Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S002	SC-S002	SC-S002	SC-S004	SC-S004	SC-S004	SC-S004	SC-S004	SC-S004	SC-S007
			Sample ID	PDI-SC-S002-0TO2	PDI-SC-S002-2TO4	PDI-SC-S002-4TO6.5	PDI-SC-S004-0TO2	PDI-SC-S004-2TO4	PDI-SC-S004-4TO6	PDI-SC-S004-6TO7.3	PDI-SC-S004-7.3TO9.1	PDI-SC-S004-9.1TO10.3	PDI-SC-S007-0TO2
			Sample Date	7/26/2018	7/26/2018	7/26/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	0-2 ft	2-4 ft	4-6.5 ft	0-2 ft	2-4 ft	4-6 ft	6-7.3 ft	7.3-9.1 ft	9.1-10.3 ft	0-2 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.0020 J	0.0010 J	0.00095 J	0.11	0.0019 J	0.0022 J	0.0014 J	0.0013 J	0.00071 J	0.078
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.000065 J+	< 0.000048 U	0.000057 J+	0.015	0.00021 J	0.00016 J	0.000095 J	0.000079 JN	0.000068 J	0.015
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		< 0.000015 U	< 0.000026 U	< 0.000025 U	0.0012 J	0.00013 JN	0.00013 J+	< 0.00010 U	< 0.000089 U	< 0.000086 U	0.00091 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		< 0.00014 U	< 0.000047 U	< 0.00012 U	0.0011 J	0.00016 J+	0.00013 J+	0.00013 JN	< 0.000088 U	< 0.00010 U	0.00089 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		< 0.000030 U	< 0.000041 U	< 0.000044 U	0.0028 J	0.000060 J	< 0.000031 U	< 0.000024 U	< 0.000025 U	< 0.000020 U	0.0016 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.00010 JN	< 0.000045 U	0.000054 JN	0.0070	0.00013 J	0.00011 J	0.000059 JN	0.000078 J	0.000040 JN	0.0032 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		< 0.000030 U	< 0.000041 U	< 0.000044 U	0.0015 J	0.000059 J	< 0.000031 U	< 0.000024 U	< 0.000025 U	< 0.000021 U	< 0.00026 U
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.00029 J	0.00012 JN	0.00012 JN	0.0030 J	0.00025 J	0.00020 JN	0.00024 J	0.00019 J	0.00014 J	0.0021 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.000016 U	< 0.000020 U	< 0.000023 U	0.00034 J	< 0.00042 U	0.00051 J+	< 0.00043 U	< 0.00043 U	< 0.00039 U	0.00029 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.000070 J	< 0.000046 U	< 0.000046 U	0.00045 JN	< 0.000030 U	0.000042 JN	< 0.000030 U	< 0.000020 U	0.000038 J	< 0.00011 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		< 0.000019 U	< 0.000027 U	< 0.000024 U	0.0016 J	< 0.00015 U	< 0.00017 U	< 0.00014 U	< 0.00013 U	< 0.00014 U	0.00069 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.000019 U	< 0.000026 U	< 0.000028 U	< 0.00030 U	< 0.000033 U	< 0.000032 U	< 0.000025 U	< 0.000026 U	< 0.000023 U	0.00041 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		< 0.000021 U	< 0.000028 U	< 0.000025 U	0.0013 J	0.000053 J	0.000049 JN	< 0.000023 U	< 0.000016 U	0.000047 J	0.00054 J
2,3,7,8-TCDD	1746-01-6	µg/kg		< 0.000031 U	< 0.000040 U	< 0.000032 U	0.00030 JN	< 0.000018 U	< 0.000018 U	< 0.000049 U	< 0.000053 U	< 0.000012 U	0.00036 JN
2,3,7,8-TCDF	51207-31-9	µg/kg		< 0.000016 U	< 0.000018 U	< 0.000018 U	0.0027	0.000078 J+	0.000084 J+	< 0.000054 U	< 0.000039 U	< 0.000044 U	< 0.00070 U
OCDD	3268-87-9	µg/kg		0.020	0.012	0.010	1.1	0.021	0.023	0.015	0.013	0.0069 J+	0.75
OCDF	39001-02-0	µg/kg		0.00017 JN	< 0.000051 U	0.00032 J+	0.045	0.00057 J+	0.00041 J+	< 0.00019 U	< 0.00014 U	< 0.00011 U	0.062
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.00015	0.000049	0.000054	0.0047	0.00014	0.0002	0.000087	0.000071	0.000099	0.0026
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.00014	0.000037	0.000036	0.0041	0.00014	0.00014	0.000068	0.00007	0.000095	0.0024
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.00013	0.000014	0.000013	0.0039	0.00012	0.00012	0.000043	0.000044	0.000076	0.0022
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 3.0 UJ	< 2.9 UJ	< 2.9 UJ	< 3.3 U	< 3.0 UJ	< 2.9 U	< 2.8 U	< 2.8 U	< 2.6 U	< 4.8 U
Aroclor 1221	11104-28-2	µg/kg		< 3.0 UJ	< 2.9 U	< 2.9 UJ	< 3.3 U	< 3.0 UJ	< 2.9 U	< 2.8 U	< 2.8 U	< 2.6 U	< 4.8 U
Aroclor 1232	11141-16-5	µg/kg		< 3.0 UJ	< 2.9 U	< 2.9 UJ	< 3.3 UJ	< 3.0 UJ	< 2.9 UJ	< 2.8 UJ	< 2.8 UJ	< 2.6 UJ	< 4.8 U
Aroclor 1242	53469-21-9	µg/kg		< 3.0 UJ	< 2.9 U	< 2.9 UJ	< 3.3 U	< 3.0 UJ	< 2.9 U	< 2.8 U	< 2.8 U	< 2.6 U	< 4.8 U
Aroclor 1248	12672-29-6	µg/kg		< 3.0 UJ	< 2.9 UJ	< 2.9 UJ	120	< 3.0 UJ	0.41 J	< 2.8 U	< 2.8 U	< 2.6 U	< 4.8 U
Aroclor 1254	11097-69-1	µg/kg		< 3.0 UJ	< 2.9 U	< 2.9 UJ	< 3.3 U	< 3.0 UJ	< 2.9 U	< 2.8 U	< 2.8 U	< 2.6 U	6.7
Aroclor 1260	11096-82-5	µg/kg		< 3.0 UJ	< 2.9 U	< 2.9 UJ	< 3.3 U	< 3.0 UJ	< 2.9 U	< 2.8 U	< 2.8 U	< 2.6 U	< 4.8 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		< 3 UJ	< 2.9 UJ	< 2.9 UJ	120	< 3 UJ	0.41	< 2.8 UJ	< 2.8 UJ	< 2.6 UJ	6.7
Pesticides													
2,4-DDD	53-19-0	µg/kg		< 0.014 U	< 0.0052 U	< 0.010 U	1.11 J	0.0320 J	< 0.027 U	< 0.024 U	< 0.061 UJ	< 0.033 UJ	0.418 J
2,4-DDE	3424-82-6	µg/kg		0.0189 J	< 0.0035 U	0.0102 J	0.179 J	< 0.0123 U	< 0.015 U	< 0.012 U	< 0.076 U	< 0.020 U	0.067 JN
2,4-DDT	789-02-6	µg/kg		0.0546 J	< 0.0202 U	< 0.0258 U	0.131 J	< 0.014 U	< 0.030 U	< 0.025 U	< 0.048 UJ	< 0.031 UJ	0.14 JN
4,4'-DDD	72-54-8	µg/kg		< 0.019 U	< 0.0060 U	< 0.00986 U	3.34	0.0558 J	0.052 JN	< 0.026 U	< 0.049 UJ	< 0.032 UJ	1.10 J
4,4'-DDE	72-55-9	µg/kg		< 0.0347 U	< 0.0133 U	< 0.0203 U	2.55	< 0.0422 U	< 0.0336 U	< 0.015 U	< 0.0898 U	< 0.0362 U	2.39
4,4'-DDT	50-29-3	µg/kg		< 0.155 U	< 0.0632 U	< 0.0814 U	0.258 J	0.0877 J	0.116 J	0.0762 J	0.17 JN	< 0.042 UJ	0.298 J
DDx (b)	T_DDx (PDI)	µg/kg		0.151	< 0.0632 U	0.0509	7.57	0.197	0.185	0.0892	0.215	< 0.042 UJ	4.41
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		1.3 J	0.82 J	1.5 J	72	15	0.78 J	0.79 J	0.56 J	0.40 J	< 120 U
