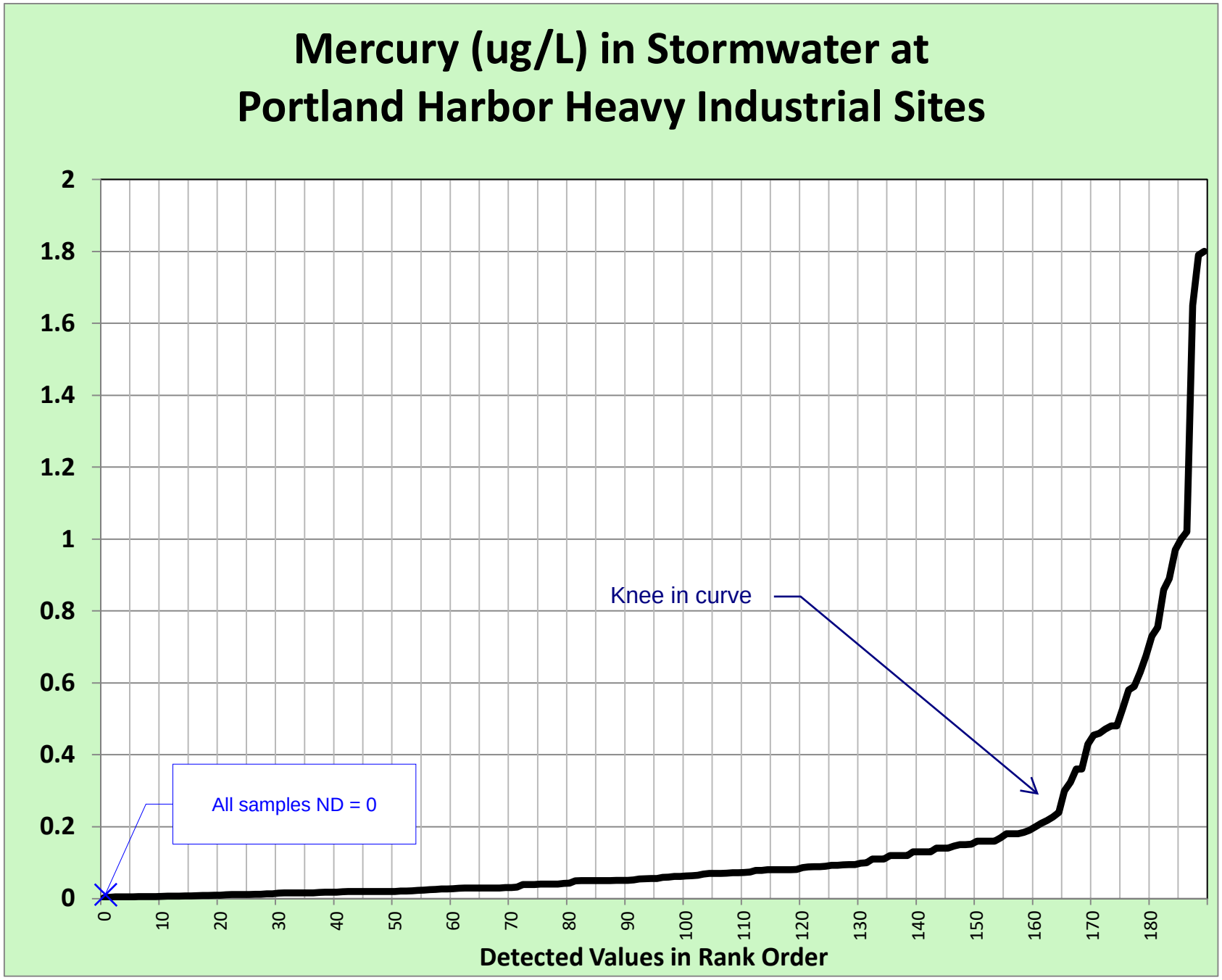

Zinc (ug/kg) in Stormwater Solids at
Portland Harbor Heavy Industrial Sites
6,000,000
5,500,000
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
Detected Values in Rank Order
CB-1
(12/17/20)
224,000
CB-6
(12/17/20)
253,000
CB-2
(12/17/20)
383,000
CB-2
(12/16/21)
589,000
CB-4
(12/17/20)
661,000
Knee of Curve
CB-5
(12/14/21)
1,600,000
CB-7
(12/17/20)
1,050,000
CB-5
(12/17/20)
1,620,000
CB-1
(12/14/21)
536,000


Arsenic (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
10
9
8
7
6
5
4
3
2
1
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
Detected Values in Rank Order
Knee in curve
SW-1
(03/27/24)
ND = 0
SW-1
(03/28/21)
0.143
SW-1
(03/18/21)
0.207
SW-1
(05/28/22)
0.357
SW-1
(05/24/21)
0.549
SW-1
(04/24/21)
1.70

