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

Date: **September 3, 2020**

To: **Ben Leake, US EPA**

Through: **Paul Seidel, DEQ Cleanup Section Manager**

From: **Alex Liverman, Portland Harbor Stormwater Coordinator**

Subject: **Source Control Decision Amendment**
BDC Properties LLC (former Calbag Metals – Front St)
ECSI #2454

1.0 Introduction

This memorandum presents the basis for the Oregon Department of Environmental Quality amendment to the source control decision for the BDC (former Calbag Front) site, located at 4927 NW Front Avenue, Portland, Oregon. DEQ issued a Source Control Decision on the stormwater pathway to Portland Harbor and No Further Action determination for the Calbag Metals site at this location on November 3, 2005. DEQ concluded at that time that the site was likely an historical source of metals, PCBs and phthalates via site stormwater discharges to the Willamette River. Following investigations, source control measures implemented included: removal in 2005 of approximately 3.2 tons of accumulated solids from on-site stormwater catch basins and pipes and approximately 0.8 ton of accumulated solids from City of Portland stormwater conveyance pipes adjacent to the site; repaving of the entire site; and placement of filter fabric into catch basins for improvement in on-going stormwater discharges from the site.

The City of Portland collected stormwater solids samples using inline sediment traps deployed in the 21-inch line down-pipe of the manhole on the subject site. Traps were deployed from March through June of 2007 and again from November 2007 through May 2008. Analysis of the samples showed PCBs associated with solids discharged in stormwater from the site over these three and six month periods at concentrations (630 ug/kg Aroclors in 2007 and 2,360 ug/kg congeners in 2008) that exceeded the Portland Harbor Joint Source Control Strategy screening level value for PCBs in stormwater solids (0.39 ug/kg). DEQ determined that sources had not, therefore, been sufficiently controlled and negotiated a new Voluntary Cleanup Agreement for stormwater source control with the new site owner, BDC Properties LLC, which was executed on May 27, 2010.

Additional source tracing and evaluations of the stormwater pathway at the site were conducted under the 2010 agreement, in accordance with the 2005 *EPA/DEQ Portland Harbor Joint Source Control Strategy,* also known as the JSCS.

DEQ concludes from review of the 2017 Stormwater Source Control Evaluation Report, 2018 Stormwater Source Control Performance Monitoring Technical Memorandum, 2019 NPDES 1200Z Industrial Stormwater general permit data and other documents noted in the references section of this memorandum, that upland sources of contamination from current and past operations have been controlled, such that the stormwater pathway from the site does not pose a significant current or future threat to the Willamette River.

2.0 Site Description and History

BDC purchased the site in 2006. The history of the site prior to this transaction included metals recycling, as detailed in the 2005 DEQ Source Control Decision of No Further Action.

As shown on Figures 1 & 2, the site consists of a 4.71-acre triangular parcel at 4927 NW Front Avenue at the intersection of NW Kittridge Avenue. The parcel is relatively flat and surrounded by the Portland Terminal Railroad yard to the south, warehousing across Kittridge to the west, Lakeside Industries asphalt manufacturing and distribution facility to the north and a small Gunderson warehouse and additional railroad right-of-way to the east.

The site is positioned approximately ¼ of a mile from the Willamette River and consists of approximately 95 percent impervious pavement and roofs with approximately five percent pervious soil and rock along a railroad spur that enters the property at the approximate midpoint of the southern site boundary and heads west. There are three buildings on the property, currently occupied by tenants (Pacific Power Vac, Inc. (PPV), Ruan Trucking and Hercules Towing) and used for offices, warehousing and industrial operations. The site also has a truck scale, parking areas and outside storage areas (both covered and uncovered).

3.0 Regulatory History

As noted in the 2006 source control decision, under previous ownership and operations, the site was first regulated in 1975 under an NPDES waste water discharge permit for metals recovery operations. An NPDES 1200Z Industrial Stormwater general permit covered the site from 1993 through 2003. Following purchase of the site by BDC in 2006, tenant operations did not necessitate coverage under the 1200Z permit and PPV maintained a No Exposure Certification until 2019. On October 8, 2018, BDC received a letter from the City of Portland, as DEQ's agent, which confirmed that industrial activities conducted by tenants at the site were exposed to stormwater and required BDC to apply for coverage under the 2017 NPDES 1200Z Industrial Stormwater general permit. On April 16, 2019, BDC received notification of registration under the 1200Z permit covering all tenants and operations at the site.

4.0 Source Control Evaluation

Because the site is located within the uplands draining to the Portland Harbor Superfund study area, upland source control investigations were guided by the 2005 EPA/DEQ Joint Source Control Strategy. The objective of a source control evaluation is to determine whether existing and potential sources of contamination at the site have been identified and if additional characterization or source control measures are needed. Due to the lack of any banks or frontage on the Willamette River and no known groundwater issues under the site, DEQ determined that erosion of contaminants from riverbanks, overwater discharges and groundwater are not complete pathways. These pathways were, therefore, excluded and are not discussed further in this report.

DEQ determined that stormwater in conveyance infrastructure discharging to Portland Harbor is a complete contaminant transport pathway. The site stormwater investigation was guided by DEQ's 2009 *Guidance for Evaluating the Stormwater Pathway at Upland Sites*, which was updated in 2010 and 2015 and the remainder of this decision document discusses evaluation of this pathway.

4.1 Contaminants of Potential Concern

Based on the City's stormwater solids sampling in 2007 and 2008, PCBs were the primary focus for additional evaluation at the site. However, stormwater investigations also evaluated additional

contaminants of potential concern for Portland Harbor, which are included in the following list of contaminants evaluated at the site since 2010:

- Polychlorinated biphenyls (PCBs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Metals (arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc)
- Total suspended solids (TSS)

Characterization of site stormwater did not test for the following Portland Harbor ROD Table 17 contaminants with surface water cleanup levels: Bis-2(ethylhexyl)phthalate; Tributyl tin; 2,3,7,8-TCDD (TEQ); Aldrin; Chlordanes; DDx; Mono-(3-carboxypropyl) phthalate (MCPP); Ethylbenzene; Hexachlorobenzene; and Pentachlorophenol. With the exception of Bis-2(ethylhexyl)phthalate, which was confirmed in the 2006 source control decision to discharge a concentrations near non-detect, none of the contaminants on this list were expected to have been used or released at the site.

4.3 Stormwater Source Control Investigation

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.

To make these findings, a lines of evidence evaluation is conducted. Commonly, the first line of evidence is comparison of stormwater solids and stormwater sampling data to EPA's 2017 Portland Harbor Record of Decision Table 17 cleanup levels for riverbank soil/sediment and surface water. Or, for contaminants without PH CULs, the JSCS Table 3-1 screening level values for upland soil/stormwater sediment and water are used. Sampling results that exceed the applicable PH CULs or JSCS SLVs are compared to charts from DEQ's Guidance in *Appendix E: Tools for Evaluating Stormwater Data*, for contaminants for which curves are available. This tool was created from contaminant concentration data from many of the stormwater and stormwater solids samples collected at Portland Harbor-area heavy industrial sites. This data was used to create a series of charts that plot rank-order samples against contaminant concentrations and are used to identify contaminant concentrations in samples that are atypically elevated. Concentrations falling within the upper/steeper portion of the curves 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 curves suggest that stormwater is not being unusually impacted by contaminants at the site, and while concentrations may exceed the PH CULs or JSCS SLVs, they are within the range found in stormwater or solids from active industrial sites in Portland Harbor.

4.3.1 Stormwater Configuration

As shown on Figure 2, the site stormwater system collects runoff from paved areas into 10 catch basins spread throughout the site and from the roofs through downspouts mostly connected to underground

laterals to the stormwater conveyance piping. Stormwater from downspouts that discharge to the ground flows to catch basins on the site, with the exception of roof drains numbered 13 and 14 on building 1 and 17 on building 3, which infiltrate into the railroad ballast along the northeast boundary. Two trench drains located inside the easternmost building 3 were plugged in 2005 and confirmed in 2016 to be effectively decommissioned. Stormwater from roof drains and catch basins is conveyed to a City of Portland manhole at the northwestern corner of the site, from where it flows to City of Portland outfall 19 into the Willamette River.

4.3.2 Stormwater Pathway Investigation and Evaluation

Sampling activities since 2010 included two rounds of catch basin solids sampling for source tracing purposes, several rounds of stormwater sampling to gage effectiveness of source control measures implementation, and collection of erodible soil at two areas where run-on of stormwater from the adjacent railroad area was suspected, but not confirmed.

4.3.2.1 Catch Basin Solids Sampling

As shown on Table 1, results from catch basin solids sampling in 2013 and 2014 (before and after catch basin and conveyance line cleanout) indicated contaminant sources remained on the site for PCBs, PAHs and several metals. Although stormwater solids data were not presented on DEQ's rank-order curves, DEQ compared data from contaminants with concentrations that exceeded PH CULs or JSCS SLVs, as reported below. Detected concentrations of PCBs exceeded the JSCS SLV of 0.39 ug/kg and ranged from 100 ug/kg to 790 ug/kg, with most above the flat portion of the DEQ rank-order curve. Detected concentrations of several individual PAHs exceeded CULs/SLVs and total detected PAHs ranged from 4,398 ug/kg to 74,180 ug/kg, with a handful plotting above the rank-order curve. Arsenic concentrations ranged from 4,200 ug/kg to 16,400 ug/kg, with half exceeding the SLV of 7,000 ug/kg and one plotting within the knee of the curve. Cadmium concentrations ranged from 1,000 ug/kg to 6,600 ug/kg, with one over the SLV of 4,980 ug/kg and above the flat portion of the curve. Chromium concentrations ranged from 67,400 ug/kg to 301,000 ug/kg, with about half exceeding the SLV of 111,000 ug/kg, but none over the flat portion of the curve. Copper concentrations ranged from 190,000 ug/kg to 344,000 ug/kg, which all exceeded the SLV of 149,000 ug/kg, but none were above the flat portion of the rank-order curve. Lead concentrations ranged from 53,700 ug/kg to 247,000 ug/kg, all of which exceeded the SLV of 17,000 ug/kg, but none above the flat portion of the rank-order curve. Mercury concentrations ranged from 56 ug/kg to 251 ug/kg, all but one exceeding the SLV of 70 ug/kg, but none above the flat portion of the rank-order curve. Nickel concentrations ranged from 44,800 ug/kg to 279,000 ug/kg, with all but one exceeding the SLV of 48,600 ug/kg and about half above the flat portion of the rank-order curve. Zinc concentrations ranged from 661,000 ug/kg to 2,230,000 ug/kg, which all exceeded the SLV of 459,000 ug/kg, with two within the knee of the rank-order curve. Although solids accumulated in catch basins and lines were removed from the site and not discharged through stormwater lines, these results indicated that additional source controls measures and source tracing were needed at the site for PCBs and PAHs.