Acenaphthene	83-32-9	µg/kg		1.2 J	< 7.2 U	< 7.0 U	41	12	< 6.9 U	< 6.8 U	< 1.3 U	< 1.3 U	< 120 U
Acenaphthylene	208-96-8	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	67	20	< 6.9 U	< 6.8 U	< 1.3 U	< 1.3 U	< 120 U
Anthracene	120-12-7	µg/kg		1.4 J	1.2 J	0.85 J	86	21	0.85 J	< 6.8 U	0.23 J	0.22 J	23 J
Benz(a)anthracene	56-55-3	µg/kg		0.86 J	1.4 J	1.4 J	310	23	1.9 J	1.1 J	0.35 J	0.21 J	41 J
Benzo(a)pyrene	50-32-8	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	370	23	< 6.9 U	< 6.8 U	< 1.3 U	< 1.3 U	50 J
Benzo(b)fluoranthene	205-99-2	µg/kg		1.1 J	0.90 J	1.8 J	440	28	2.4 J	1.5 J	0.72 J	0.39 J	64 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		0.76 J	< 7.2 U	< 7.0 U	370	30	1.2 J	< 6.8 U	< 1.3 U	< 1.3 U	42 J
Benzo(k)fluoranthene	207-08-9	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	110	7.7	< 6.9 U	< 6.8 U	< 1.3 U	< 1.3 U	25 J
Chrysene	218-01-9	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	410	34	2.3 J	< 6.8 U	0.53 J	< 1.3 U	75 J
Dibenz(a,h)anthracene	53-70-3	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	110	< 7.3 U	< 6.9 U	< 6.8 U	< 1.3 U	< 1.3 U	< 120 U
Fluoranthene	206-44-0	µg/kg		2.6 J	2.4 J	2.1 J	350	49	2.5 J	< 6.8 U	0.67 J	0.50 J	130
Fluorene	86-73-7	µg/kg		1.4 J	1.3 J	1.2 J	32	12	1.0 J	< 6.8 U	0.40 J	0.30 J	17 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		< 4.2 U	< 7.2 U	< 7.0 U	370	29	1.4 J	< 6.8 U	< 1.3 U	< 1.3 U	56 J
Naphthalene	91-20-3	µg/kg		2.0 J	2.4 J	1.2 J	280	62	2.2 J	1.4 J	1.3	1.0 J	33 J
Phenanthrene	85-01-8	µg/kg		2.9 J	1.9 J	3.9 J	450	77	3.8 J	1.8 J	1.1 J	0.84 J	71 J
Pyrene	129-00-0	µg/kg		3.2 J	2.3 J	2.0 J	790	93	3.8 J	1.4 J	0.66 J	0.46 J	140
Total PAHs (b)	T_PAH (PDI)	µg/kg		23	22	23	4700	540	31	15	7.8	5.6	890
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		2.3	3.8	3.8	590	35	4	3.7	0.76	0.71	130

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S002	SC-S002	SC-S002	SC-S004	SC-S004	SC-S004	SC-S004	SC-S004	SC-S004	SC-S007
		Sample ID	PDI-SC-S002-0TO2	PDI-SC-S002-2TO4	PDI-SC-S002-4TO6.5	PDI-SC-S004-0TO2	PDI-SC-S004-2TO4	PDI-SC-S004-4TO6	PDI-SC-S004-6TO7.3	PDI-SC-S004-7.3TO9.1	PDI-SC-S004-9.1TO10.3	PDI-SC-S007-0TO2
		Sample Date	7/26/2018	7/26/2018	7/26/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	2-4 ft	4-6.5 ft	0-2 ft	2-4 ft	4-6 ft	6-7.3 ft	7.3-9.1 ft	9.1-10.3 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	65.3	67.6	68.4	60.4	64.4	68.0	68.7	70.3	76.7	41.4
Total Solids@70C	TSOLID70	%	70	70	71	61	62	65	70	73	75	42
Total Solids (%)	%SOLID	%	68.2	67.4	69	62.8	61.2	67.1	69.4	70.2	73.3	42.5
Clay	GS-Clay	%	6.7	5.9	7.4	5.5	15.5	8.5	5.8	3.9	2.7	14.8
Gravel	GS-Gravel	%	0	0	0	2.0	0	0	0	0	0	0
Sand, Coarse	GS-Csand	%	0	0	0	0.5	0	0	0	0	0.1	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	50.99	42.17	39.26	53.37	20.2	36.32	29.23	51.88	71.54	4.732
Sand, Fine (#230) (d)	GS-Fsand	%	57.3	49.5	45.9	61.5	23.0	43.7	35.1	54.7	74.6	6.5
Sand, Medium	GS-Msand	%	0	0	0	1.7	0.6	0.1	0	0	0	0.1
Silt (#200) (d)	GS-Silt-200	%	42.20	51.82	53.23	36.82	63.69	54.97	64.96	44.21	25.65	80.26
Silt (#230) (d)	GS-Silt	%	35.9	44.5	46.6	28.7	60.9	47.6	59.1	41.4	22.6	78.5
Percent Fines (e)	GS-FINES	%	48.9	57.72	60.63	42.32	79.19	63.47	70.76	48.11	28.35	95.06
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	6100	6100	6300	36000	28000	21000	18000	6400	5100	52000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S009	SC-S009
			Sample ID	PDI-SC-S007-10TO12	PDI-SC-S007-12TO14	PDI-SC-S007-14TO16	PDI-SC-S007-2TO4	PDI-SC-S007-4TO6	PDI-SC-S007-4TO6D	PDI-SC-S007-6TO8	PDI-SC-S007-8TO10	PDI-SC-S009-0TO2	PDI-SC-S009-10TO11.4
			Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
			Sample Type Code	N	N	N	N	N	FD	N	N	N	N
			Depth	10-12 ft	12-14 ft	14-16 ft	2-4 ft	4-6 ft	4- ft	6-8 ft	8-10 ft	0-2 ft	10-11.4 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.22	0.43	0.13	0.077	0.13	0.17	0.31	0.22	0.072	0.17
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.040	0.075	0.031	0.013	0.020	0.026	0.036	0.033	0.014 JN	0.029
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.0039 J	0.0060	0.0029 J	0.00096 J	0.0015 J	0.0022 J	0.0025 J	0.0025 J	0.0011 J	0.0019 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.0015 J	0.0032 J	0.00075 J+	0.00089 J	0.0014 J	0.0017 J	0.0026 J	0.0019 J	< 0.00045 U	0.0016 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.0093	0.016	0.0061	0.0021 J	0.0035 J	0.0070	0.0053	0.0054	0.0019 J	0.0042 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.010	0.017	0.0047	0.0036 J	0.0080	0.010	0.021	0.013	0.0030 J	0.0069
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.0047	0.0071	0.0040 J	0.00094 J	0.0018 J	0.0031 J	0.0035 J	0.0029 J	0.00088 J	0.0020 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0036 J	0.0073	0.0022 J	0.0024 J	0.0043 J	0.0043 J	0.0058	0.0046	0.0023 J	0.0041 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.00044 J+	0.00053 J+	0.00038 J+	< 0.00019 U	0.00031 J+	0.00040 J+	< 0.00033 U	0.00035 J+	< 0.00042 U	< 0.00031 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00071 JN	0.0018 J	0.00046 J	0.00043 J	0.00086 J	0.0010 J	0.0016 J	0.0011 J	0.00040 JN	0.00063 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.0063	0.0067	0.0016 J	0.0011 J	0.0015 J	0.0028 J	0.0030 J	0.0036 J	0.00088 J	0.0021 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0012 J	0.0020 J	0.00074 J	0.00039 J	0.00070 J	0.0014 J	0.0016 J	0.0010 J	< 0.00064 U	< 0.00053 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.0039 J	0.0036 J	0.00082 J	0.00070 J	0.0011 J	0.0017 J	0.0019 J	0.0024 J	< 0.00024 U	0.0013 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00044 JN	0.0017	0.00047 JN	0.00029 JN	0.00043 JN	0.00068 J	0.00055 JN	0.00054 JN	0.00053 JN	0.00068 J