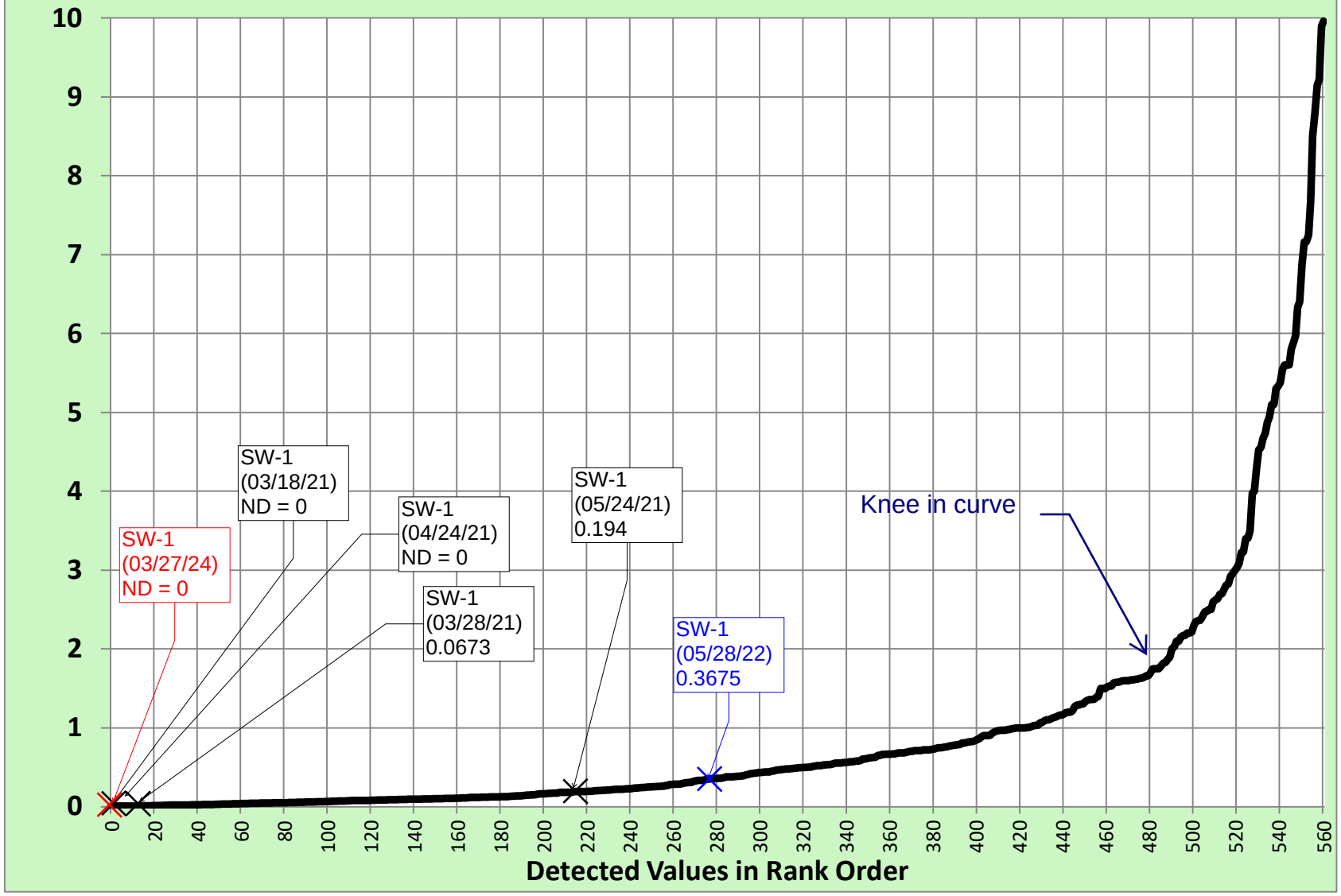

Bis(2-Ethylhexyl)phthalate in Stormwater at Portland Harbor Heavy Industrial Sites (ug/L)
20
18
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
Detected Values in Rank Order
Knee in curve
SW-1 (03/18/21) ND = 0
SW-1 (05/24/21) ND = 0
SW-1 (04/24/21) ND = 0
SW-1 (03/28/21) ND = 0
SW-1 (03/27/24) ND = 0
SW-1 (05/28/22) 0.212


Cadmium (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
Detected Values in Rank Order
Knee in curve
SW-1 (03/28/21) 0.0379
SW-1 (05/28/22) 0.0523
SW-1 (05/24/21) 0.0632
SW-1 (04/24/21) 0.0713
SW-1 (03/18/21) 0.0347
SW-1 (03/27/24) ND = 0

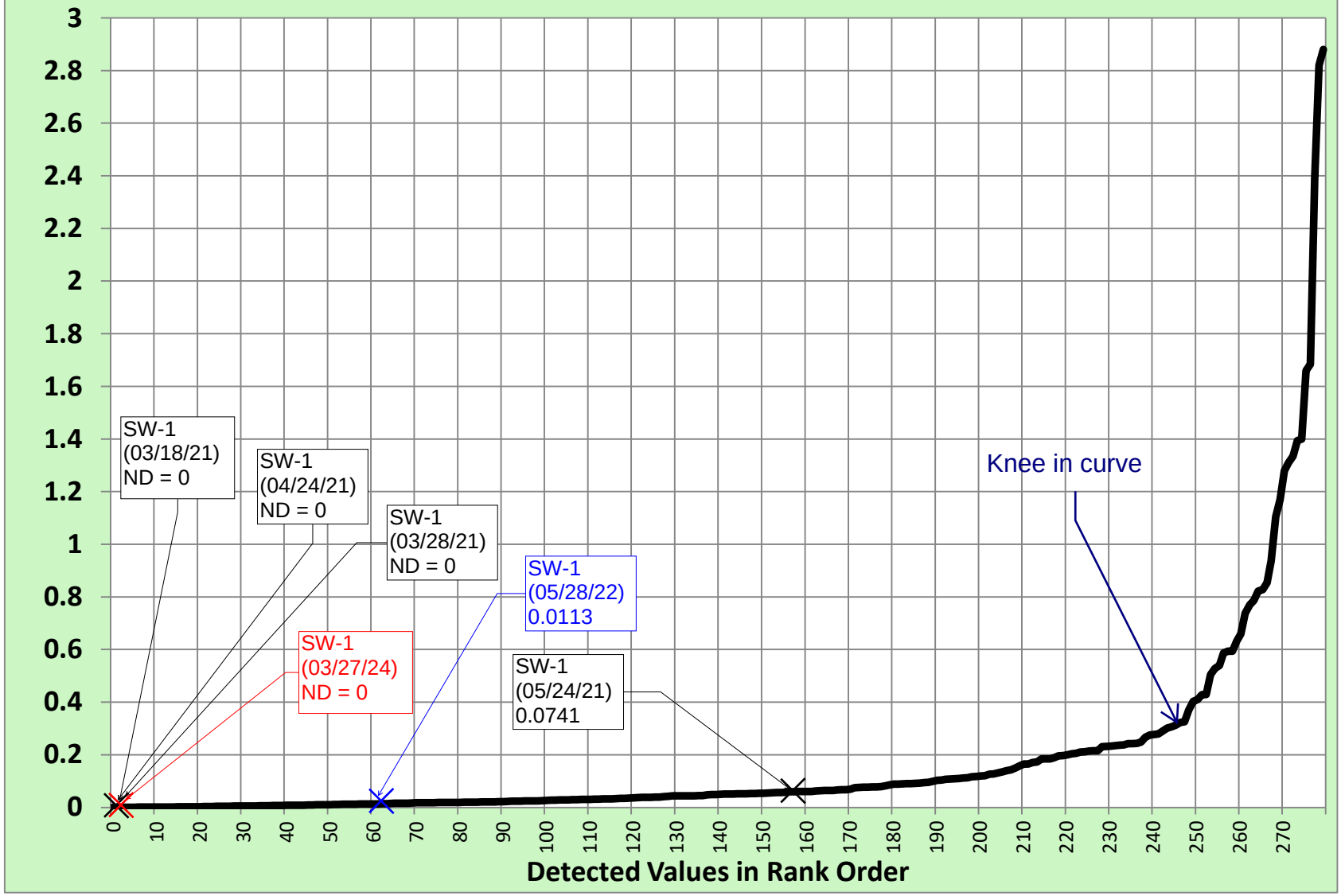

Chromium (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
40
35
30
25
20
15
10
5
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
Detected Values in Rank Order
Knee in curve
SW-1
(03/27/24)
ND = 0
SW-1
(03/28/21)
ND = 0
SW-1
(03/18/21)
ND = 0
SW-1
(04/24/21)
1.85
SW-1
(05/28/22)
5.54
SW-1
(05/24/21)
5.49