4.3.2.2 Stormwater Source Control Measures

Several additional source control measures were implemented since DEQ issued the 2005 Source Control Decision. These include:

- 2010 – Cleaning of catch basins and on-site stormwater conveyance lines (last cleaned in 2005 prior to paving of the entire site)
- 2013 - Replacement/coating of the roof of the main building on the site (currently occupied by PPV);
- 2013 - Cleaning of catch basins and on-site stormwater conveyance lines;
- 2015 – "Adsorb-it" filters installed in site catch basins;
- 2016 – Roof upgrade on the southeastern most building on the site;

- 2016 – Pavement cleaning in truck parking areas, roof drains inspected/repaired, monthly catch basin cleaning instituted, wattles placed along southern fence line with railroad right-of-way and around catch basins;
- 2019 – Registration under NPDES 1200Z Industrial Stormwater general permit with source control measures and management practices specified in the site's stormwater pollution control plan, required monitoring and corrective actions for exceedances.

4.3.2.3 Stormwater Sampling

Stormwater sampling in accordance with DEQ's Guidance for Evaluating the Stormwater Pathway at Upland Sites (2009), began in 2014 following implementation of source control measures in 2013. Additional sampling was conducted in 2015 and 2017-18 following implementation of additional source control measures. The focus for source control measure implementation was in targeting PCBs and PAHs. As shown in Table 2 and Figures 3 through 8, PCBs, PAHs and some other analytes measured in stormwater exceeded PH surface water CULs and were compared to the rank-order curves. Concentrations of PCBs ranged from 0.019 ug/L to 0.144 ug/L, which all exceed the CUL of 0.0000064 ug/L, but are all below the flat portion of the DEQ rank-order curve. When detected, some individual PAHs exceeded CULs or SLVs, but total PAHs were all below the flat potion of the rank-order curve, with the exception of one sample within the knee of the curve. Method detection limits for arsenic were typically higher than the CUL of 0.18 ug/L, but the CUL and the three samples with detected concentrations are all below the flat portion of the rank-order curve. Copper concentrations ranged from 8.6 ug/L to 100 ug/L, all of which exceeded the CUL of 2.74 ug/L, but all were below the flat portion of the rank-order curve, with the exception of two samples within the knee of the curve. Zinc concentrations ranged from 106 ug/L to 772 ug/L, all of which exceeded the CUL of 36.5 ug/L and all were at or below the flat portion of the rank-order curve. Although TSS was not analyzed in all samples, detected TSS concentrations ranged from 5 mg/L to 57.5 mg/L, with all detections below the flat portion of the rank-order curve. Data collected in 2019 in compliance with the 1200Z permit indicates similar results as the 2014-2018 data in Table 2 and Figures 3 through 8, for PCBs, PAHs, copper, zinc and TSS. Although this collective data does not suggest that sources remain uncontrolled at the site, all of the contaminants of potential concern for the site will continue to be monitored under the 1200Z permit, with corrective actions required for benchmark and reference concentration exceedances.

4.3.4 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 weight-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 stormwater contaminant sources were identified and characterized.

2. Magnitude of stormwater, and stormwater solids exceedances at each sampling point and proximity of sampling point to the river – Approximately 95% of the stormwater generated on the 4.7 acre site is conveyed to a single discharge and monitoring point, located approximately ¼ mile from the discharge point through City outfall 19 into the Willamette River. While catch basin solids samples in 2013 and 2014 showed exceedances of SLVs for PCBs, PAHs and some metals and PCBs and PAHs results plotted above the flat portion of the rank order curves, catch basins have been cleaned out monthly since 2016 and additional control measures implemented under the 1200Z permit minimize the potential for solids to collect in catch basins or be transported off site in stormwater discharges. While stormwater samples have shown exceedances of surface water CULs for PCBs, individual PAHs, arsenic, copper and zinc, all samples of these contaminants and TSS have been at or below the knee of the rank-order curves. These typical industrial concentrations of contaminants will continue

to be monitored in stormwater discharges from the site under the 1200Z permit, which also mandates implementation of the control measures identified in the site's stormwater pollution control plan and corrective actions for any exceedances of permit benchmarks and reference concentrations.

3. Regional background soil concentrations of naturally occurring chemicals for evaluating stormwater solids – Analytical results from the 2014 catch basin solids samples showed the following metals exceeded JSCS SLVs and also exceeded background soils concentrations in the Portland Basin: about half of the samples exceeded the arsenic background of 8,800 ug/kg; all copper samples exceeded the background of 34,000 ug/kg; and all the zinc samples exceeded the background of 180,000 ug/kg. However, none of these contaminant concentrations plotted above the knee of the rank order curves and catch basins have been cleaned out monthly since 2016 and additional control measures implemented under the 1200Z permit minimize the potential for solids to collect in catch basins or be transported off site in stormwater discharges.

4. Presence of bioaccumulative chemicals – While arsenic, PCBs and two individual PAHs (fluoranthene and pyrene) have DEQ guidance levels associated with risk to wildlife and humans through waterway sediment exposure, stormwater and catch basins solids are not relevant pathways for bioaccumulative risk above those levels. Therefore, this line of evidence is not applicable at this site.

5. Site hydrology including site conditions, size of drainage and location and estimated size of discharge Stormwater discharges are generated from the 95% impervious surfaces on the 4.7 acre site. While the site is located within ¼ mile of the discharge point to the river, the volume of stormwater generated is small in comparison to the sites in the surrounding area. Site conditions are regulated under the 1200Z permit to reduce exposure of stormwater to contaminants and apply stormwater control measures and corrective actions to maintain low concentrations of contaminants discharged in stormwater from the site.

6. Stormwater system design and management – As described in Section 4.3, stormwater generated at the site is largely captured and directed through control measures prior to conveyance to the City of Portland's infrastructure and eventually discharges to the Willamette River through City outfall 19. Multiple site-wide source control measures have been implemented at the site to improve stormwater quality and on-going control measures and management practices are required in compliance with the 1200Z permit, which also requires monitoring and corrective actions for any exceedances of permit benchmarks of reference concentrations.

7. Estimate of potential contaminant loading to the river – The limited volumes and low concentrations of contaminants in stormwater discharged from the site present a minimal potential load to the river.

In summary, these lines of evidence indicate that the stormwater pathway from the site to Portland Harbor is controlled and does not pose a threat to sediment recontamination or risk to in-water receptors, so no additional controls are warranted.

4.4 Source Control Decision

Based on review of the file, DEQ concludes that this property does not appear to be a current or reasonably likely future source of contamination to the Willamette River, provided that effective stormwater control measures remain in place and are routinely maintained, monitored and improved as required by the 1200Z permit, including the implementation of Stormwater Pollution Control Plan, the

required Narrative Technology Based Effluent Limits and the implementation of Corrective Actions, as required. BDC must ensure that tenants operating onsite are meeting permit requirements at all times.

5.0 References

City of Portland. 2009. Technical Memorandum No. OF-19-2 to Karen Tarnow, DEQ, on City of Portland Outfall Basin 19, Inline Solids Sampling at the Former Calbag Metals Site. April 16, 2009.

DEQ. 2005. Memorandum to Kristine Koch, US EPA, on Source Control Decision and No Further Action Determination for Calbag Metals, 4927 NW Front Avenue, Portland Oregon, ECSI # 2454. November 3, 2005.