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0078	0.0078	0.00091	0.0018	0.0050	0.0060	0.0041	0.0050	< 0.00045 U	0.0047
OCDD	3268-87-9	µg/kg	2.6	5.8 J	1.9	0.78	1.2	1.7	3.0	2.2	0.67	1.5
OCDF	39001-02-0	µg/kg	0.13	0.24	0.096	0.051	0.065	0.089	0.094	0.089	0.064	0.15
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.0098	0.018	0.0054	0.0033	0.0061	0.0082	0.012	0.0091	0.0029	0.0066
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.009	0.018	0.0052	0.0032	0.0058	0.0082	0.011	0.0089	0.0022	0.0063
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.0087	0.018	0.005	0.003	0.0056	0.0082	0.011	0.0086	0.0019	0.006
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.4 U	< 3.4 U	< 3.2 U	< 3.9 U	< 3.6 U	< 3.8 U	< 3.8 UJ	< 3.6 U	< 4.3 U	< 3.7 U
Aroclor 1221	11104-28-2	µg/kg	< 3.4 U	< 3.4 U	< 3.2 U	< 3.9 U	< 3.6 U	< 3.8 U	< 3.8 UJ	< 3.6 U	< 4.3 U	< 3.7 U
Aroclor 1232	11141-16-5	µg/kg	< 3.4 U	< 3.4 U	< 3.2 U	< 3.9 U	< 3.6 U	< 3.8 U	< 3.8 UJ	< 3.6 U	< 4.3 UJ	< 3.7 UJ
Aroclor 1242	53469-21-9	µg/kg	< 3.4 U	< 3.4 U	< 3.2 U	< 3.9 U	< 3.6 U	< 3.8 U	< 3.8 UJ	< 3.6 U	< 4.3 U	< 3.7 U
Aroclor 1248	12672-29-6	µg/kg	2200	130	< 3.2 U	< 3.9 U	< 3.6 U	< 3.8 U	31 J	57	< 4.3 U	7.6 J
Aroclor 1254	11097-69-1	µg/kg	< 3.4 U	< 3.4 U	< 3.2 U	19	12	18	< 3.8 UJ	< 3.6 U	< 4.3 U	< 3.7 U
Aroclor 1260	11096-82-5	µg/kg	< 3.4 U	< 3.4 U	7.2	< 3.9 U	< 3.6 U	< 3.8 U	< 3.8 UJ	< 3.6 U	1.9 J	< 3.7 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	2200	130	7.2	19	12	18	31	57	1.9	7.6
Pesticides												
2,4-DDD	53-19-0	µg/kg	1.54 J	1.94	2.13 J	0.476 J	0.743 J	0.872 J	0.647 J	1.09 J	0.344 J	0.664 J
2,4-DDE	3424-82-6	µg/kg	0.399 J	0.504 J	0.531 J	0.161 J	0.187 J	0.180 J	0.264 J	0.282 J	0.0796 J	0.158 J
2,4-DDT	789-02-6	µg/kg	0.246 J	0.318 J	0.354 J	0.135 J	0.171 J	0.174 J	0.186 J	0.12 JN	0.095 JN	0.12 JN
4,4'-DDD	72-54-8	µg/kg	5.29	7.05	7.45 J	1.88 J	2.93	2.85 J	2.07	4.48 J	1.04 J	2.24
4,4'-DDE	72-55-9	µg/kg	7.95	8.43	8.61	4.83	4.91	4.01	6.66	7.09	2.29 J	4.03
4,4'-DDT	50-29-3	µg/kg	0.644 J	1.14 J	0.443 J	0.287 J	0.452 J	0.470 J	0.332 J	0.356 J	0.336 J	0.374 J
DDx (b)	T_DDx (PDI)	µg/kg	16.1	19.4	19.5	7.77	9.39	8.56	10.2	13.4	4.18	7.59
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	81	300	400	14 J	27 J	28 J	43 J	78	8.4 J	20
Acenaphthene	83-32-9	µg/kg	120	400	650	26 J	46 J	46	64	81	10 J	34
Acenaphthylene	208-96-8	µg/kg	65	99	78	26 J	45 J	45 J	33 J	53	7.8 J	12 J
Anthracene	120-12-7	µg/kg	150	290	510	30 J	59 J	68	130	110	21 J	42
Benz(a)anthracene	56-55-3	µg/kg	210	390	350	71	160	170	120	180	45	140
Benzo(a)pyrene	50-32-8	µg/kg	230	360	330	77	170	180	140	190	47	150
Benzo(b)fluoranthene	205-99-2	µg/kg	260	480	320	110	230	250	200	240	75	230
Benzo(g,h,i)perylene	191-24-2	µg/kg	230	370	320	77	140	190	150	220	43	150
Benzo(k)fluoranthene	207-08-9	µg/kg	130	160	130	35 J	100	81	74	79	19 J	77
Chrysene	218-01-9	µg/kg	350	550	460	110	290	240	240	260	62	180
Dibenz(a,h)anthracene	53-70-3	µg/kg	30 J	45	36	< 49 U	< 90 U	22 J	< 45 U	23 J	6.4 J	20
Fluoranthene	206-44-0	µg/kg	510	1100	1200	180	340	390	370	480	130	300
Fluorene	86-73-7	µg/kg	96	320	440	22 J	36 J	38 J	47	81	17 J	34
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	220	360	290	74	140	210	150	200	45	170
Naphthalene	91-20-3	µg/kg	150	450	470	45 J	100	100	110	170	27	49
Phenanthrene	85-01-8	µg/kg	530	1300	2400	140	290	290	290	460	66	180
Pyrene	129-00-0	µg/kg	670	1300	1500	200	440	470	480	610	140	310
Total PAHs (b)	T_PAH (PDI)	µg/kg	4000	8300	9900	1300	2700	2800	2700	3500	770	2100
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	330	530	460	130	270	270	210	280	70	220

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S007	SC-S009	SC-S009
		Sample ID	PDI-SC-S007-10TO12	PDI-SC-S007-12TO14	PDI-SC-S007-14TO16	PDI-SC-S007-2TO4	PDI-SC-S007-4TO6	PDI-SC-S007-4TO6D	PDI-SC-S007-6TO8	PDI-SC-S007-8TO10	PDI-SC-S009-0TO2	PDI-SC-S009-10TO11.4
		Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
		Sample Type Code	N	N	N	N	N	FD	N	N	N	N
		Depth	10-12 ft	12-14 ft	14-16 ft	2-4 ft	4-6 ft	4- ft	6-8 ft	8-10 ft	0-2 ft	10-11.4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	58.2	58.1	61.3	50.3	52.9	52.4	51.1	55.0	44.0	51.9
Total Solids@70C	TSOLID70	%	58	60	63	52	53	54	54	56	44	51
Total Solids (%)	%SOLID	%	58.9	58.7	61.9	52	54.1	53.2	53.6	56.6	43.1	51.2
Clay	GS-Clay	%	15.9	10.5	12.6	19.2	18.2		18.0	20.7	15.4	22.2
Gravel	GS-Gravel	%	0	4.4	0	0	0		0	0	0	0
Sand, Coarse	GS-Csand	%	0.2	0.8	1.1	0	0		0	0	0	0.5
Sand, Fine (#200) (d)	GS-Fsand-200	%	14.15	14.87	15.37	4.856	11.25		6.575	7.734	5.246	3.776
Sand, Fine (#230) (d)	GS-Fsand	%	17.1	19.8	19.3	7.1	12.8		8.6	9.7	7.3	5.3
Sand, Medium	GS-Msand	%	0.6	0.4	0.1	0.1	1.5		0.3	0.7	0.1	0.3
Silt (#200) (d)	GS-Silt-200	%	69.14	68.92	70.82	75.84	69.04		75.12	70.96	79.25	73.12
Silt (#230) (d)	GS-Silt	%	66.2	64.0	66.9	73.6	67.5		73.1	69.0	77.2	71.6
Percent Fines (e)	GS-FINES	%	85.04	79.42	83.42	95.04	87.24		93.12	91.66	94.65	95.32
Liquid Limit	GS-LL	None				75						
Plasticity Index	GS-PI	None				35						
Plasticity Limit	GS-PL	None				40						
Total Organic Carbon	TOC	mg/kg	37000	50000	37000	38000	41000	42000	42000	38000	59000	58000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S009	SC-S009	SC-S009	SC-S009	SC-S010	SC-S010	SC-S010	SC-S010	SC-S010