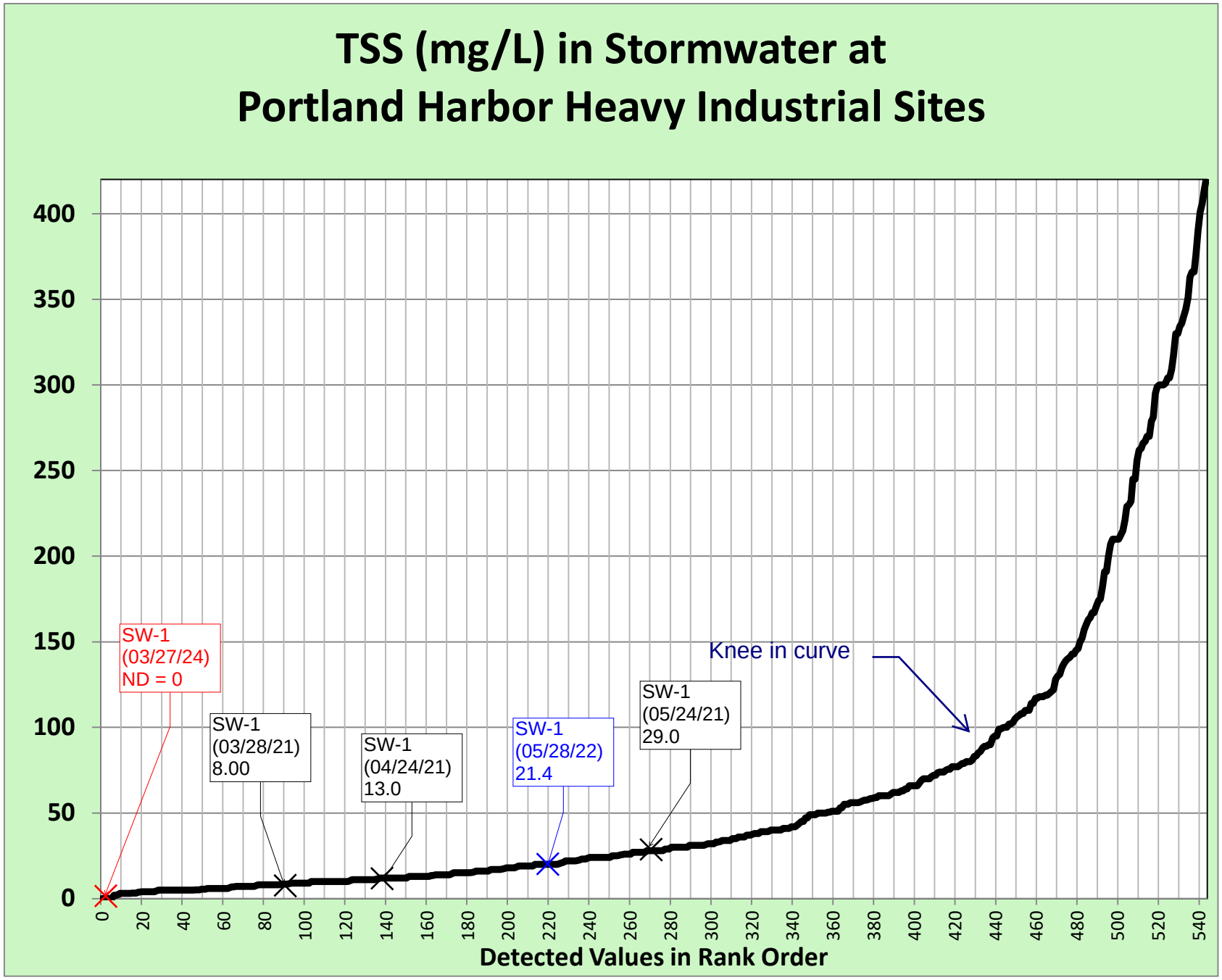

Mercury (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Knee in curve
All samples ND = 0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
Detected Values in Rank Order

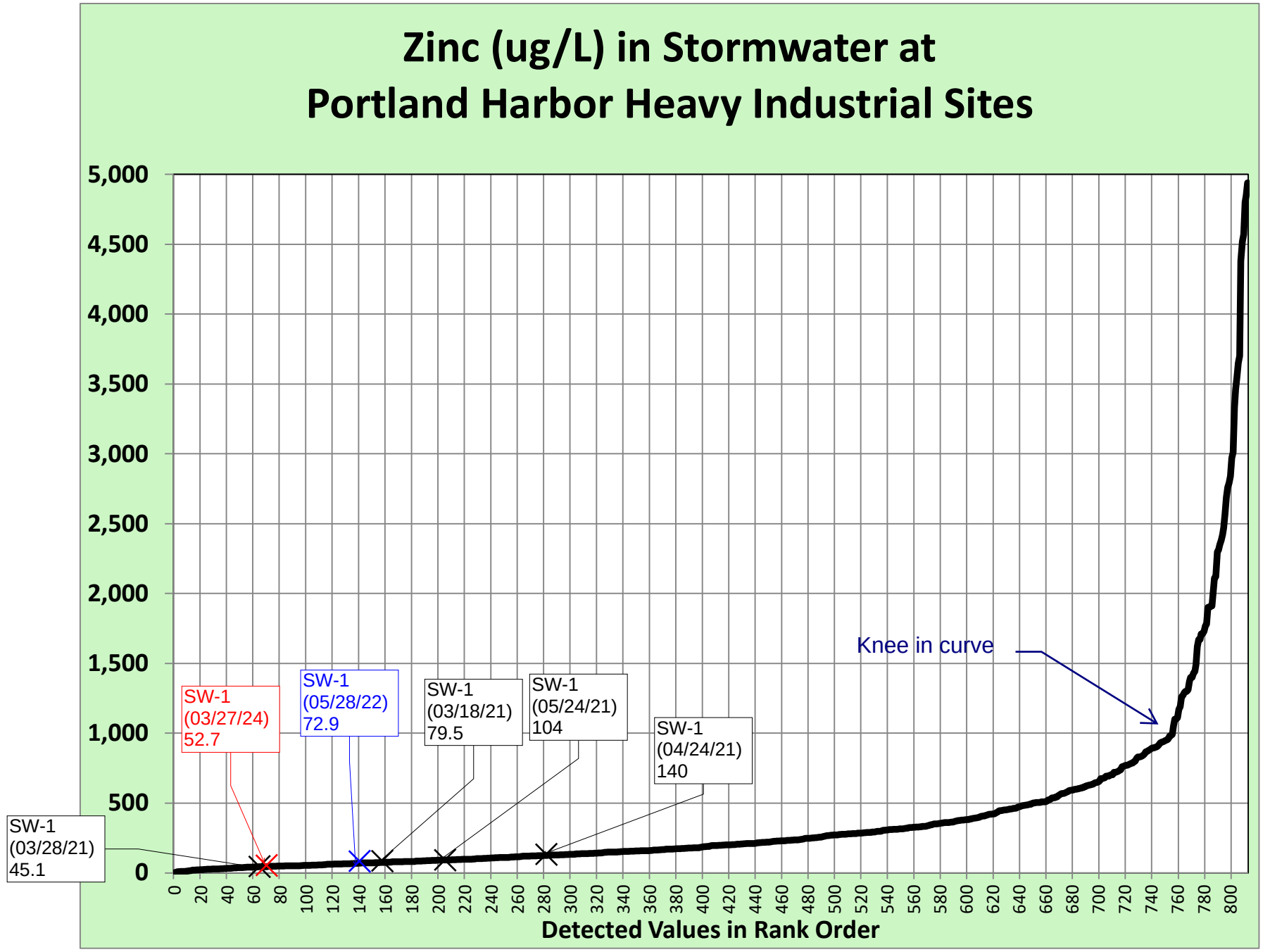
Total PAHs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites