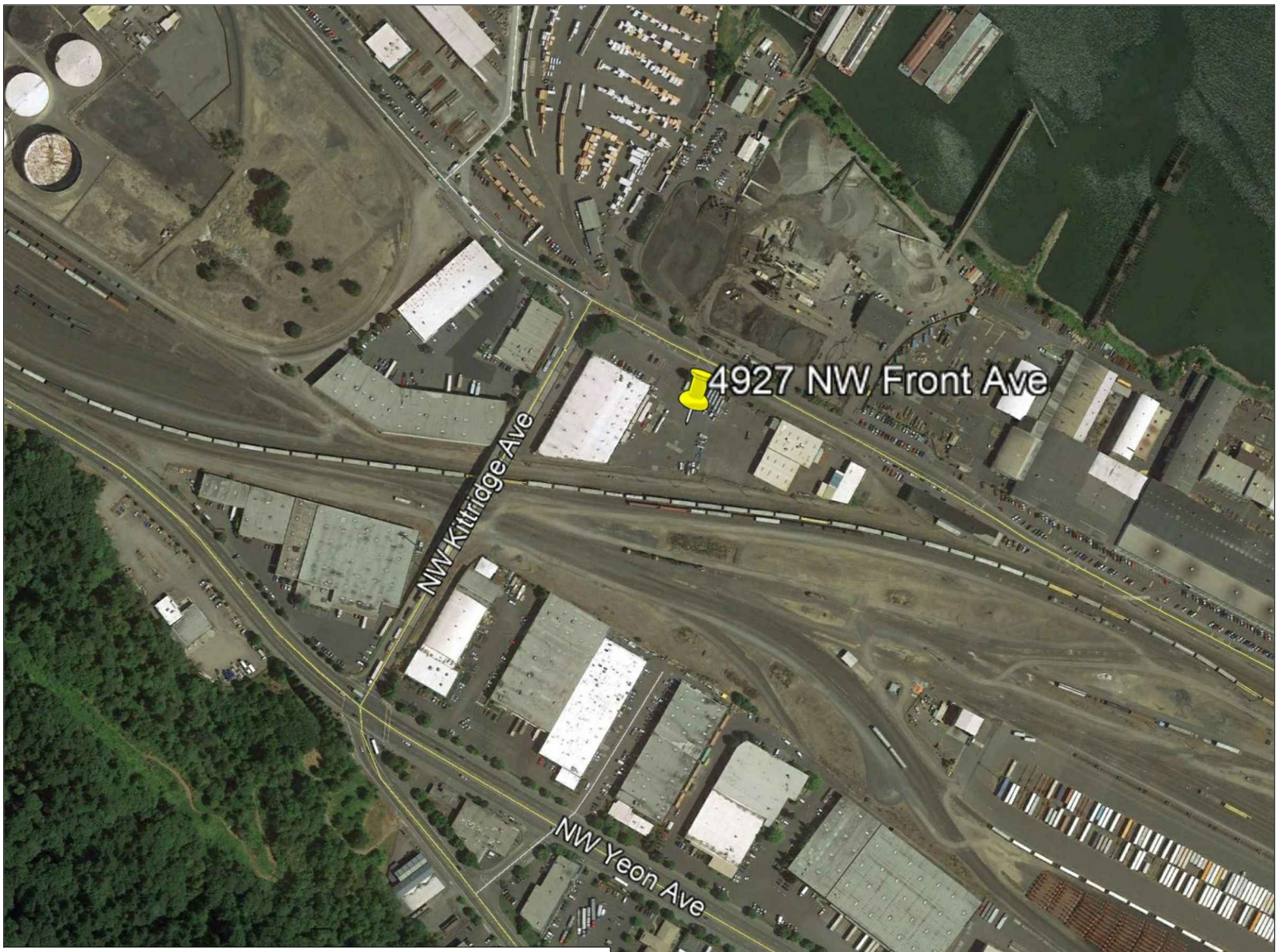
DEQ. 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceAssessingBioaccumulative.pdf. January 2007 (updated April 2007).

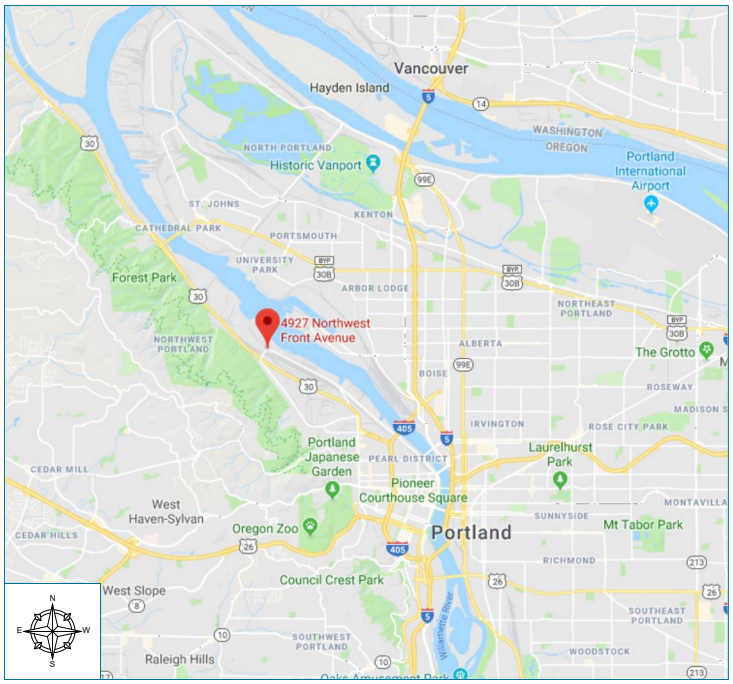
DEQ. 2009 (updated 2010 and 2015). Guidance for Evaluating the Stormwater Pathway at Upland Sites. http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm.

DEQ. 2018. Fact Sheet – Background Levels of Metals in Soils for Cleanups. https://www.oregon.gov/deq/FilterDocs/cu-bkgrmetals.pdf. January 25, 2018.

Golder Associates, Inc. 2017. Stormwater Source Control Evaluation Report – BDC Properties, LLC. March 2017.

Golder Associates, Inc. 2018. Technical Memorandum – Stormwater Source Control Performance Monitoring Evaluation. March 9, 2018.





1 mi

~200 ft

VICINITY MAPS AS NOTED 1/1

FIGURE	REVISIONS		
1	Rev	Date	Description
PROJECT NO. 0266			

BDC PROPERTIES LLC
4927 NW FRONT AVE, PORTLAND, OR 97210
SWPCP - FIGURE 1: VICINITY MAPS

Designed:	N/A
Drawn:	KRK
Checked:	DS
Date:	2/25/19
Scale:	AS NOTED

AQUARIUS environmental
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File: 4927 NW Front_SWPCP_012019.dwg

NOTES:

1. Total Drainage Basin 1 (DB-1) area = ~4.7 acres
2. All CBs are equipped with filter inserts and surrounding wattles unless otherwise indicated.
3. All surfaces within property boundary are impervious pavement or rooftop unless otherwise indicated (e.g., unpaved gravel)

SPILL KIT CONTENTS (min):

- Granular absorbent
- Booms
- Absorbent pads
- CB storm drain covers

SK

See Map for SK locations.

SD MANHOLE (MH1)/DISCHARGE POINT 001 (DP001)
Stormwater Discharge & Monitoring (Sample) Point (SP001)

CITY STORM SEWER
Flowing northeast under NW Kittridge Ave.

WATTLES (along west boundary, as needed)

ASPHALT BERM (to prevent sheetflow from storage area). Berm restoration in-progress.

METAL RECYCLING BINS (under cover)

TOTE, DRUM, EQUIPMENT STORAGE (under bridge)

NW KITTEREDGE AVE (bridge)

PBOT (Owner - adjacent property)

MAIN TRUCK ACCESS POINT

NW FRONT AVE

PPV TRUCK EXIT

CB9

CB8

DEF TANK (inside bldg)

PPV (Tenant 1) 3.1 ac

MODULAR OFFICE

CURRENT TRUCK SCALE

DEF TANK

CB7

MAIN BLDG (PPV) ~48,000 sq ft

CATCH BASIN COVER

(FORMER) TRUCK SCALE

CB10

PPV TRUCK UNLOADING ENTRANCE

CB3

WASH AREA (not discharged to SD system)

CB4

WATTLES

VEHICLE PARKING

PROPANE TANK

POTENTIAL RUN-ON AREA

WATTLES (along south boundary, as needed)

PORTLAND TERMINAL RAILROAD COMPANY

APPROXIMATE PPV-RUAN LEASE BOUNDARY

TRUCK PARKING & TANK STORAGE

PPV leased area
Ruan leased area

TRASH/ RECYCLING (dumpsters)

CB6

NEW MOTOR OIL, USED MOTOR OIL, & HYDRAULIC OIL (under cover)

BLDG 1 (Ruan) ~9,925 sq ft

APPROXIMATE RUAN-HERCULES LEASE BOUNDARY

RUAN (Tenant 2) 1.2 ac

CATCH BASIN COVER

CB2

BLDG 2 (Ruan) ~7,900 sq ft

RUAN TRUCK PARKING

Ruan-leased area
Hercules-leased area

HERCULES (Tenant 3) 0.44 ac

CB1

CB5

HERCULES PARKING & STORAGE

BLDG 3 (Hercules) ~7,400 sq ft

Trench drains (in building, decommissioned, & not exposed to stormwater)

WATTLES (along south boundary, as needed)

PORTLAND TERMINAL RAILROAD COMPANY

EXISTING (E) STORMWATER CONDITIONS PLAN 1/2
SCALE: 1" = 60'

KEY

- BUILDING
- DRAINAGE BASIN 1
- PROPERTY BOUNDARY
- RAILROAD TRACKS
- RD (to SD pipe)
- RD (to ground level)
- SD CB
- SD GRAVITY PIPE (Private)
- SD GRAVITY PIPE (Public)
- SD MH (Private)
- SS GRAVITY PIPE (Private)
- SS MH (Private)
- TENANT 1: PPV
- TENANT 2: RUAN
- TENANT 3: HERCULES
- UNPAVED SURFACE (gravel)

N W E S

0' 30' 60'
MAP SCALE: 1" = 60'

ABBREVIATIONS

CB	CATCH BASIN
DB	DRAINAGE BASIN
FM	FORCE MAIN
MH	MANHOLE
RD	ROOF DRAIN
SD	STORM DRAIN
SS	SANITARY SEWER

SITE ADDRESS:

BDC PROPERTIES LLC
4927 NW FRONT AVENUE
PORTLAND, OR 97210

GENERAL NOTES & DISCLAIMER

1. STORM SYSTEM, PROPERTY LINE(S) AND SURFACE DRAINAGE FEATURES ARE BASED ON RECORDS RESEARCH OF AVAILABLE EXISTING DATA AND MAPS PROVIDED BY BDC PROPERTIES LLC AND WWW.PORTLANDMAPS.COM.
2. AQUARIUS ENVIRONMENTAL CLAIMS NO RESPONSIBILITY FOR INACCURACIES THAT MAY BECOME APPARENT IN THE FUTURE. WHILE THIS INFORMATION IS DEEMED RELIABLE, NO GUARANTEE OF THE ACCURACY OF THIS INFORMATION IS MADE.
3. REFERENCES/VICINITY MAPS: GOOGLE EARTH IMAGES & GOOGLE MAPS.