			Sample ID	PDI-SC-S009-2TO4	PDI-SC-S009-4TO6	PDI-SC-S009-6TO8	PDI-SC-S009-8TO10	PDI-SC-S010-0TO2	PDI-SC-S010-10.8TO13.4	PDI-SC-S010-13.4TO14.4	PDI-SC-S010-2TO4	PDI-SC-S010-4TO6.4
			Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	10.8-13.4 ft	13.4-14.4 ft	2-4 ft	4-6.4 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.083	0.046	0.078	0.10	0.16	0.0015 J+	0.0011 J+	0.094	0.10
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.018	0.0087	0.015 JN	0.018	0.018 JN	0.00042 J+	< 0.00013 U	0.042	0.024
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0016 J	0.00066 J	0.0012 J	0.0013 J	0.0016 J	0.00041 J	0.00015 J	0.0011 J	0.0015 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		< 0.00043 U	0.00074 J	0.00089 J	0.00095 J	0.00093 J	0.00017 J	0.00011 J	0.0011 J	0.00089 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0058	0.0011 J	0.0024 J	0.0023 J	0.0044 J	< 0.000078 U	< 0.000035 U	0.0030 J	0.0029 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0032 J	0.0022 J	0.0033 J	0.0050	0.0040 J	0.00015 JN	0.000069 J	0.0050	0.0054
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		< 0.00055 U	0.00057 J	0.00096 J	0.0013 J	0.0018 J	< 0.000075 U	0.000037 J	0.0017 J	0.0022 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0025 J	0.0017 J	0.0021 J	0.0030 J	0.0026 J	0.00033 J	0.00016 J	0.0026 J	0.0024 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00039 U	< 0.00037 U	< 0.00038 U	< 0.00035 U	0.00032 J+	0.00049 J+	< 0.00029 U	0.00022 J+	0.00022 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.00049 J	0.00038 J	0.00032 JN	0.00057 J	< 0.00017 U	0.000066 JN	< 0.000023 U	0.00076 J	0.00045 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.0014 J	0.00058 J	0.00094 J	0.00090 J	0.0023 J	0.00020 J	0.000076 J	0.0022 J	0.0018 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.00058 U	< 0.00024 U	< 0.00026 U	< 0.00030 U	0.0016 J	< 0.000076 U	< 0.000035 U	0.0015 J	0.0012 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		< 0.00021 U	0.00045 J	0.00058 JN	0.00069 J	0.0037 J	0.00012 J	< 0.000022 U	0.0037 J	0.0023 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00055 J	0.00039 JN	0.00040 JN	0.00046 JN	0.00030 JN	< 0.000029 U	< 0.000025 U	0.00032 JN	0.00025 JN
2,3,7,8-TCDF	51207-31-9	µg/kg		0.00097 J	0.00077 JN	0.0017	0.0020	0.0066 J	< 0.00011 U	< 0.000056 U	0.0064	0.0042
OCDD	3268-87-9	µg/kg		0.75	0.37	0.73	1.1	1.3	0.016 J+	0.012 J+	0.85	0.94
OCDF	39001-02-0	µg/kg		0.075	0.033	0.064	0.058	0.052	< 0.0014 U	< 0.00039 U	0.050	0.035
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0036	0.0023	0.0033	0.0043	0.006	0.00026	0.00007	0.006	0.0049
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0036	0.002	0.0025	0.004	0.0058	0.0002	0.00007	0.0059	0.0048
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0036	0.0018	0.0023	0.0038	0.0056	0.00017	0.000056	0.0057	0.0047
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg		< 4.5 U	< 4.3 U	< 4.0 U	< 3.6 U	< 3.8 U	< 2.8 U	< 2.8 U	< 3.2 U	< 3.0 U
Aroclor 1221	11104-28-2	µg/kg		< 4.5 U	< 4.3 U	< 4.0 U	< 3.6 U	< 3.8 U	< 2.8 U	< 2.8 U	< 3.2 U	< 3.0 U
Aroclor 1232	11141-16-5	µg/kg		< 4.5 UJ	< 4.3 UJ	< 4.0 UJ	< 3.6 UJ	< 3.8 U	< 2.8 UJ	< 2.8 UJ	< 3.2 U	< 3.0 U
Aroclor 1242	53469-21-9	µg/kg		< 4.5 U	< 4.3 U	< 4.0 U	< 3.6 U	< 3.8 U	< 2.8 U	< 2.8 U	< 3.2 U	< 3.0 U
Aroclor 1248	12672-29-6	µg/kg		< 4.5 U	< 4.3 U	2.5 J	11 J	< 3.8 U	< 2.8 U	< 2.8 U	330	320
Aroclor 1254	11097-69-1	µg/kg		< 4.5 U	< 4.3 U	< 4.0 U	< 3.6 U	97	< 2.8 U	< 2.8 U	< 3.2 U	< 3.0 U
Aroclor 1260	11096-82-5	µg/kg		1.1 J	0.90 J	< 4.0 U	< 3.6 U	< 3.8 U	< 2.8 U	< 2.8 U	< 3.2 U	< 3.0 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		1.1	0.9	2.5	11	97	< 2.8 UJ	< 2.8 UJ	330	320
Pesticides												
2,4-DDD	53-19-0	µg/kg		0.405 J	0.353 J	0.332 J	0.511 J	0.535 J	< 0.027 U	< 0.017 U	0.800 J	1.16 J
2,4-DDE	3424-82-6	µg/kg		0.076 JN	0.0872 J	0.104 J	0.146 J	0.0919 J	< 0.028 U	< 0.0165 U	0.123 J	0.191 J
2,4-DDT	789-02-6	µg/kg		0.155 J	0.081 JN	0.140 J	0.183 J	0.111 J	< 0.020 U	< 0.017 U	0.173 J	0.118 J
4,4'-DDD	72-54-8	µg/kg		0.903 J	0.952 J	1.07 J	2.12	1.26 J	< 0.029 U	< 0.024 U	2.29	3.26
4,4'-DDE	72-55-9	µg/kg		1.99 J	2.21	2.50	4.88	1.82 J	< 0.037 U	< 0.0305 U	3.34	3.09
4,4'-DDT	50-29-3	µg/kg		0.29 JN	0.25 JN	0.326 J	0.314 J	0.265 J	< 0.030 U	< 0.0476 U	0.479 J	0.309 J
DDx (b)	T_DDx (PDI)	µg/kg		3.82	3.93	4.47	8.15	4.08	< 0.037 U	< 0.0476 U	7.21	8.13
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg		54	8.7 J	13 J	21	170	1.2 J	0.88 J	91	360
Acenaphthene	83-32-9	µg/kg		50	9.4 J	15 J	51	51	0.98 J	< 6.6 U	45	350
Acenaphthylene	208-96-8	µg/kg		8.5 J	6.9 J	12 J	16 J	50	0.89 J	< 6.6 U	35	130
Anthracene	120-12-7	µg/kg		60	20 J	31	44	67	1.9 J	< 6.6 U	70	330
Benz(a)anthracene	56-55-3	µg/kg		44	38	74	59	130	2.9 J	< 6.6 U	150	490
Benzo(a)pyrene	50-32-8	µg/kg		46	40	84	60	190	< 7.0 U	< 6.6 U	220	570
Benzo(b)fluoranthene	205-99-2	µg/kg		66	65	120	79	270	2.7 J	< 6.6 U	260	630
Benzo(g,h,i)perylene	191-24-2	µg/kg		41	40	83	57	250	1.7 J	< 6.6 U	260	520
Benzo(k)fluoranthene	207-08-9	µg/kg		22 J	21	42	28	80	< 7.0 U	< 6.6 U	110	260
Chrysene	218-01-9	µg/kg		61	54	100	76	300	2.9 J	< 6.6 U	220	690
Dibenz(a,h)anthracene	53-70-3	µg/kg		6.9 J	6.7 J	12 J	8.1 J	34 J	< 7.0 U	< 6.6 U	40	58
Fluoranthene	206-44-0	µg/kg		160	130	180	210	520	4.9 J	< 6.6 U	390	1400
Fluorene	86-73-7	µg/kg		49	15 J	20	37	48 J	1.5 J	0.73 J	31	190
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		43	41	84	55	250	1.4 J	< 6.6 U	250	470
Naphthalene	91-20-3	µg/kg		150	25	41	61	450	3.3 J	2.9 J	240	840