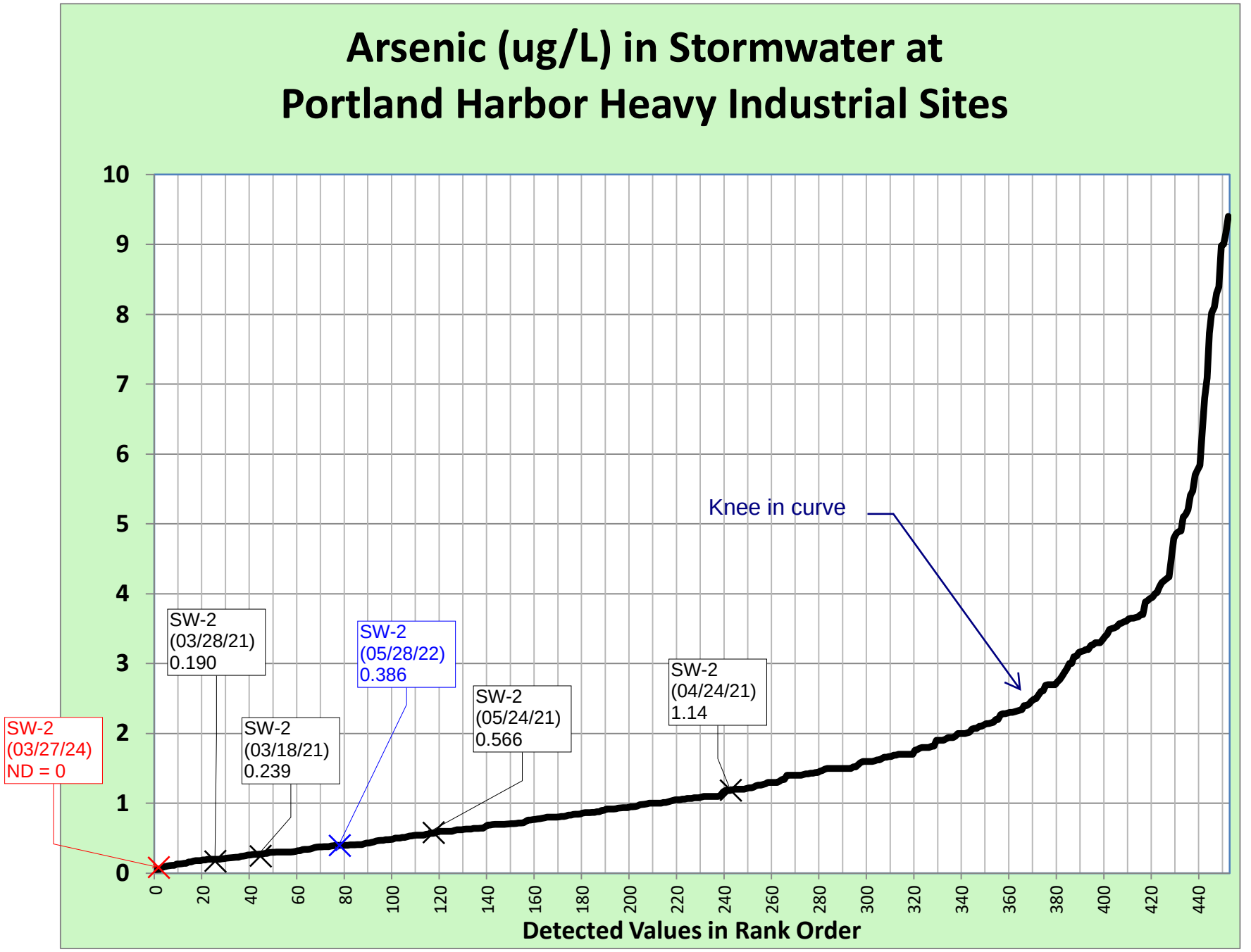


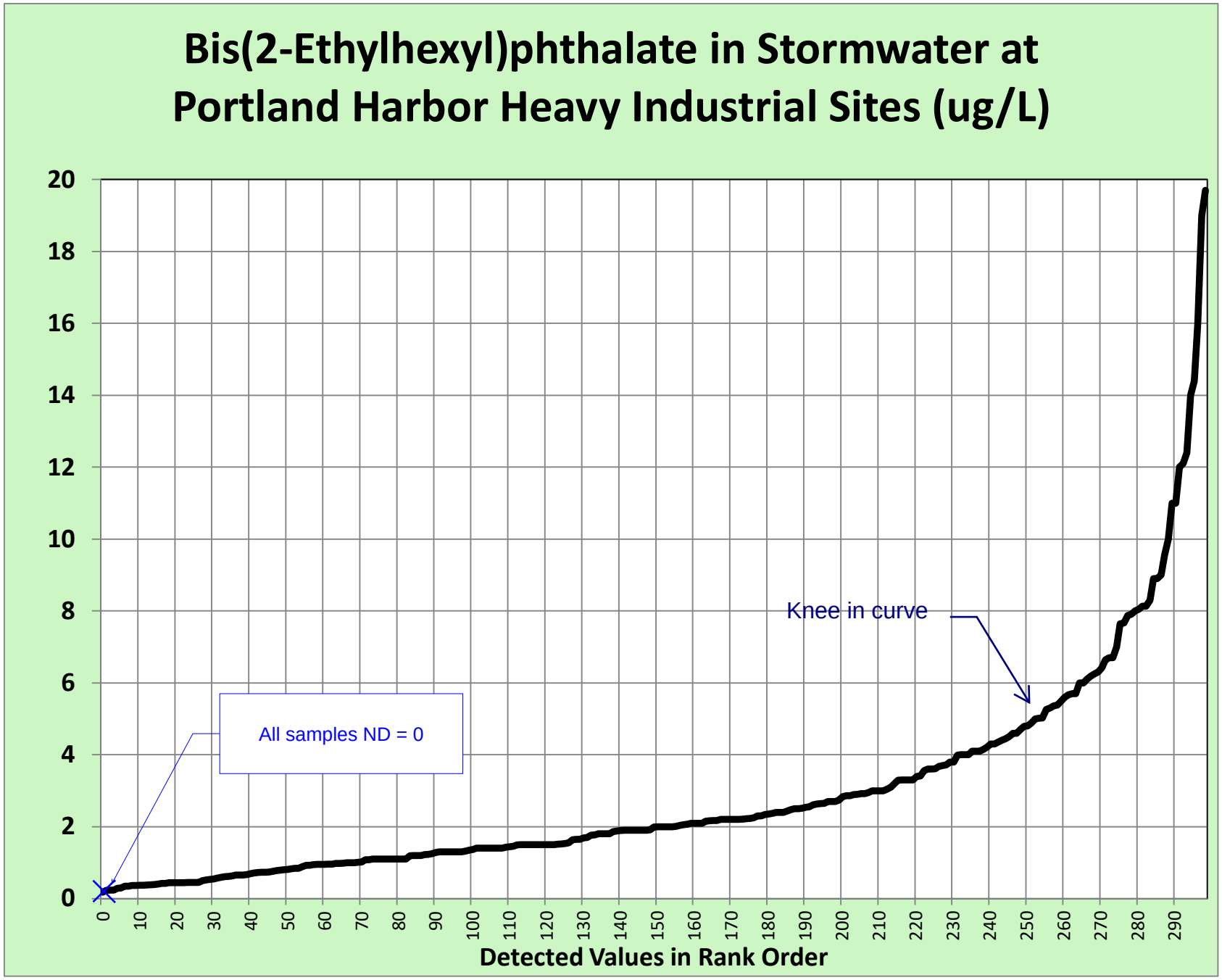
Total PCBs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites

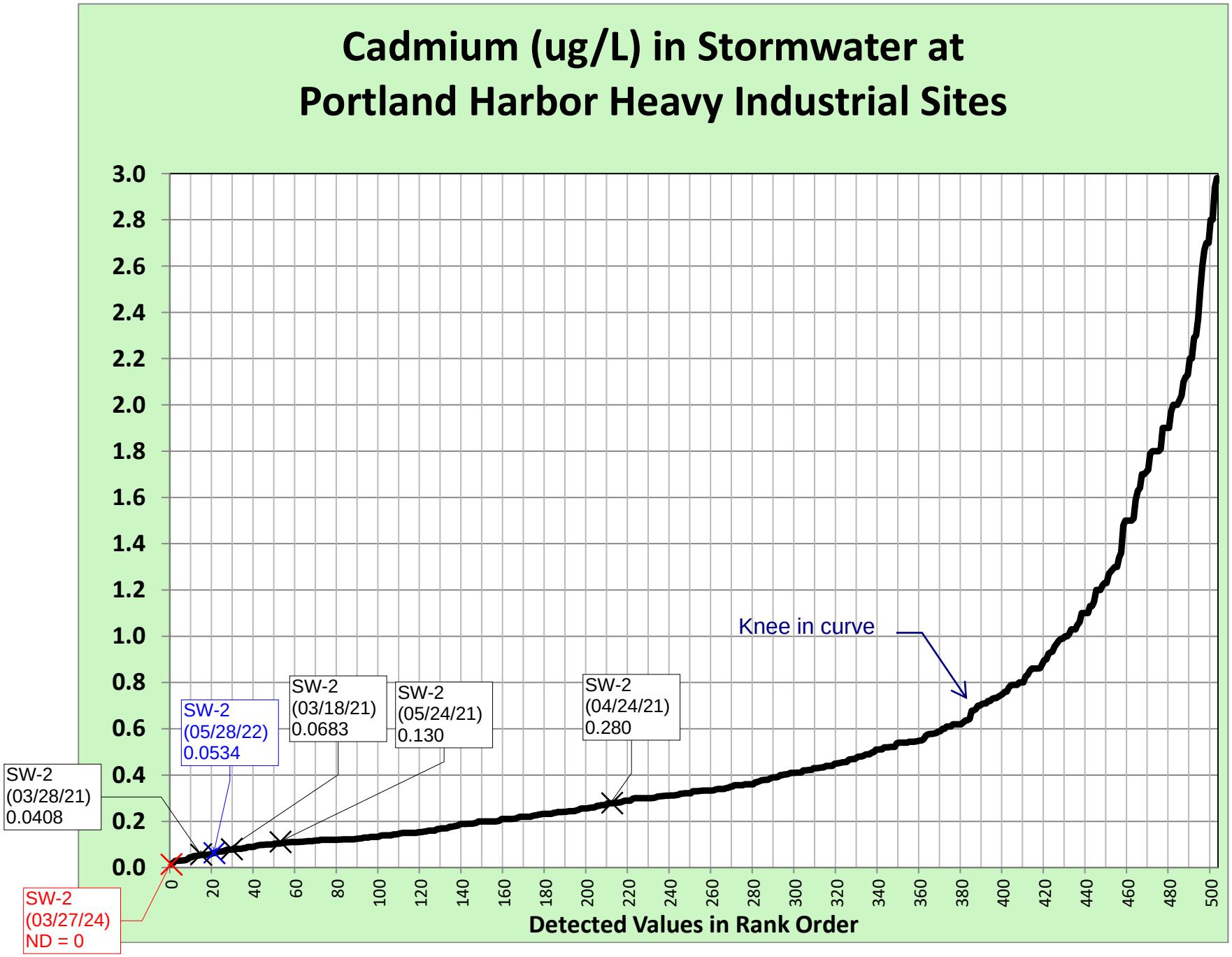


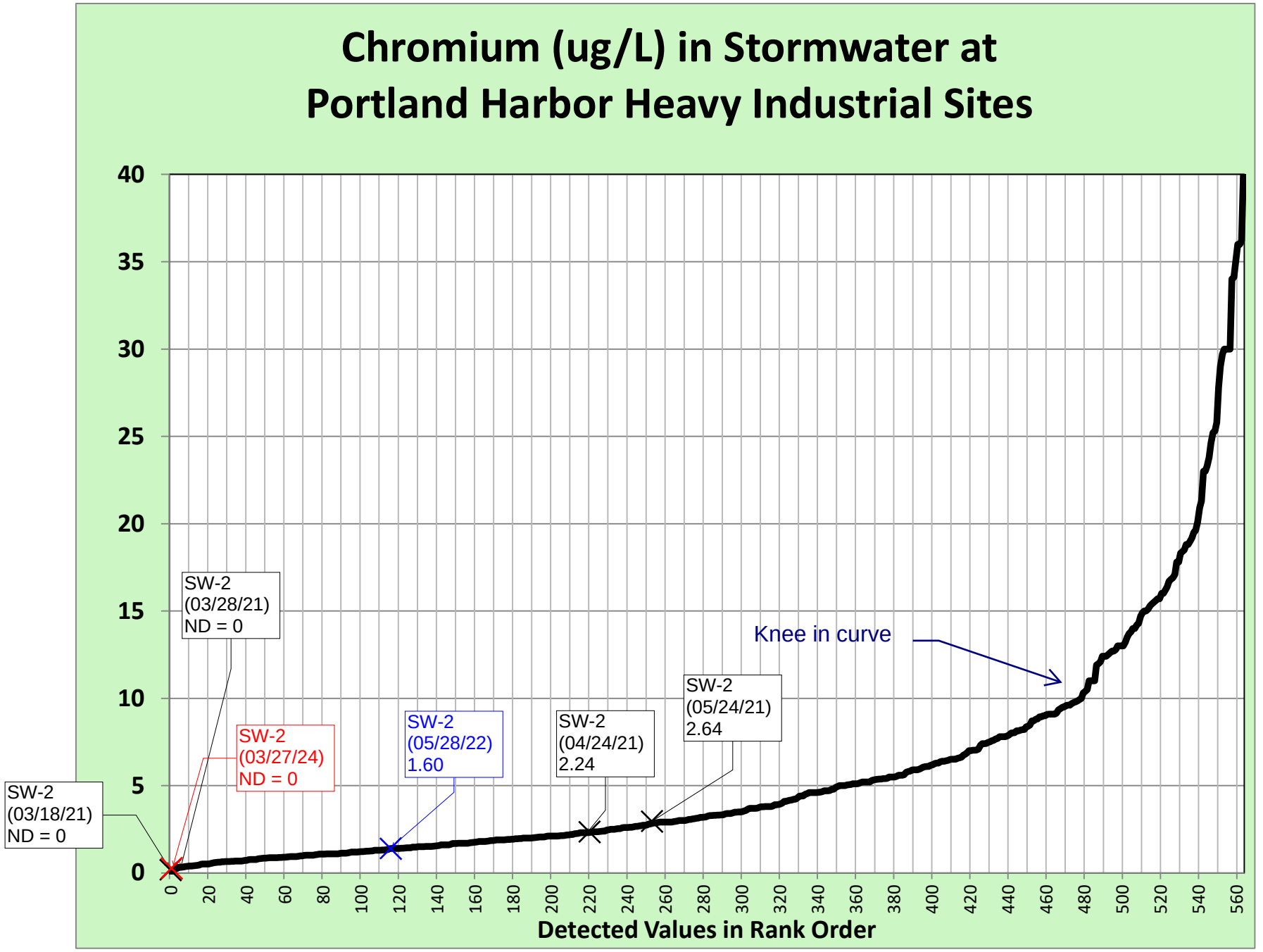

TSS (mg/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
400
350
300
250
200
150
100
50
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
Detected Values in Rank Order
SW-1
(03/27/24)
ND = 0
SW-1
(03/28/21)
8.00
SW-1
(04/24/21)
13.0
SW-1
(05/28/22)
21.4
SW-1
(05/24/21)
29.0
Knee in curve