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 2/25/19
DWN BY KRK
DES BY DS
CHK BY
APP BY

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BDC PROPERTIES LLC
4927 NW FRONT AVE
PORTLAND, OREGON 97210

STORMWATER POLLUTION CONTROL PLAN (SWPCP)
SWPCP SITE MAP

FIGURE NO. 2

PROJECT NO. 0266

Table 1: Catch Basin Solids Analytical Results

Sample Location	Polychlorinated Biphenyls (µg/kg)																					
	Aroclor 1016		Aroclor 1221		Aroclor 1232		Aroclor 1242		Aroclor 1248		Aroclor 1254		Aroclor 1260		Aroclor 1262		Aroclor 1268		Total PCBs	
JSCS SLVs	530		NS		NS		NS		1,500		300		200		NS		NS		0.39	
Date	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014
CB-1	NA	8.5 U	NA	8.5 U	NA	8.5 U	NA	23 J	NA	8.5 U	NA	100	NA	78 P	NA	8.5 U	NA	29 J	NA	230
CB-2	NA	8.5 U	NA	8.5 U	NA	8.5 U	NA	41 J	NA	8.5 U	NA	200	NA	150	NA	8.5 U	NA	44 J	NA	435
CB-3	120 U	8.7 U	240 U	8.7 U	120 U	8.7 U	120 U	53 J	120 U	8.7 U	210	250	12 U	57 U	120 U	48 U	120 U	33 U	210	303
CB-4	99 U	10 U	200 U	10 U	99 U	10 U	99 U	41 J	99 U	10 U	210	170	99 U	30 U	99 U	23 U	99 U	27 U	210	211
CB-5	NA	8.5 U	NA	8.5 U	NA	8.5 U	NA	30 J	NA	8.5 U	NA	190	NA	100	NA	8.5 U	NA	31 J	NA	351
CB-6	NA	9.7 U	NA	9.7 U	NA	9.7 U	NA	110 J	NA	9.7 U	NA	250	NA	140	NA	9.7 U	NA	41 J	NA	541
CB-7	80 U	8.6 U	160 U	8.6 U	80 U	8.6 U	80 U	27 J	80 U	8.6 U	100	190	80 U	54 J	80 U	8.6 U	80 U	14 U	100	271
CB-8	140 U	12 U	280 U	12 U	140 U	12 U	140 U	72 J	150 U	12 U	790	530	280 U	100 J	170 U	12 U	140 U	19 U	790	702
CB-9	130 U	14 U	260 U	14 U	130 U	14 U	130 U	49 J	130 U	14 U	540	390	180 U	90 J	130 U	14 U	130 U	19 U	540	529
CB-10	110 U	8.5 U	220 U	8.5 U	110 U	8.5 U	110 U	27 J	110 U	8.5 U	380	200	140	66 J	110 U	8.5 U	110 U	8.5 U	520	293

Sample Location	Polycyclic Aromatic Hydrocarbons (µg/kg)																			
	Naphthalene		2-Methylnaphthalene		Acenaphthylene		Acenaphthene		Fluorene		Phenanthrene		Anthracene		Fluoranthene		Pyrene		Benz(a)anthracene	
JSCS SLV	561		200		200		300		536		1,170		845		2,230		1,520		1,050	
Date	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014
Composite 1	490	270	2,300	1,100	140	41	3,000	1,300	2,100	810	11,000	4,300	2,300	770	9,900	3,900	8,600	2,800	3,800	900
Composite 2	400	380	1,800	1,800	110	72	2,700	2,700	1,900	1,500	9,800	7,900	1,700	1,500	8,600	6,900	7,100	5,600	3,200	2,200
Composite 2 Duplicate	NA	600	NA	2,700	NA	120	NA	4,400	NA	3,000	NA	15,000	NA	3,100	NA	12,000	NA	9,700	NA	3,900
Composite 3	520	NA	1,400	NA	80	NA	100	NA	380	NA	1,400	NA	170	NA	1,100	NA	1,800	NA	370	NA
Composite 4	120	88	120	94	27	30	40	82	75	120	600	920	66	110	660	1,000	1,000	1,700	250	300
Composite 5	100	290	85	330	26	19	35	40	82	66	780	560	72	43	660	560	1,100	880	160	150
Composite 5 Duplicate	150	NA	150	NA	43	NA	44	NA	84	NA	680	NA	68	NA	720	NA	980	NA	210	NA
CB-3	NA	130	NA	190	NA	47	NA	43	NA	130	NA	890	NA	64	NA	860	NA	1,600	NA	220
CB-4	NA	110	NA	120	NA	35	NA	48	NA	78	NA	820	NA	100	NA	1,000	NA	1,500	NA	230

Polycyclic Aromatic Hydrocarbons (µg/kg)																
Chrysene		Benzo(b)fluoranthene		Benzo(k)fluoranthene		Benzo(a)pyrene		Indeno(1,2,3-cd)pyrene		Dibenz(a,h)anthracene		Benzo(g,h,i)perylene		Total PAHs	
1,290		NS		13,000		1,450		100		1,300		300		NS	
8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014	8/8/2013	9/2/2014
3,700	1,500	4,200	1,200	1,500	460	3,100	760	2,300	560	430	120	2,000	610	60,860	21,401
3,200	3,100	4,200	3,000	1,000	1,100	2,500	2,000	2,200	1,300	440	300	2,100	1,500	52,950	42,852
NA	4,900	NA	4,900	NA	1,700	NA	3,400	NA	2,100	NA	460	NA	2,200	NA	74,180
690	NA	920	NA	4.8 U	NA	270	NA	330	NA	67	NA	1,000	NA	10,602	NA
380	500	400	490	1.8 U	120	180	320	190	220	41	65	550	720	4,701	6,879
440	320	250	330	57	100	82	160	120	160	25	40	360	350	4,434	4,398
520	NA	510	NA	4.5 U	NA	210	NA	210	NA	40	NA	540	NA	5,164	NA
NA	790	NA	420	NA	89	NA	270	NA	210	NA	61	NA	740	NA	6,754
NA	800	NA	610	NA	5 U	NA	270	NA	220	NA	48	NA	610	NA	6,604

Sample Location	Total Metals (µg/kg)											
	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc
JSCS SLV	7,000	NS	1,000	111,000	149,000	17,000	1,100,000	70	48,600	2,000	5,000	459,000
Date	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014	9/2/2014
Composite 1	11,400	439,000	1,000	265,000	544,000	53,700	725,000	56	279,000	900	400	2,230,000
Composite 2	9,200	519,000	2,000	154,000	315,000	156,000	583,000	113	97,300	800	400	2,010,000
Composite 2 Duplicate	6,900	291,000	1,480	101,000	190,000	158,000	485,000	121	62,000	800	200	1,130,000
Composite 4	4,200	246,000	1,400	107,000	212,000	69,900	315,000	111	55,500	900	600	1,110,000
Composite 5	7,700	240,000	1,320	67,400	296,000	196,000	304,000	148	44,800	900	1,100	661,000
CB-3	16,400	230,000	1,250	148,000	247,000	81,200	245,000	136	77,300	900	700	920,000
CB-4	5,600	447,000	6,660	301,000	359,000	247,000	392,000	251	174,000	800	1,000	1,580,000

Notes:

301 = exceedance of JSCS SLV

JSCS SLV = Portland Harbor Joint Source Control Strategy Screening Level Value, Table 3-1, December 2005

NA = not sampled

NS = no screening level value

µg/kg = micrograms per kilogram

U = analyte was not detected above the Method Detection Limit (MDL) shown

J = analyte was detected above the MDL, but below the Method Reporting Limit. Concentration shown is approximate.

Table 2: Stormwater Analytical Results

		Polychlorinated Biphenyls (µg/L)								
	Analyte	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
	JSCS CULs or *SLVs*	*0.96*	*0.034*	*0.034*	*0.034*	*0.034*	*0.033*	*0.034*	-	-	0.000064
Source Control Evaluation Monitoring (2014-2015)											
Manhole	**2/17/2014**	0.00096 U	0.00096 U	0.00096 U	0.01	0.00096 U	0.052	0.013	0.00096 U	0.00096 U	**0.075**
	3/28/2014	0.00096 U	0.00096 U	0.00096 U	0.003 J	0.00096 U	0.013	0.003 J	0.00096 U	0.00096 U	**0.019**
	10/31/2014	0.0065 U	0.0082 U	0.0087 U	0.0058 U	0.011 U	0.028	0.0081 U	0.005 U	0.0024 U	**0.028**
	3/25/2015	0.00096 U	0.0024 U	0.00096 U	0.0032 J	0.00096 U	0.017	0.0068	0.00096 U	0.00096 U	**0.0238**
	3/25/2015 (Duplicate)	0.00099 U	0.0025 U	0.00099 U	0.0040 J	0.00099 U	0.017	0.0053 J	0.00099 U	0.00099 U	**0.0223**
	5/13/2015	0.0073 U	0.0027 U	0.022 U	0.011 U	0.021 U	0.012	0.0037 J	0.0029 U	0.0012 U	**0.0157**
	12/7/2015	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	**0.023**
Source Control Evaluation Monitoring (2017-2018)											
Manhole	**10/19/2017**	0.00096 U	0.0024 U	0.00096 U	0.0073	0.00096 U	0.011	0.0055	0.00096 U	0.00096 U	**0.0238**
	10/19/2017 (Duplicate)	0.00096 U	0.0024 U	0.00096 U	0.0086	0.00096 U	0.014	0.0066	0.00096 U	0.00096 U	**0.0292**
	11/4/2017	0.0079 U	0.0024 U	0.011 U	0.011 U	0.0097 U	0.015	0.0081	0.00096 U	0.00096 U	**0.0231**
	11/4/2017 (Duplicate)	0.0064 U	0.0024 U	0.014 U	0.0047 U	0.025 U	0.015	0.0068	0.00096 U	0.00096 U	**0.0218**
	11/8/2017	0.00099 U	0.0025 U	0.00099 U	0.010	0.00099 U	0.034	0.016	0.00099 U	0.00099 U	**0.060**
	11/8/2017 (Duplicate)	0.011 U	0.0026 U	0.0011 U	0.015	0.0011 U	0.033	0.010	0.0011 U	0.0011 U	**0.058**
	12/19/2017	0.00098 U	0.0025 U	0.00098 U	0.012	0.00098 U	0.019 J	0.0074 J	0.00098 U	0.00098 U	**0.0384**
	12/19/17 (Duplicate)	0.00099 U	0.0025 U	0.00099 U	0.0096	0.00099 U	0.022	0.0097 J	0.00099 U	0.00099 U	**0.0413**
	1/29/2018	0.00098 U	0.0025 U	0.00098 U	0.023	0.00098 U	0.083	0.021	0.00098 U	0.00099 U	**0.127**
	1/29/18 (Duplicate)	0.00097 U	0.0025 U	0.00097 U	0.028	0.00097 U	0.094	0.022	0.00097 U	0.00097 U	**0.144**