Phenanthrene	85-01-8	µg/kg		140	67	95	220	360	6.1 J	2.0 J	280	1700
Pyrene	129-00-0	µg/kg		150	130	200	230	520	9.5	1.8 J	510	1900
Total PAHs (b)	T_PAH (PDI)	µg/kg		1200	720	1200	1300	3700	45	15	3200	11000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		68	61	120	88	290	4.2	< 6.6 U	330	790

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S009	SC-S009	SC-S009	SC-S009	SC-S010	SC-S010	SC-S010	SC-S010	SC-S010
		Sample ID	PDI-SC-S009-2TO4	PDI-SC-S009-4TO6	PDI-SC-S009-6TO8	PDI-SC-S009-8TO10	PDI-SC-S010-0TO2	PDI-SC-S010-10.8TO13.4	PDI-SC-S010-13.4TO14.4	PDI-SC-S010-2TO4	PDI-SC-S010-4TO6.4
		Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	10.8-13.4 ft	13.4-14.4 ft	2-4 ft	4-6.4 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	43.2	45.6	49.1	54.8	50.7	67.7	71.3	60.8	66.2
Total Solids@70C	TSOLID70	%	43	46	49	54	53	68	71	62	65
Total Solids (%)	%SOLID	%	43.3	45.9	50	55.5	51.4	69.1	76.7	62.1	64.8
Clay	GS-Clay	%	16.2	22.0	21.6	20.5	7.1	9.7	4.2	7.1	6.4
Gravel	GS-Gravel	%	0	0	0	0	0	0	3.2	10.6	33.8
Sand, Coarse	GS-Csand	%	0	0	0	0.2	1.7	0	0.7	2.5	2.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	5.437	4.612	4.903	9.286	43.64	34.78	47	36.29	32.61
Sand, Fine (#230) (d)	GS-Fsand	%	7.9	6.4	7.2	12.7	46.9	37.8	48.8	38.4	35.3
Sand, Medium	GS-Msand	%	0.1	0.1	0.1	0.1	7.9	2.3	8.8	12.7	10.0
Silt (#200) (d)	GS-Silt-200	%	78.26	73.28	73.29	70.01	39.65	53.21	36.09	30.90	14.78
Silt (#230) (d)	GS-Silt	%	75.8	71.5	71.0	66.6	36.4	50.2	34.3	28.8	12.1
Percent Fines (e)	GS-FINES	%	94.46	95.28	94.89	90.51	46.75	62.91	40.29	38	21.18
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	58000	55000	49000	47000	43000	15000	16000	25000	24000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S010	SC-S010	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011
		Sample ID	PDI-SC-S010-6.4TO8.4	PDI-SC-S010-8.4TO10.8	PDI-SC-S011-0TO2	PDI-SC-S011-10TO12	PDI-SC-S011-12TO14.5	PDI-SC-S011-14.5TO16.8	PDI-SC-S011-14.5TO16.8D	PDI-SC-S011-16.8TO17.9
		Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
		Sample Type Code	N	N	N	N	N	N	FD	N
		Depth	6.4-8.4 ft	8.4-10.8 ft	0-2 ft	10-12 ft	12-14.5 ft	14.5-16.8 ft	14.5- ft	16.8-17.9 ft
Chemical	**CAS_RN**	**Units**								
Dioxins and Furans										
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.013	0.0027 J	0.080	0.21	0.20	0.44	0.53	0.090
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.0074	0.00064 JN	0.014	0.031	0.033	0.082	0.088	0.033
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	< 0.00010 U	0.00013 J	0.0010 J	0.0022 J	0.0028 J	0.0072	0.0072	0.0039
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	< 0.00016 U	0.00013 J	0.00090 J	0.0018 J	0.0014 J	0.0030 J	0.0034 J	0.00070 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	< 0.000081 U	0.000073 JN	0.0016 J	0.0044	0.010	0.024	0.023	0.014
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.00059 J	0.00015 J	0.0029 J	0.012	0.011	0.018	0.021	0.0035 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.00043 JN	0.000057 J	0.00075 JN	0.0029 J	0.0038 J	0.0090	0.0084	0.0052
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00036 J	0.00015 J	0.0022 J	0.0042 J	0.0034 J	0.0064	0.0074	0.0020 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.00021 U	0.00017 J	0.00078 J+	< 0.00044 U	< 0.00040 U	< 0.00044 U	0.00074 J	0.00046 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.000087 J	< 0.000026 U	0.00040 JN	0.00082 JN	0.00069 J	0.0014 JN	0.0017 JN	0.00094 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.00010 JN	0.000052 J	0.00068 J	0.0028 J	0.0050	0.011	0.010	0.0026 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.00016 J	0.000037 J	0.00035 JN	0.00094 J	0.0010 J	0.0021 J	0.0020 J	0.00054 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.00013 J	< 0.000021 U	0.00046 J	0.0018 J	0.0027 J	0.0055	0.0051	0.00087 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.000073 JN	0.00019 JN	0.00036 JN	0.00073 J	0.00042 JN	0.00097 JN	0.0011	0.0012
2,3,7,8-TCDF	51207-31-9	µg/kg	0.00024 J	0.000072 J	0.00098 J	0.0036	0.0052 J	0.013	0.010	0.0018
OCDD	3268-87-9	µg/kg	0.16	0.031	0.73	2.3	2.2	5.4 J	6.2 J	1.4
OCDF	39001-02-0	µg/kg	0.016	0.0013 J	0.050	0.089	0.088	0.31	0.32	0.076
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.00065	0.00033	0.0031	0.0083	0.0087	0.019	0.02	0.007
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.00055	0.00021	0.0025	0.0079	0.0085	0.018	0.02	0.007
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.00052	0.00012	0.0023	0.0075	0.0083	0.018	0.019	0.007
Polychlorinated Biphenyls (PCBs)										
Aroclor 1016	12674-11-2	µg/kg	< 2.7 U	< 2.7 U	< 4.6 U	< 3.4 U	< 3.2 UJ	< 3.4 U	< 33 U	< 2.8 U
Aroclor 1221	11104-28-2	µg/kg	< 2.7 U	< 2.7 U	< 4.6 U	< 3.4 U	< 3.2 UJ	< 3.4 U	< 33 U	< 2.8 U
Aroclor 1232	11141-16-5	µg/kg	< 2.7 U	< 2.7 U	< 4.6 UJ	< 3.4 UJ	< 3.2 UJ	< 3.4 UJ	< 33 UJ	< 2.8 UJ
Aroclor 1242	53469-21-9	µg/kg	< 2.7 U	< 2.7 U	< 4.6 U	< 3.4 U	< 3.2 UJ	< 3.4 U	< 33 U	< 2.8 U
Aroclor 1248	12672-29-6	µg/kg	13	3.6	3.3 J	130	97 J	590	650	< 2.8 U
Aroclor 1254	11097-69-1	µg/kg	< 2.7 U	< 2.7 U	< 4.6 U	< 3.4 U	< 3.2 UJ	< 3.4 U	< 33 U	< 2.8 U
Aroclor 1260	11096-82-5	µg/kg	< 2.7 U	< 2.7 U	< 4.6 U	< 3.4 U	< 3.2 UJ	< 3.4 U	< 33 U	9.7
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	13	3.6	3.3	130	97	590	650	9.7
Pesticides										
2,4-DDD	53-19-0	µg/kg	0.106 J	< 0.019 UJ	0.268 J	1.21 J	1.05 J	1.67 J	1.73	1.07 J
2,4-DDE	3424-82-6	µg/kg	< 0.0083 U	< 0.0097 U	< 0.045 U	0.248 J	0.254 J	0.457 J	0.460 J	0.128 J