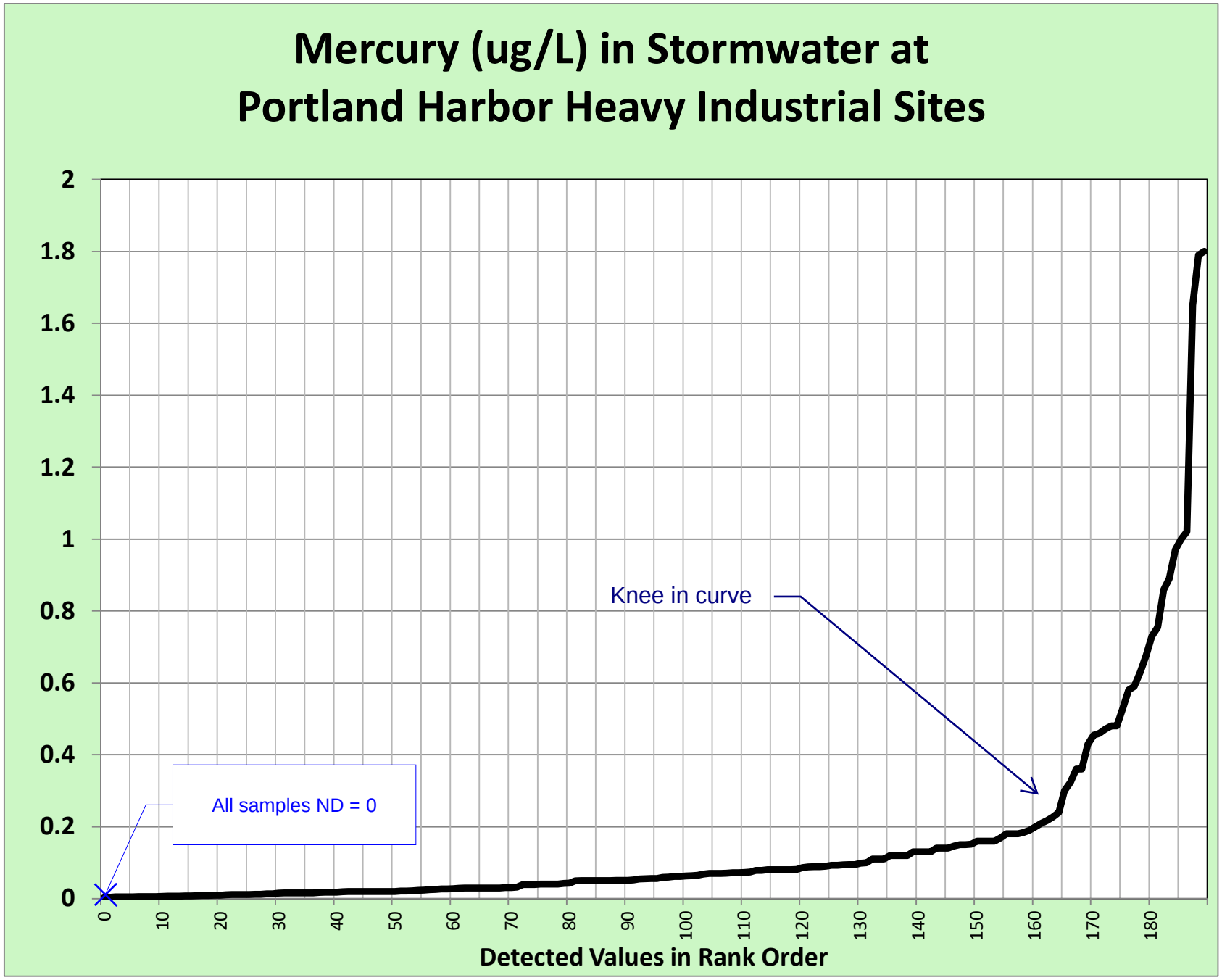

Zinc (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800
Detected Values in Rank Order
Knee in curve
SW-1 (03/28/21) 45.1
SW-1 (03/27/24) 52.7
SW-1 (05/28/22) 72.9
SW-1 (03/18/21) 79.5
SW-1 (05/24/21) 104
SW-1 (04/24/21) 140


Arsenic (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
10
9
8
7
6
5
4
3
2
1
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
Detected Values in Rank Order
Knee in curve
SW-2
(03/27/24)
ND = 0
SW-2
(03/28/21)
0.190
SW-2
(03/18/21)
0.239
SW-2
(05/28/22)
0.386
SW-2
(05/24/21)
0.566
SW-2
(04/24/21)
1.14