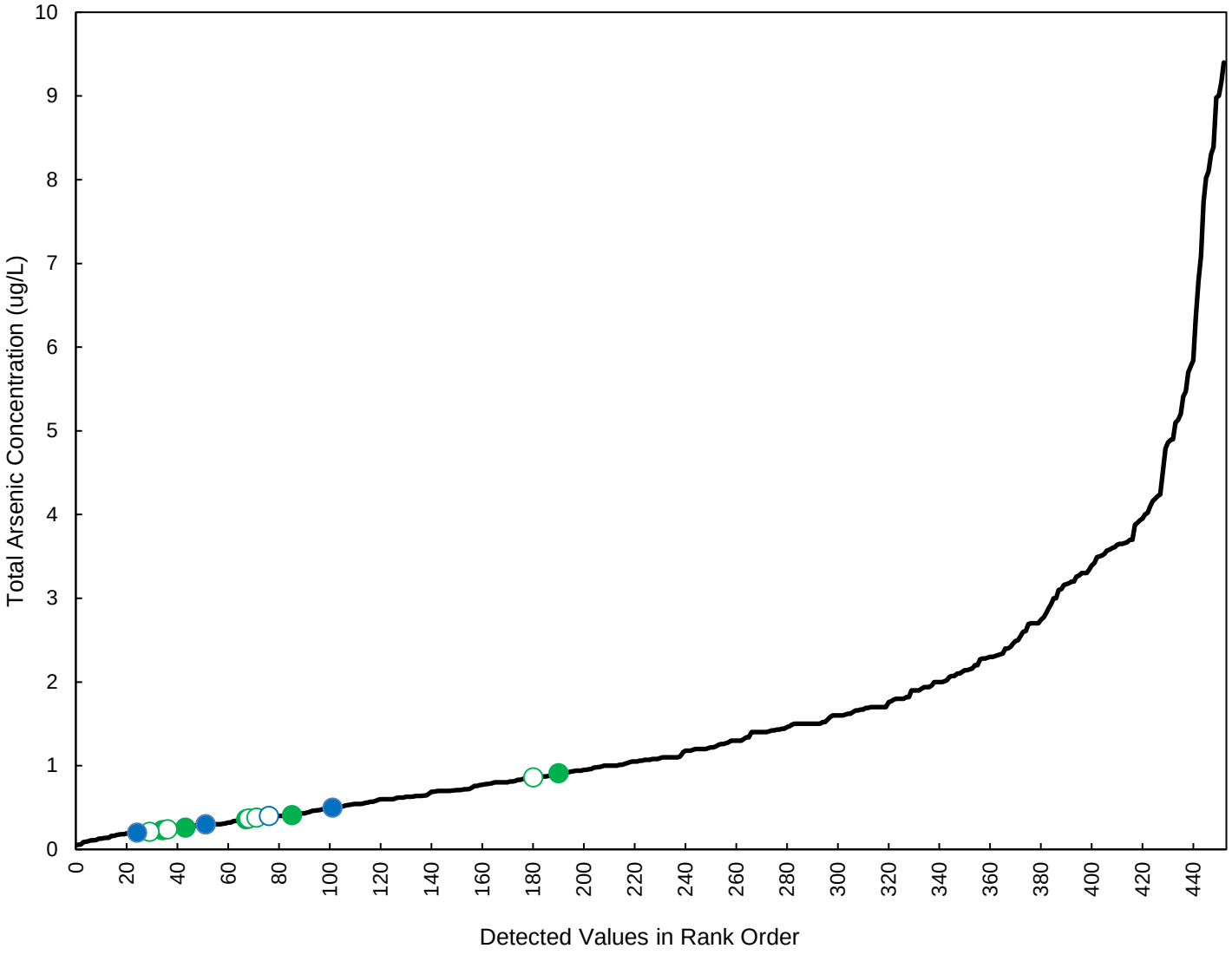
		Polycyclic Aromatic Hydrocarbons (µg/L)																		
	Analyte	Naphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a) anthracene	Chrysene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	Benzo(g,h,i) perylene	Total PAHs
	JSCS CULs or *SLVs*	12	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	0.0012	0.0013	0.0012	0.0013	0.00012	0.0012	0.00012	*0.2*	-
Source Control Evaluation Monitoring (2014-2015)																			
Manhole	2/17/2014	0.082	0.021	0.0069	0.0076	0.013	0.14	0.015	0.13	0.17	**0.052**	**0.078**	**0.11**	**0.018**	**0.03**	**0.052**	**0.01**	0.093	1.0285
	3/28/2014	0.01 J	0.0051 J	0.0034 U	0.0044 U	0.0057 J	0.025	0.0053 J	0.024	0.036	**0.0049** J	**0.017**	**0.0096** J	**0.003** U	**0.0043** U	**0.0026** U	**0.0025** U	0.013 J	0.1556
	10/31/2014	0.029	0.014 J	0.0035 U	0.0049 J	0.0093 J	0.032	0.0037 U	0.032	0.059	**0.011** J	**0.011** J	**0.019** J	**0.0031** U	**0.0044** U	**0.0027** U	**0.0026** U	0.023	0.2442
	3/25/2015	0.008 J	0.0063 J	0.088	0.0044 U	0.0057 J	0.028	0.0036 U	0.026	0.027	**0.003** J	**0.0066** J	**0.0082** J	**0.003** U	**0.0043** U	**0.0034** J	**0.0025** U	0.0093 J	0.2195
	3/25/2015 (Duplicate)	0.0084 J	0.0091 J	0.079	0.0052 J	0.0062 J	0.034	0.0039 J	0.022	0.031	**0.004** J	**0.0075** J	**0.0096** J	**0.003** U	**0.0043** U	**0.0056** J	**0.0025** U	0.014 J	0.1605
	12/7/2015	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	**0.049** U	**0.049** U	**0.049** U	**0.049** U	**0.049** U	**0.049** U	**0.049** U	0.049 U	0.049 U
Source Control Evaluation Monitoring (2017-2018)																			
Manhole	10/19/2017	0.012 J	0.0069 J	0.0034 U	0.0044 U	0.0076 J	0.05	0.0049 J	0.058	0.053	0.012 J	**0.028**	**0.021**	**0.0081** J	**0.014** J	**0.02**	**0.0085**	0.041	0.345
	10/19/2017 (Duplicate)	0.018 J	0.0089 J	0.0034 U	0.0044 U	0.006 J	0.051	0.0061 J	0.066	0.058	0.013 J	**0.019** J	**0.019** J	**0.0073** J	**0.014** J	**0.015**	**0.0028** J	0.031	0.3351
	11/4/2017	0.014 J	0.0066 J	0.005 J	0.0059 J	0.0093 J	0.042	0.0067 J	0.043	0.046	0.016 U	**0.022**	**0.021**	**0.016** U	**0.011** J	**0.016** U	**0.0042** J	0.016 U	0.2367
	11/4/2017 (Duplicate)	0.013 J	0.006 J	0.0048 J	0.0044 U	0.0069 J	0.037	0.0036 U	0.033	0.035	0.016 U	**0.019**	**0.017**	**0.016** U	**0.009** J	**0.016** U	**0.0025** U	0.016 U	0.1807
	11/8/2017	0.048	0.037	0.0034 U	0.0044 U	0.014 J	0.13	0.013 J	0.12	0.18	0.039	**0.053**	**0.071**	**0.023**	**0.042**	**0.046**	**0.0025** U	0.081	0.849
	11/8/2017 (Duplicate)	0.034	0.072	0.0034 U	0.0044 U	0.0038 U	0.045	0.0087 J	0.0057	0.059	**0.022**	**0.024**	**0.029**	**0.011** J	**0.022**	**0.019**	**0.0050** J	0.028	0.3844
	12/19/2017	0.013 J	0.0075 J	0.0034 U	0.0044 U	0.0059 J	0.041 J	0.0041 J	0.037	0.053	0.016 U	**0.011** J	**0.012** J	**0.003** U	**0.0065** J	**0.0081** J	**0.0025** U	0.02	0.2191
	12/19/17 (Duplicate)	0.013 J	0.0076 J	0.0034 U	0.0044 U	0.0071 J	0.046	0.0042 J	0.038	0.062	0.016 U	**0.01** J	**0.013** J	**0.0043** J	**0.0087** J	**0.0099** J	**0.0025** U	0.023	0.2468
	1/29/2018	0.034	0.013 J	0.011 J	0.018	0.021	0.18	0.026	**0.29**	**0.41**	**0.14**	**0.23**	**0.2**	**0.082**	**0.14**	**0.089**	**0.02**	0.13	2.0340
	1/29/18 (Duplicate)	0.035	0.0096 J	0.0034 U	0.012 J	0.014 J	0.089	0.015 J	0.12	0.18	**0.057**	**0.093**	**0.077**	**0.027**	**0.055**	**0.04**	**0.0087** J	0.06	0.8923