2,4-DDT	789-02-6	µg/kg	< 0.015 UJ	< 0.018 UJ	< 0.030 UJ	0.170 J	0.156 J	0.20 JN	0.312 J	0.0862 J
4,4'-DDD	72-54-8	µg/kg	0.334 J	0.0586 J	0.907 J	4.07	3.71	5.37	5.38	3.18
4,4'-DDE	72-55-9	µg/kg	0.209 J	< 0.0464 U	1.98 J	6.15	5.72	8.96	8.71	1.26 J
4,4'-DDT	50-29-3	µg/kg	< 0.0563 UJ	< 0.027 UJ	0.216 J	0.533 J	0.463 J	0.809 J	0.835 J	0.0906 J
DDx (b)	T_DDx (PDI)	µg/kg	0.677	0.0818	3.39	12.4	11.4	17.5	17.4	5.81
Semivolatile Organics										
2-Methylnaphthalene	91-57-6	µg/kg	26	37	17 J	150	140	230	180	100
Acenaphthene	83-32-9	µg/kg	50	8.3	25	200	190	370	300	130 J
Acenaphthylene	208-96-8	µg/kg	52	8.1	27	68	52	59	67	80
Anthracene	120-12-7	µg/kg	170	21	55	280	220	370	270	150 J
Benz(a)anthracene	56-55-3	µg/kg	290	53	98	840	220	520	420	290 J
Benzo(a)pyrene	50-32-8	µg/kg	330	41	87	590	180	350	290	250 J
Benzo(b)fluoranthene	205-99-2	µg/kg	320	42	120	700	240	530	430	280 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	260	27	100	390	180	300	260	160 J
Benzo(k)fluoranthene	207-08-9	µg/kg	90	19	37	340	71	140	110	80 J
Chrysene	218-01-9	µg/kg	340	60	150	1100	280	600	470	270 J
Dibenz(a,h)anthracene	53-70-3	µg/kg	34	5.1 J	12 J	82	46	81	68	36
Fluoranthene	206-44-0	µg/kg	390	83	260	740	610	1200	890	510 J
Fluorene	86-73-7	µg/kg	38	6.0 J	31	210	160	380	310	78
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	210	27	100	430	180	310	260	190 J
Naphthalene	91-20-3	µg/kg	74	140	53	290	220	290	220	280 J
Phenanthrene	85-01-8	µg/kg	510	62	160	890	900	1500	1100	440 J
Pyrene	129-00-0	µg/kg	880	120	290	830	690	1200	970	660 J
Total PAHs (b)	T_PAH (PDI)	µg/kg	4100	760	1600	8100	4600	8400	6600	4000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	450	59	130	870	290	570	470	360

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S010	SC-S010	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011
		Sample ID	PDI-SC-S010-6.4TO8.4	PDI-SC-S010-8.4TO10.8	PDI-SC-S011-0TO2	PDI-SC-S011-10TO12	PDI-SC-S011-12TO14.5	PDI-SC-S011-14.5TO16.8	PDI-SC-S011-14.5TO16.8D	PDI-SC-S011-16.8TO17.9
		Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018
		Sample Type Code	N	N	N	N	N	N	FD	N
		Depth	6.4-8.4 ft	8.4-10.8 ft	0-2 ft	10-12 ft	12-14.5 ft	14.5-16.8 ft	14.5- ft	16.8-17.9 ft
Chemical	**CAS_RN**	**Units**								
Other										
Total Solids@104C	TSOLID	%	73.7	72.5	43.4	58.2	59.7	57.5	57.3	70.7
Total Solids@70C	TSOLID70	%	72	75	44	60	61	58	59	71
Total Solids (%)	%SOLID	%	74.2	74.1	44.9	60	59.7	57.8	57.6	70.6
Clay	GS-Clay	%	5.8	5.3 L	15.0	17.4	15.7	13.2		4.8
Gravel	GS-Gravel	%	3.3	0	0	0	0	0		0
Sand, Coarse	GS-Csand	%	0.3	0	0.1	0.1	0.5	2.4		0.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	54.81	60.63	7.054	14.57	7.832	7.295		62.06
Sand, Fine (#230) (d)	GS-Fsand	%	56.9	63.2	9.6	17.3	11.5	9.8		66.0
Sand, Medium	GS-Msand	%	10.5	6.8	0.4	0.9	0.3	0.2		1.8
Silt (#200) (d)	GS-Silt-200	%	25.28	27.26	77.44	67.02	75.56	77.00		30.83
Silt (#230) (d)	GS-Silt	%	23.2	24.7	74.9	64.3	71.9	74.5		26.9
Percent Fines (e)	GS-FINES	%	31.08	32.56	92.44	84.42	91.26	90.2		35.63
Liquid Limit	GS-LL	None								
Plasticity Index	GS-PI	None								
Plasticity Limit	GS-PL	None								
Total Organic Carbon	TOC	mg/kg	13000	10000	56000	38000	39000	50000	49000	23000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
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b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

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TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011	SC-S014	SC-S014	SC-S014	SC-S015	SC-S015
			Sample ID	PDI-SC-S011-17.9TO18.9	PDI-SC-S011-2TO4	PDI-SC-S011-4TO6	PDI-SC-S011-6TO8	PDI-SC-S011-8TO10	PDI-SC-S014-0TO2	PDI-SC-S014-2TO4	PDI-SC-S014-4TO6	PDI-SC-S015-0TO2	PDI-SC-S015-10TO11.4
			Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	7/26/2018	7/26/2018	7/26/2018	8/13/2018	8/13/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	17.9-18.9 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	10-11.4 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.090	0.084	0.30	0.19	0.26	0.00094 J	0.00083 J	0.27	0.086	0.36
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.060	0.014	0.031	0.024	0.035	0.00024 J+	0.0034 J	0.0018 J	0.013 JN	0.066
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0023 J	0.0012 J	0.0014 J	0.0017 J	0.0024 J	0.000069 JN	0.0015 J	0.00076 J	0.0011 J	0.0059
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00073 JN	0.00085 J	0.00083 J	0.0019 J	0.0024 J	< 0.000097 U	< 0.00010 U	0.00099 J	0.00096 J	0.0023 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0033 J	0.0042 J	0.0021 J	0.0043 J	0.0043 J	0.000088 J	0.00048 J	< 0.000072 U	0.0024 J	0.019
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0041	0.0033 J	0.0048	0.014	0.018	0.000051 JN	0.000070 J	0.0022 J	0.0031 J	0.015
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0054	0.0014 J	0.0011 J	0.0020 J	0.0026 J	< 0.000049 U	0.00028 J	0.00011 J	< 0.00023 U	0.0071
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0021 J	0.0022 J	0.0024 J	0.0047 J	0.0056	0.00012 J	0.00017 J	0.0037	0.0022 J	0.0055
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		0.00036 JN	< 0.00023 U	< 0.00039 U	< 0.00032 U	0.00046 J+	< 0.000025 U	0.000083 J	< 0.000036 U	0.00078 J+	0.00080 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.00064 J	0.00040 JN	0.00044 J	0.0012 J	0.0014 J	< 0.000054 U	< 0.000044 U	0.00015 J	0.00041 JN	0.0010 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.0026 J	0.0043 J	0.0015 J	0.0020 JN	0.0024 J	0.000051 JN	< 0.000034 U	< 0.000034 U	0.00091 JN	0.0083