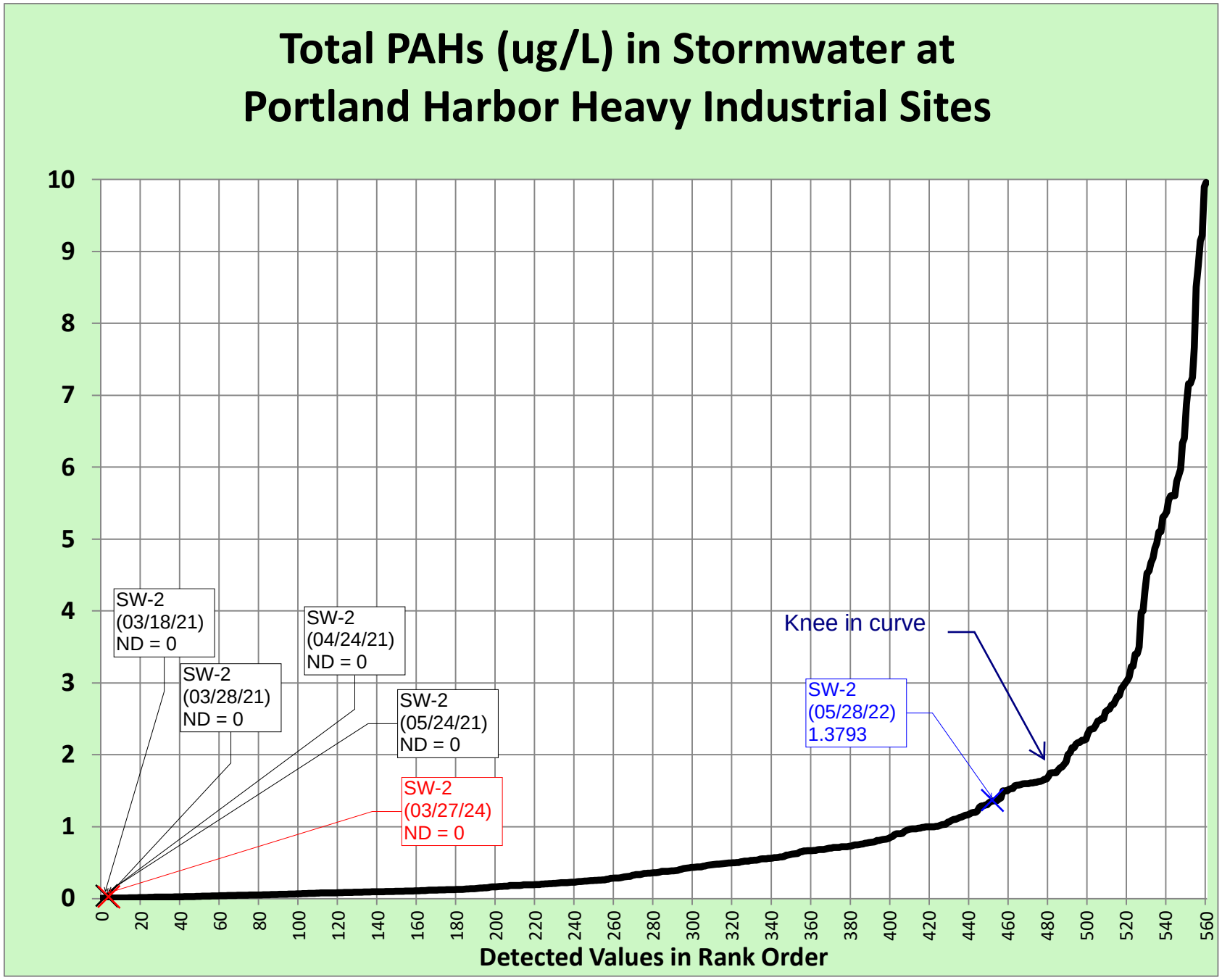

Bis(2-Ethylhexyl)phthalate in Stormwater at Portland Harbor Heavy Industrial Sites (ug/L)
20
18
16
14
12
10
8
6
4
2
0
All samples ND = 0
Knee in curve
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
Detected Values in Rank Order


Cadmium (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
Detected Values in Rank Order
Knee in curve
SW-2 (03/28/21) 0.0408
SW-2 (05/28/22) 0.0534
SW-2 (03/18/21) 0.0683
SW-2 (05/24/21) 0.130
SW-2 (04/24/21) 0.280
SW-2 (03/27/24) ND = 0

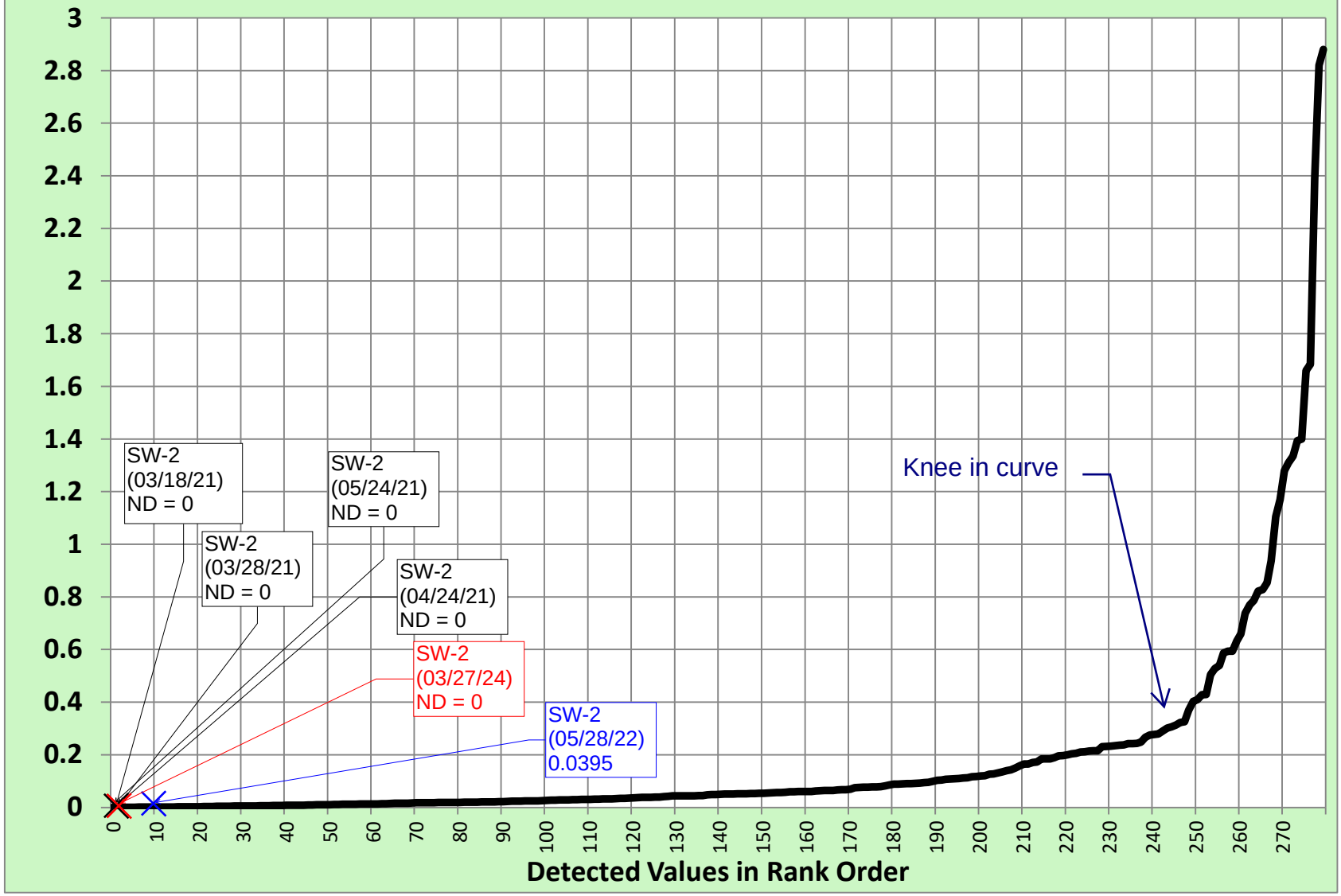

Chromium (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
40
35
30
25
20
15
10
5
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
Detected Values in Rank Order
SW-2
(03/18/21)
ND = 0
SW-2
(03/28/21)
ND = 0
SW-2
(03/27/24)
ND = 0
SW-2
(05/28/22)
1.60
SW-2
(04/24/21)
2.24
SW-2
(05/24/21)
2.64
Knee in curve


Mercury (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Knee in curve
All samples ND = 0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
Detected Values in Rank Order