		Gen. Chem. (mg/L)	Total Metals (µg/L)									
	Analyte	TSS	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc
	JSCS CULs or *SLVs*	-	0.018	*0.094*	100	2.74	*0.54*	*50*	*0.77*	*16*	*5*	*0.12*	36.5
Source Control Evaluation Monitoring (2014-2015)													
Manhole	**2/17/2014**	57.5	**0.3** J	0.237	2.93	**47.1**	31.2	28.4	0.02 U	2.31	0.3 U	0.081	**149**
	3/28/2014	8.0	**0.2** J	0.082	0.67	**8.62**	3.01	11.5	0.02 U	1.07	0.3 U	0.007 J	**103**
	10/31/2014	11	**0.3** J	0.101	1.12	**17.2**	46.4	13.3	0.02 U	1.52	0.3 U	0.036	**140**
	3/25/2015	7.5	**0.5** J	0.163	0.65	**22.6**	24.5	23.2	0.02 J	2.01	0.3 U	0.017 J	**156**
	3/25/2015 (Duplicate)	7.5	**0.4** J	0.134	0.63	**18**	21.7	20.7	0.02 J	2.01	0.3 J	0.013 J	**135**
	12/7/2015	5 U	**0.167**	0.142	0.708	**22.8**	9.47	16.8	0.0001 U	1.68	0.5 U	0.1 U	**182**
Source Control Evaluation Monitoring (2017-2018)													
Manhole	**10/19/2017**	NA	**0.36** J	0.131	0.85	**10.9**	7.92	NA	0.02 U	1.14	NA	NA	**124**
	10/19/2017 (Duplicate)	NA	**0.37** J	0.114	0.97	**12.1**	5.33	NA	0.02 U	1.12	NA	NA	**118**
	11/4/2017	NA	**0.23** J	0.114	0.46	**9.43**	2.33	NA	0.02 U	1.02	NA	NA	**157**
	11/4/2017 (Duplicate)	NA	**0.24** J	0.137	0.48	**10.7**	4.91	NA	0.02 U	1.28	NA	NA	**161**
	11/8/2017	NA	**0.91**	3.45	5.5	**100**	67.4	NA	0.03 J	10.4	NA	NA	**772**
	11/8/2017 (Duplicate)	NA	**0.86**	3.36	5.23	**95.2**	48.7	NA	0.03 J	10.5	NA	NA	**767**
	12/19/2017	NA	**0.41** J	0.343	1.64	**19.7**	40.7	NA	0.02 U	2.41	NA	NA	**223**
	12/19/2017 (Duplicate)	NA	**0.38** J	0.323	1.48	**16**	6.28	NA	0.02 U	2.23	NA	NA	**219**
	1/29/2018	21	**0.26** J	0.133	1.73	**15.7**	57.6	NA	0.02 U	1.26	NA	NA	**143**
	1/29/2018 (Duplicate)	26	**0.21** J	0.133	1.54	**14.1**	13.1	NA	0.02 U	1.38	NA	NA	**145**

Notes:

0.167 = exceedance of CUL
CUL = EPA Portland Harbor Record of Decision, Table 17, January 2017
SLV = Portland Harbor Joint Source Control Strategy Screening Level Value, Table 3-1, July 2007
NA = not analyzed
- = no screening level value is provided for that analyte or not applicable
mg/L = milligrams per liter
µg/L = micrograms per liter
U = analyte was not detected above the Method Detection Limit (MDL) shown
J = analyte was detected above the MDL, but below the Method Reporting Limit. Concentration shown is approximate.

PATH: S:\Projects\2013\2013 Environmental Group Projects\BDC Properties LLC (133-99732)\Stormwater Performance Monitoring\Technical Memorandum\Revised Final_March 2018\Figures | FILE NAME: Figures 8-15_ Stormwater Curves_r4.xlsx



Date	Result	Rank
Source Control Monitoring		
2/17/2014	0.3	51
3/28/2014	0.2	24
10/31/2014	0.3	51
3/25/2015	0.5	101
3/25/2015 (Dup)	0.4	76
12/7/2015	0.167	16
Performance Monitoring		
10/19/2017	0.36	67
10/19/2017 (Dup)	0.37	68
11/4/2017	0.23	34
11/4/17 (Dup)	0.24	36
11/8/2017	0.91	190
11/8/2017 (Dup)	0.86	180
12/19/2017	0.41	85
12/19/17 (Dup)	0.38	71
1/29/2018	0.26	43
1/29/2018 (Dup)	0.21	29

LEGEND

- Arsenic Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

CLIENT
BDC PROPERTIES, LLC

CONSULTANT
GOLDER

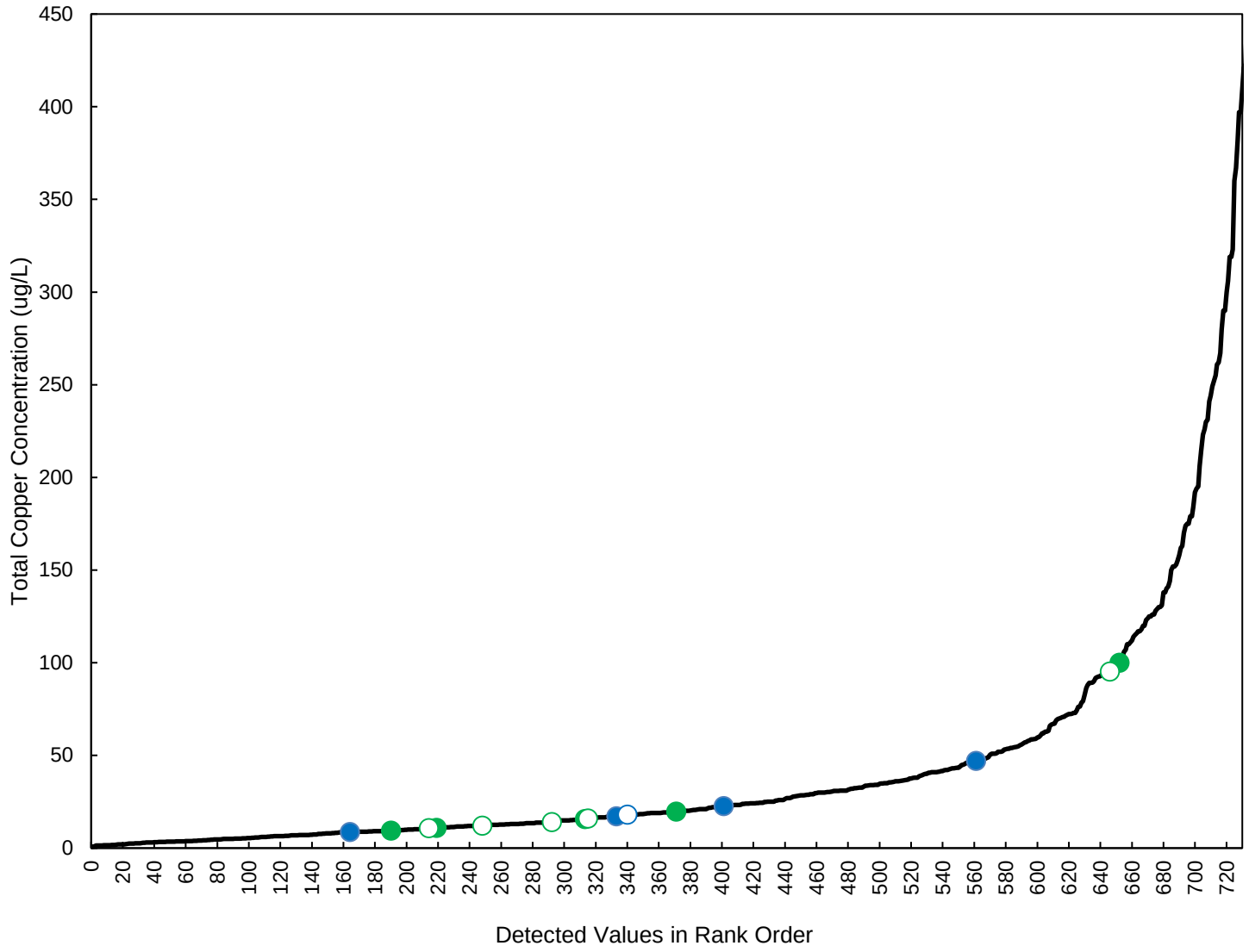
PROJECT
STORMWATER SOURCE CONTROL PERFORMANCE MONITORING EVALUATION

TITLE
DEQ Stormwater Rank Order Curves - Total Arsenic

PROJECT NO. 13399732 | PHASE | REV. A

FIGURE 3

PATH: S:\Projects\2013\2013 Environmental Group Projects\BDC Properties LLC (133-99732)\Stormwater Performance Monitoring\Technical Memorandum\Revised Final_March 2018\Figures | FILE NAME: Figures 8-15_ Stormwater Curves_r4.xlsx



Date	Result	Rank
Source Control Monitoring		
2/17/2014	47.1	561
3/28/2014	8.62	164
10/31/2014	17.2	333
3/25/2015	22.6	401
3/25/2015 (Dup)	18	340
12/7/2015	22.8	405
Performance Monitoring		
10/19/2017	10.9	219
10/19/17 (Dup)	12.1	248
11/4/2017	9.43	190
11/4/17 (Dup)	10.7	214
11/8/2017	100	652
11/8/2017 (Dup)	95.2	646
12/19/2017	19.7	371
12/19/2017 (Dup)	16.0	315
1/29/2018	15.7	313
1/29/2018 (Dup)	14.1	292