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0014 J	< 0.00026 U	0.00033 JN	0.00096 JN	0.0013 J	< 0.000030 U	< 0.000057 U	0.000053 JN	< 0.00025 U	0.0016 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0017 J	0.0039 J	0.00068 J	0.0011 JN	0.0016 J	< 0.000034 U	< 0.000037 U	< 0.000036 U	0.00073 J	0.0039 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00047 JN	0.00034 JN	0.00037 JN	0.00085 J	0.00058 JN	< 0.000038 U	< 0.000037 U	< 0.000037 U	< 0.000047 U	0.00084
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0025	0.016	0.0018	0.0053	0.0039	0.000075 JN	< 0.000022 U	< 0.000026 U	0.0012	0.0089
OCDD	3268-87-9	µg/kg		1.6	0.79	4.6 J	1.6	2.7	0.0078	0.0071	7.6 J	0.74	4.4 J
OCDF	39001-02-0	µg/kg		0.099	0.054	0.46	0.069	0.10	0.0017 J	0.034	0.029	0.047	0.26
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0057	0.0061	0.0073	0.0084	0.01	0.000077	0.0002	0.0059	0.003	0.015
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0054	0.0055	0.007	0.0081	0.0099	0.000062	0.0002	0.0059	0.0027	0.014
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0051	0.0053	0.0068	0.0079	0.0096	0.000035	0.00018	0.0059	0.0025	0.014
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.8 U	< 3.6 U	< 3.7 U	< 3.8 UJ	< 3.5 U	< 2.6 UJ	< 2.7 UJ	< 2.7 UJ	< 4.4 U	< 3.4 U
Aroclor 1221	11104-28-2	µg/kg		< 2.8 U	< 3.6 U	< 3.7 U	< 3.8 UJ	< 3.5 U	< 2.6 U	< 2.7 U	< 2.7 U	< 4.4 U	< 3.4 U
Aroclor 1232	11141-16-5	µg/kg		< 2.8 UJ	< 3.6 UJ	< 3.7 UJ	< 3.8 UJ	< 3.5 UJ	< 2.6 U	< 2.7 U	< 2.7 U	< 4.4 UJ	< 3.4 UJ
Aroclor 1242	53469-21-9	µg/kg		< 2.8 U	< 3.6 U	< 3.7 U	< 3.8 UJ	< 3.5 U	< 2.6 U	< 2.7 U	< 2.7 U	< 4.4 U	< 3.4 U
Aroclor 1248	12672-29-6	µg/kg		< 2.8 U	6.6 J	4.6 J	7.9 J	13 J	< 2.6 UJ	< 2.7 UJ	< 2.7 UJ	< 4.4 U	93
Aroclor 1254	11097-69-1	µg/kg		< 2.8 U	< 3.6 U	< 3.7 U	< 3.8 UJ	< 3.5 U	< 2.6 U	< 2.7 U	< 2.7 U	< 4.4 U	< 3.4 U
Aroclor 1260	11096-82-5	µg/kg		18	< 3.6 U	< 3.7 U	< 3.8 UJ	< 3.5 U	< 2.6 U	< 2.7 U	< 2.7 U	53	< 3.4 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		18	6.6	4.6	7.9	13	< 2.6 UJ	< 2.7 UJ	< 2.7 UJ	53	93
Pesticides													
2,4-DDD	53-19-0	µg/kg		1.30 J	0.481 J	0.939 J	0.593 J	0.494 J	< 0.095 U	< 0.028 U	< 0.0097 U	0.386 J	0.704 J
2,4-DDE	3424-82-6	µg/kg		0.272 J	0.090 JN	0.197 J	0.228 J	0.207 J	0.130 J	0.0392 J	< 0.0086 U	0.141 J	0.244 J
2,4-DDT	789-02-6	µg/kg		0.097 JN	0.127 J	0.205 J	1.37 J	< 0.034 U	0.095 JN	< 0.017 U	< 0.0244 U	< 0.070 U	0.20 JN
4,4'-DDD	72-54-8	µg/kg		3.76	1.38 J	3.21	1.55 J	1.58 J	0.044 JN	< 0.017 U	< 0.010 U	0.997 J	1.92
4,4'-DDE	72-55-9	µg/kg		2.20	3.33	5.36	3.97	4.82	0.20 JN	0.0811 J	< 0.0167 U	2.31 J	3.93 J
4,4'-DDT	50-29-3	µg/kg		0.14 JN	0.401 J	0.422 J	0.690 J	0.483 J	0.40 JN	< 0.150 U	< 0.0821 U	< 0.22 U	< 0.352 U
DDx (b)	T_DDx (PDI)	µg/kg		7.77	5.81	10.3	8.4	7.6	0.917	0.195	< 0.0821 U	3.94	7.17
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		270	23	38	43	60	0.67 J	1.2 J	0.93 J	13 J	130 J
Acenaphthene	83-32-9	µg/kg		150	29	70	65	91	< 6.5 U	< 6.8 U	< 6.8 U	20 J	290 J
Acenaphthylene	208-96-8	µg/kg		51	21	37	48	45	1.9 J	< 6.8 U	< 6.8 U	17 J	32 J
Anthracene	120-12-7	µg/kg		77	43	68	110	110	0.85 J	< 6.8 U	< 6.8 U	70 J	220 J
Benz(a)anthracene	56-55-3	µg/kg		89	89	86	240	160	2.4 J	< 6.8 U	< 6.8 U	97 J	290 J
Benzo(a)pyrene	50-32-8	µg/kg		78	74	71	190	120	< 6.5 U	< 6.8 U	< 6.8 U	89 J	330 J
Benzo(b)fluoranthene	205-99-2	µg/kg		100	110	99	310	190	1.8 J	0.98 J	< 6.8 U	87 J	300 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		89	89	82	190	130	0.69 J	< 6.8 U	< 6.8 U	89 J	180 J
Benzo(k)fluoranthene	207-08-9	µg/kg		30	37	31	84	56	< 6.5 U	< 6.8 U	< 6.8 U	27 J	110 J
Chrysene	218-01-9	µg/kg		120	130	120	320	210	2.0 J	< 6.8 U	< 6.8 U	130 J	330 J
Dibenz(a,h)anthracene	53-70-3	µg/kg		19	25	26	58	37	< 6.5 U	< 6.8 U	< 6.8 U	14 J	28 J
Fluoranthene	206-44-0	µg/kg		320	230	250	590	380	4.0 J	< 6.8 U	< 6.8 U	210 J	760 J
Fluorene	86-73-7	µg/kg		130	36	71	84	92	1.2 J	1.2 J	1.2 J	28 J	260 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		79	94	85	220	130	1.6 J	< 6.8 U	< 6.8 U	89 J	190 J
Naphthalene	91-20-3	µg/kg		500	59	79	130	140	1.7 J	2.2 J	2.2 J	44 J	200 J
Phenanthrene	85-01-8	µg/kg		460	180	280	430	360	3.3 J	4.0 J	3.0 J	140 J	1100 J
Pyrene	129-00-0	µg/kg		400	250	290	640	440	4.5 J	1.6 J	< 6.8 U	380 J	1400 J
Total PAHs (b)	T_PAH (PDI)	µg/kg		3000	1500	1800	3800	2800	33	18	18	1500	6200
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		120	130	120	330	210	3.8	3.5	< 6.8 U	130	440

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S011	SC-S011	SC-S011	SC-S011	SC-S011	SC-S014	SC-S014	SC-S014	SC-S015	SC-S015
		Sample ID	PDI-SC-S011-17.9TO18.9	PDI-SC-S011-2TO4	PDI-SC-S011-4TO6	PDI-SC-S011-6TO8	PDI-SC-S011-8TO10	PDI-SC-S014-0TO2	PDI-SC-S014-2TO4	PDI-SC-S014-4TO6	PDI-SC-S015-0TO2	PDI-SC-S015-10TO11.4
		Sample Date	8/10/2018	8/10/2018	8/10/2018	8/10/2018	8/10/2018	7/26/2018	7/26/2018	7/26/2018	8/13/2018	8/13/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	17.9-18.9 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	10-11.4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	69.3	54.3	53.2	52.1	54.0	75.4	71.6	71.2	43.8	58.7
Total Solids@70C	TSOLID70	%	70	52	53	52	54	72	73	73	45	59
Total Solids (%)	%SOLID	%	67.2	53.5	53.5	52.6	54.1	74.7	69.4	70.3	46	57.4
Clay	GS-Clay	%	5.9	15.7	19.8	20.2	17.5	8.0	7.5	7.6	18.2	15.2
Gravel	GS-Gravel	%	0	0	0	0	0	2.5	0	0	0	0
Sand, Coarse	GS-Csand	%	2.8	0	0	0.1	1.9	0.4	0	0	0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	44.16	7.766	6.885	6.3	7.886	55.92	47.86	45.23	5.621	12.56