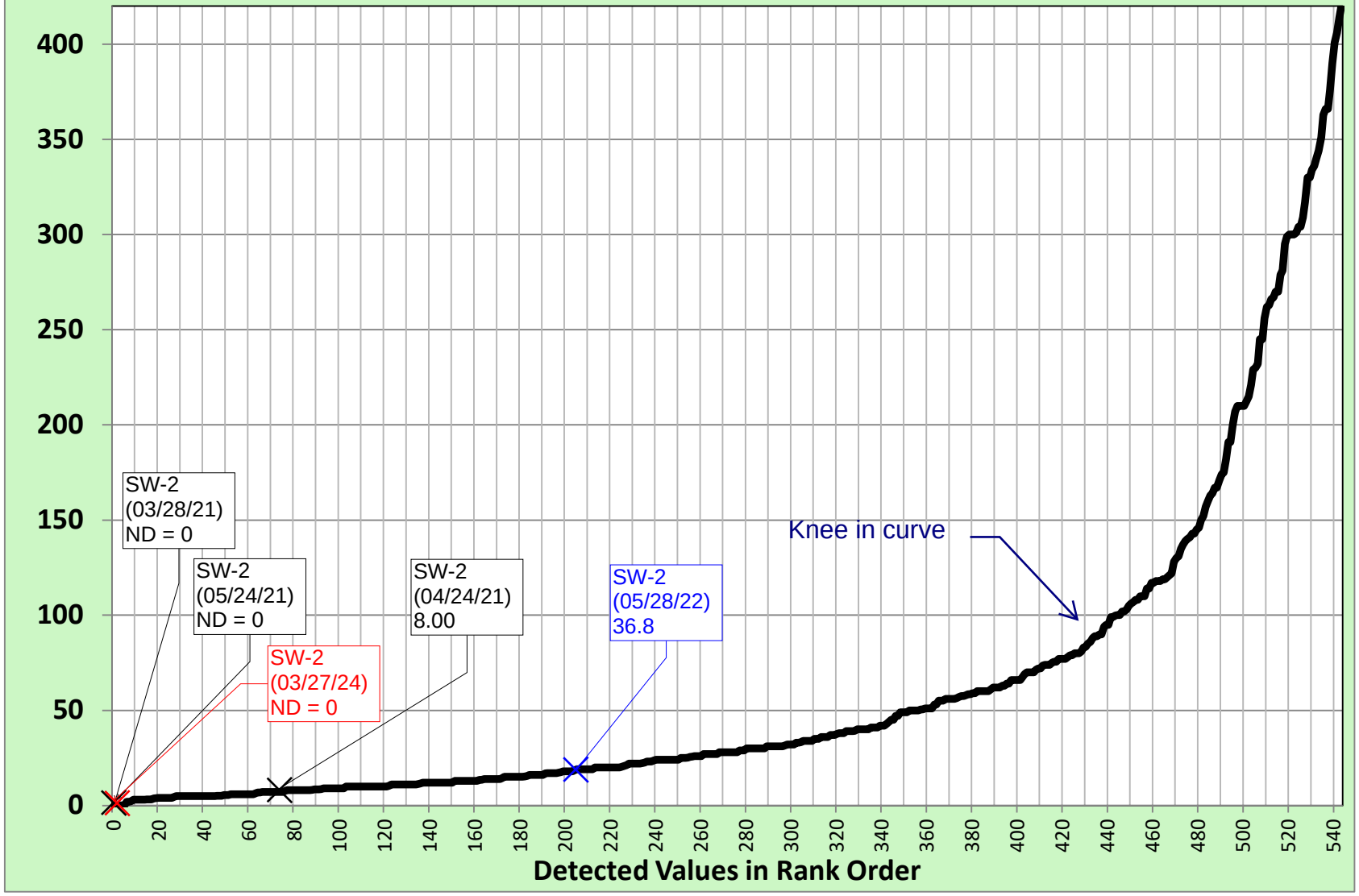
Total PAHs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites

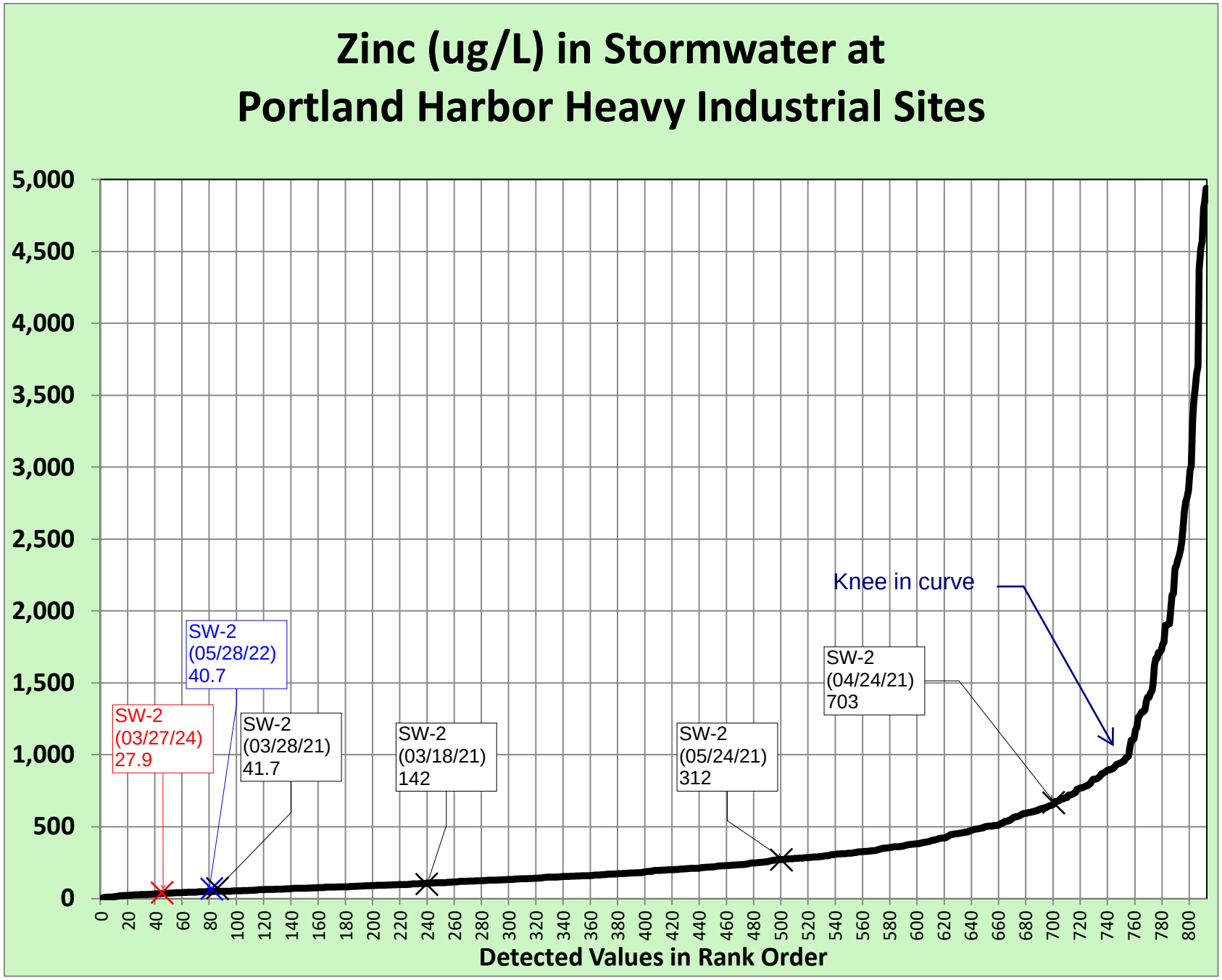


Total PCBs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



TSS (mg/L) in Stormwater at Portland Harbor Heavy Industrial Sites




Zinc (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
680
700
720
740
760
780
800
Detected Values in Rank Order
Knee in curve
SW-2
(05/28/22)
40.7
SW-2
(03/27/24)
27.9
SW-2
(03/28/21)
41.7
SW-2
(03/18/21)
142
SW-2
(05/24/21)
312
SW-2
(04/24/21)
703