LEGEND

- Copper Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

CLIENT
BDC PROPERTIES, LLC

CONSULTANT
GOLDER

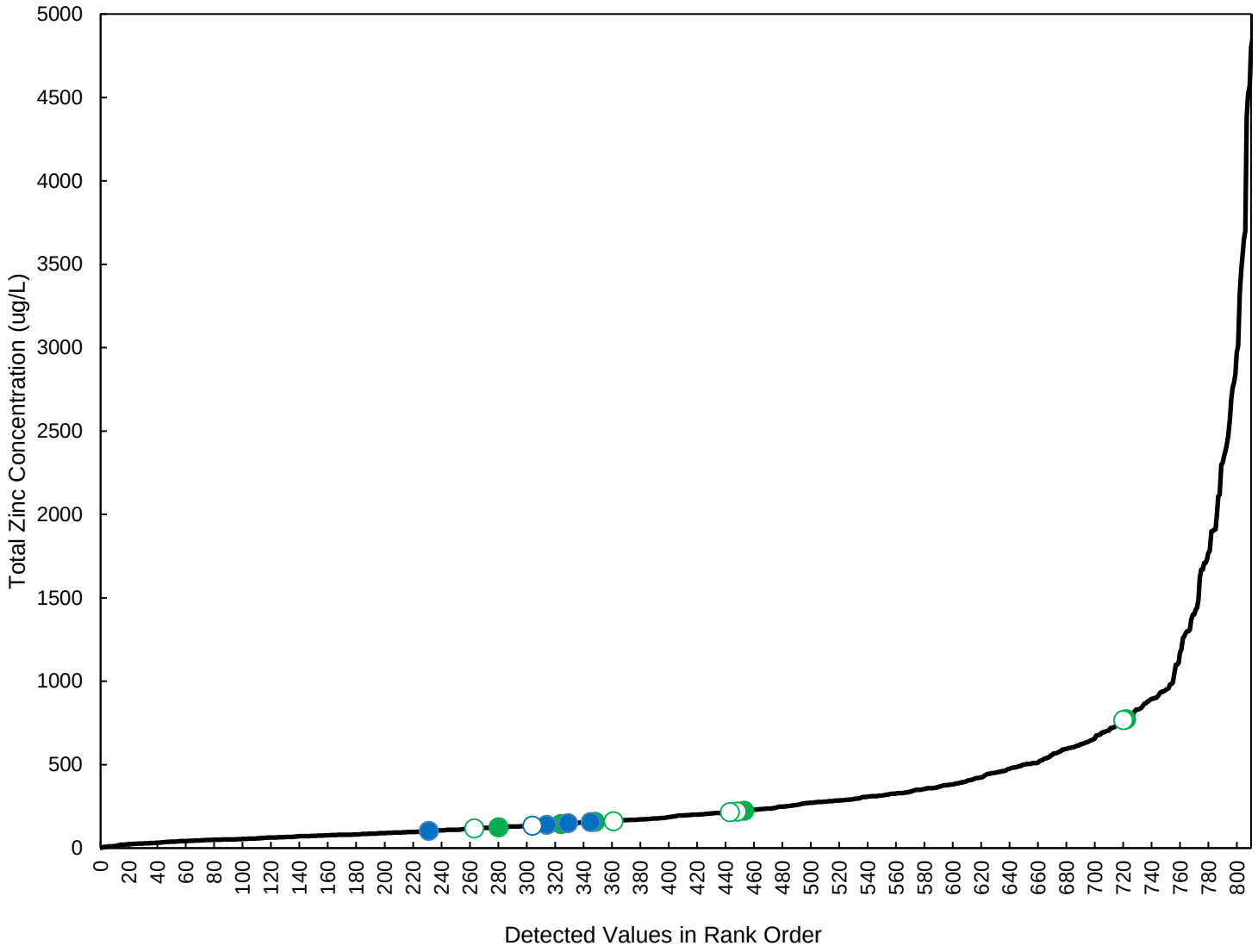
PROJECT
STORMWATER SOURCE CONTROL PERFORMANCE MONITORING EVALUATION

TITLE
DEQ Stormwater Rank Order Curves - Total Copper

PROJECT NO. 13399732 | PHASE | REV. A

FIGURE 4

PATH: S:\Projects\2013\2013 Environmental Group Projects\BDC Properties LLC (133-99732)\Stormwater Performance Monitoring\Technical Memorandum\Revised Final_March 2018\Figures | FILE NAME: Figures 8-15_ Stormwater Curves_r4.xlsx



Date	Result	Rank
Source Control Monitoring		
2/17/2014	149	329
3/28/2014	103	231
10/31/2014	140	314
3/25/2015	156	345
3/25/2015 (Dup)	135	304
12/7/2015	182	398
Performance Monitoring		
10/19/2017	124	280
10/19/2017 (Dup)	118	263
11/4/2017	157	348
11/4/2017 (Dup)	161	361
11/8/2017	772	722
11/8/2017 (Dup)	767	720
12/19/2017	223	453
12/19/17 (Dup)	219	448
1/29/2018	145	324
1/29/18 (Dup)	216	443

LEGEND

- Total Zinc Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

CLIENT
BDC PROPERTIES, LLC

CONSULTANT
GOLDER

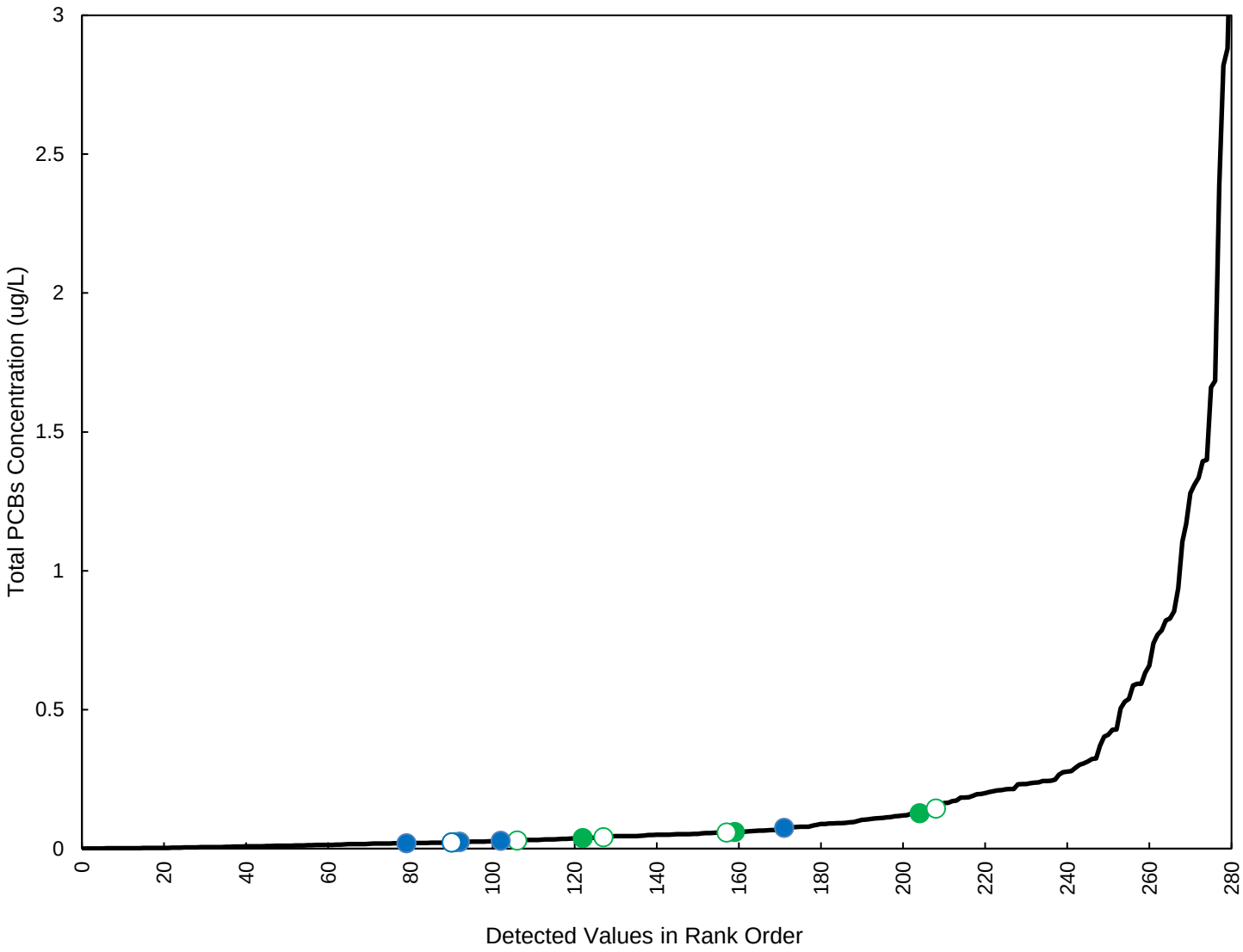
PROJECT
STORMWATER SOURCE CONTROL PERFORMANCE MONITORING EVALUATION

TITLE
DEQ Stormwater Rank Order Curves - Total Zinc

PROJECT NO. 13399732 | PHASE | REV. A

FIGURE 5

PATH: S:\Projects\2013\2013 Environmental Group Projects\BDC Properties LLC (133-99732)\Stormwater Performance Monitoring\Technical Memorandum\Revised Final_March 2018\Figures | FILE NAME: Figures 8-15_ Stormwater Curves_r4.xlsx



Date	Result	Rank
Source Control Monitoring		
2/17/2014	0.075	171
3/28/2014	0.019	79
10/31/2014	0.028	102
3/25/2015	0.0238	92
3/25/2015 (Dup)	0.0223	90
5/13/2015	0.0157	65
12/7/2015	0.023	53
Performance Monitoring		
10/19/2017	0.0238	92
10/19/17 (Dup)	0.0292	106
11/4/2017	0.0231	91
11/4/17 (Dup)	0.0218	90
11/8/2017	0.06	159
11/8/2017 (Dup)	0.058	157
12/19/2017	0.0384	122
12/19/2017 (Dup)	0.0413	127
1/29/2018	0.127	204
1/29/18 (Dup)	0.144	208

LEGEND

- Total PCBs Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

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TITLE
DEQ Stormwater Rank Order Curves - Total PCBs

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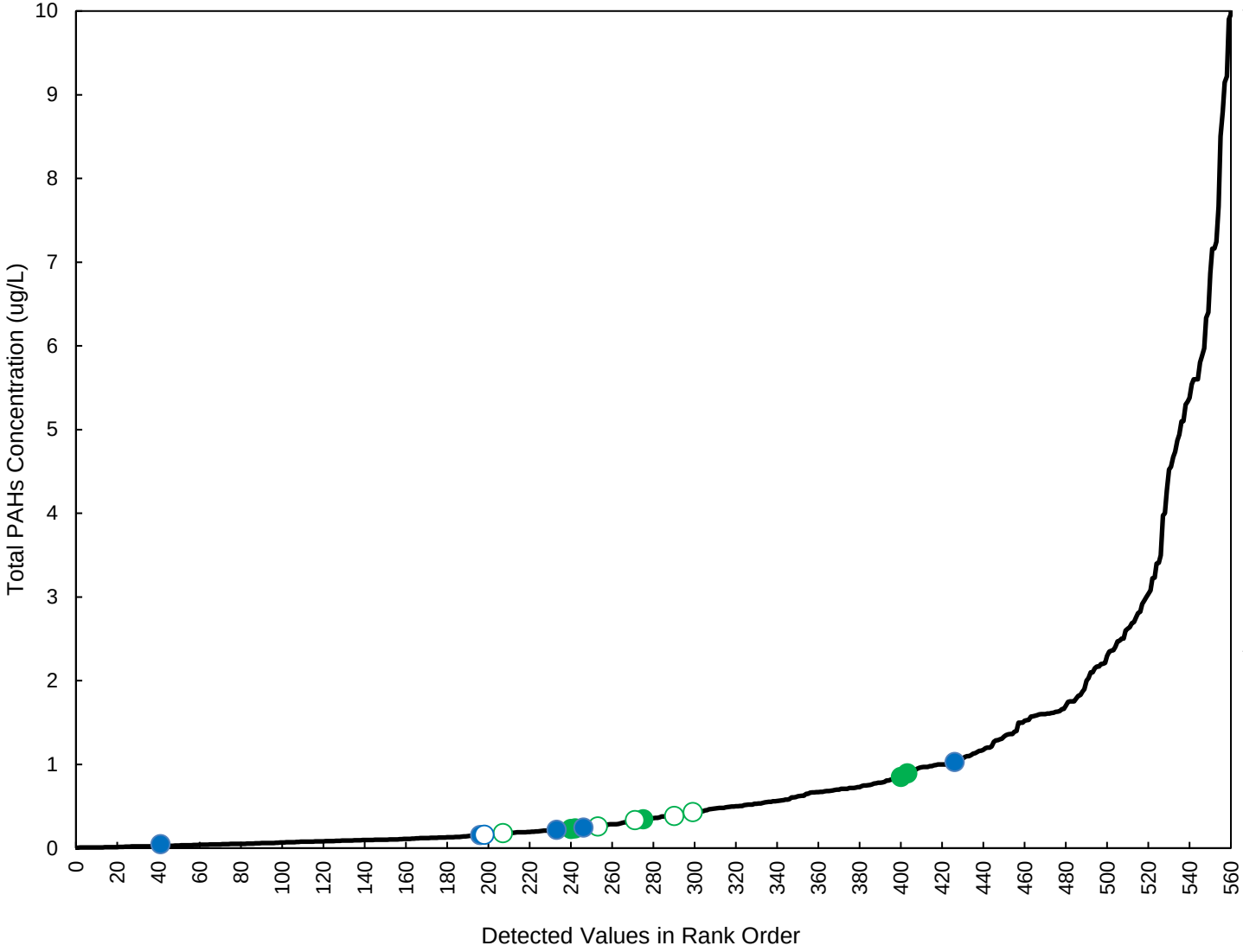
FIGURE 6



Date	Result	Rank
Source Control Monitoring		
2/17/2014	1.0285	426
3/28/2014	0.1556	196
10/31/2014	0.2442	246
3/25/2015	0.2195	233
3/25/2015 (Dup)	0.1605	198
12/7/2015	0.049 U	41
Performance Monitoring		
10/19/2017	0.345	275
10/19/17 (Dup)	0.3351	271
11/4/2017	0.2367	242
11/4/17 (Dup)	0.1807	207
11/8/2017	0.849	400
11/8/2017 (Dup)	0.3844	290
12/19/2017	0.2279	240
12/19/2017 (Dup)	0.2578	253
1/29/2018	0.8923	403
1/29/18 (Dup)	0.4313	299

LEGEND

- Total PAHs Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

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STORMWATER SOURCE CONTROL PERFORMANCE MONITORING EVALUATION

TITLE
DEQ Stormwater Rank Order Curves - Total PAHs

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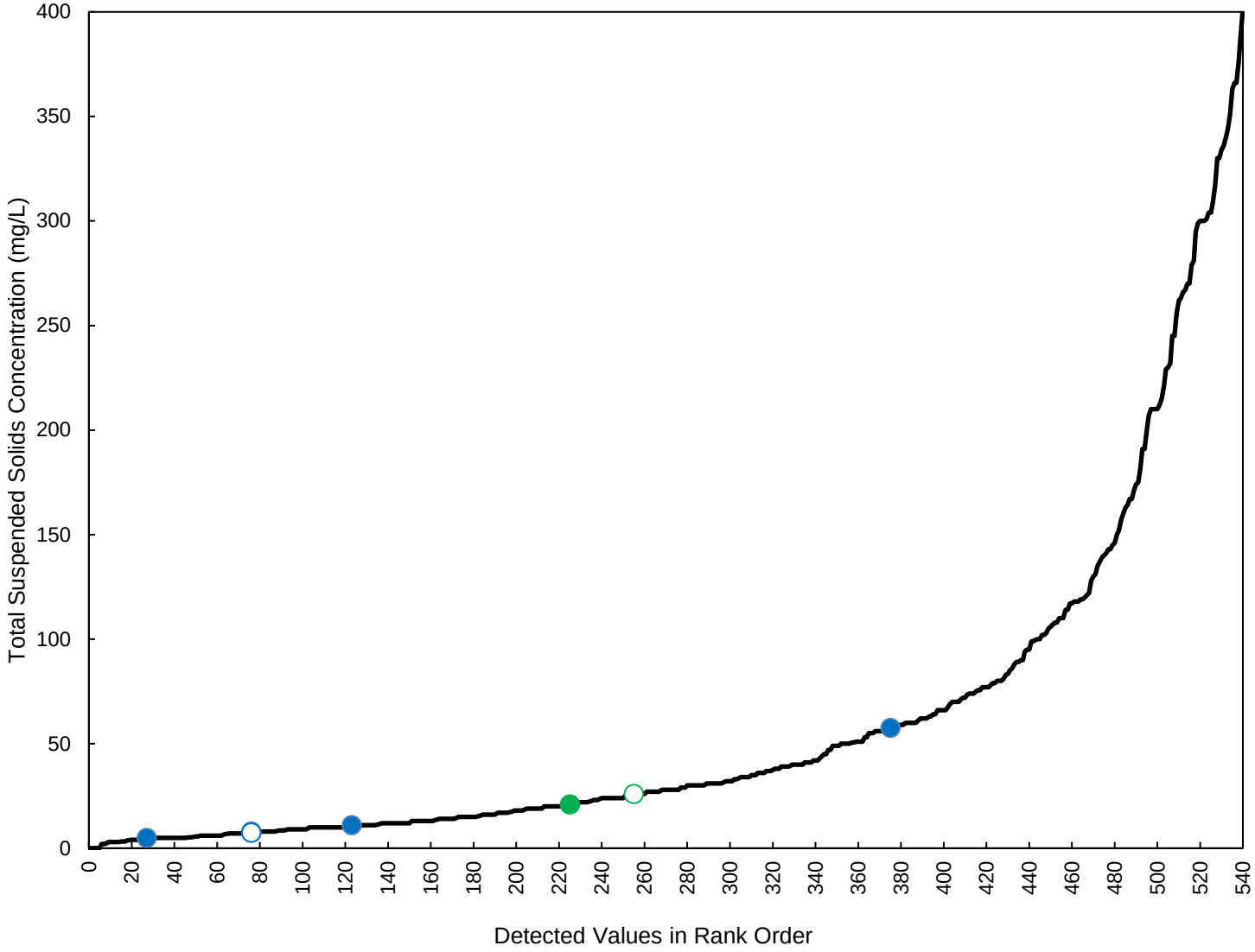
FIGURE 7

PATH: S:\Projects\2013\2013 Environmental Group Projects\BDC Properties LLC (133-99732)\Stormwater Performance Monitoring\Technical Memorandum\Revised Final_March 2018\Figures | FILE NAME: Figures 8-15_ Stormwater Curves_r4.xlsx



Date	Result	Rank
Source Control Monitoring		
2/17/2014	57.5	375
3/28/2014	8	76
10/31/2014	11	123
3/25/2015	7.5	76
3/25/2015 (Dup)	7.5	76
12/7/2015	5	27
Performance Monitoring		
10/19/2017	NS	NS
10/19/2017 (Dup)	NS	NS
11/4/2017	NS	NS
11/4/2017 (Dup)	NS	NS
11/8/2017	NS	NS
11/8/2017 (Dup)	NS	NS
12/19/2017	NS	NS
12/19/17 (Dup)	NS	NS
1/29/2018	21	225
1/29/18 (Dup)	26	255

LEGEND

- TSS Concentration Rank
- Performance Monitoring Primary Samples
- Performance Monitoring Duplicate Samples
- Source Control Primary Samples
- Source Control Dulplicate Samples

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BDC PROPERTIES, LLC

CONSULTANT
GOLDER

PROJECT
STORMWATER SOURCE CONTROL PERFORMANCE MONITORING EVALUATION

TITLE
DEQ Stormwater Rank Order Curves - Total Suspended Solids

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FIGURE 8