Sand, Fine (#230) (d)	GS-Fsand	%	46.3	10.6	10.0	8.2	10.8	60.0	51.8	50.0	7.9	15.2
Sand, Medium	GS-Msand	%	3.7	0	0	0.1	0.2	1.6	0.1	0	0.1	0.7
Silt (#200) (d)	GS-Silt-200	%	43.43	76.53	73.31	73.29	72.61	31.57	44.53	47.16	76.07	71.53
Silt (#230) (d)	GS-Silt	%	41.3	73.7	70.2	71.4	69.7	27.5	40.6	42.4	73.8	68.9
Percent Fines (e)	GS-FINES	%	49.33	92.23	93.11	93.49	90.11	39.57	52.03	54.76	94.27	86.73
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	29000	41000	60000	52000	53000	6000	6300	6900	59000	48000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S015	SC-S015	SC-S015	SC-S015	SC-S015	SC-S019	SC-S019	SC-S019	SC-S019
			Sample ID	PDI-SC-S015-11.4TO12.4	PDI-SC-S015-2TO4	PDI-SC-S015-4TO6	PDI-SC-S015-6TO8	PDI-SC-S015-8TO10	PDI-SC-S019-0TO2	PDI-SC-S019-10TO12	PDI-SC-S019-10TO12D	PDI-SC-S019-12TO13.7
			Sample Date	8/13/2018	8/13/2018	8/13/2018	8/13/2018	8/13/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018
			Sample Type Code	N	N	N	N	N	N	N	FD	N
			Depth	11.4-12.4 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	10-12 ft	10- ft	12-13.7 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.46	0.11	0.16	0.49	0.33	0.18	0.12	0.11	0.071
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.077	0.018	0.018	0.060	0.058	0.041	0.058	0.054	0.057
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.0074	0.0012 J	0.0013 J	0.0050	0.0049	0.0034 J	0.0040 J	0.0037 J	0.0022 J
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.0029 J	0.0011 J	0.0015 J	0.0040 J	0.0021 J	0.0013 J	0.0010 J	0.0010 J	0.00058 J+
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.025	0.0021 J	0.0030 J	0.019	0.013	0.0086	0.0073	0.0059	0.0035 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.017	0.0039 J	0.010	0.032	0.019	0.0068	0.0057	0.0053	0.0033 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.0072	0.0010 J	0.0015 J	0.0061	0.0057	0.0042 J	0.0067	0.0059	0.0064
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0064	0.0029 J	0.0041 J	0.010	0.0061	0.0033 J	0.0030 J	0.0028 J	0.0018 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	0.00074 J+	0.00054 J+	0.00059 J+	0.00075 J+	0.00082 J+	< 0.0017 U	< 0.0016 U	< 0.0012 U	< 0.0013 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.0018 J	0.00055 J	0.00094 J	0.0024 J	0.0013 J	0.00062 J	< 0.00020 U	0.00074 J	0.00057 J
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.010	0.0010 J	0.0012 JN	0.0068	0.0056	0.0037 J	0.0046	0.0028 J	0.0014 J+
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.0019 J	< 0.00023 U	< 0.00040 U	0.0018 J	0.0015 J	0.00092 J	0.0016 J	0.0013 J	0.0015 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0054	0.00060 J	0.00073 JN	0.0033 J	0.0028 J	0.0015 J	0.0031 J	0.0019 J	0.0015 J
2,3,7,8-TCDD		1746-01-6	µg/kg	0.0017	0.00029 JN	0.00043 JN	0.00080 J	0.00066 J	0.00056 J	0.00048 JN	0.00044 J	0.00031 JN
2,3,7,8-TCDF		51207-31-9	µg/kg	0.014	0.0012 JN	0.0028	0.0064	0.0049	0.0025	0.0047	0.0024	0.0016
OCDD		3268-87-9	µg/kg	5.9 J	0.97	1.4	4.6 J	3.8 J	2.7	2.0	1.9	1.1
OCDF		39001-02-0	µg/kg	0.26	0.060	0.055	0.14	0.15	0.12	0.12	0.13	0.065
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.02	0.0039	0.0062	0.019	0.013	0.0077	0.0071	0.0066	0.005
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.02	0.0038	0.0057	0.019	0.013	0.0077	0.0068	0.0066	0.0047
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.02	0.0036	0.0055	0.019	0.013	0.0076	0.0065	0.0066	0.0046
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 3.1 U	< 3.8 U	< 3.6 UJ	< 3.5 U	< 3.4 U	22 J	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1221		11104-28-2	µg/kg	< 3.1 U	< 3.8 U	< 3.6 UJ	< 3.5 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1232		11141-16-5	µg/kg	< 3.1 UJ	< 3.8 UJ	< 3.6 UJ	< 3.5 UJ	< 3.4 UJ	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1242		53469-21-9	µg/kg	< 3.1 U	< 3.8 U	< 3.6 UJ	< 3.5 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1248		12672-29-6	µg/kg	< 3.1 U	< 3.8 U	4.5 J	< 3.5 U	59	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1254		11097-69-1	µg/kg	< 3.1 U	< 3.8 U	< 3.6 UJ	10	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1260		11096-82-5	µg/kg	11	2.4 J	< 3.6 UJ	< 3.5 U	< 3.4 U	18	140	96	8.6
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	11	2.4	4.5	10	59	40	140	96	8.6
Pesticides												
2,4-DDD		53-19-0	µg/kg	0.934 J	0.522 J	0.771 J	0.662 J	0.762 J	2.15	8.42 J	14.6 J	54.5
2,4-DDE		3424-82-6	µg/kg	0.31 JN	0.190 J	0.253 J	0.317 J	0.403 J	0.623 J	1.38 J	2.32	2.26
2,4-DDT		789-02-6	µg/kg	0.388 J	0.292 J	0.19 JN	0.15 JN	0.237 J	0.169 J	0.23 JN	0.439 J	6.55
4,4'-DDD		72-54-8	µg/kg	2.86	1.94 J	2.27	2.18	2.76	7.15	16.9	28.1	115
4,4'-DDE		72-55-9	µg/kg	4.95 J	5.36 J	4.48 J	5.92 J	5.31 J	11.8	8.37	13.2	11.9
4,4'-DDT		50-29-3	µg/kg	1.42 J	0.55 JN	< 0.41 U	< 0.36 U	< 0.370 U	0.386 J	0.652 J	0.707 J	34.7
DDx	(b)	T_DDx (PDI)	µg/kg	10.9	8.85	8.17	9.41	9.66	22.3	36	59.4	225
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	330	11 J	26	64	95	300	1200	1000	780
Acenaphthene		83-32-9	µg/kg	2300	25 J	130	110	220	440	650	620	950
Acenaphthylene		208-96-8	µg/kg	63 J	15 J	31 J	33 J	35 J	43	74	79	190
Anthracene		120-12-7	µg/kg	1600	40 J	110	150	180	190	430	500	960
Benz(a)anthracene		56-55-3	µg/kg	960	75 J	220	220	270	180	330	590	1100
Benzo(a)pyrene		50-32-8	µg/kg	510	100 J	200	150	250	160	370 J	660 J	1300
Benzo(b)fluoranthene		205-99-2	µg/kg	630	120 J	250	250	310	170	400 J	670 J	1300
Benzo(g,h,i)perylene		191-24-2	µg/kg	620	54 J	180	120	120	130	380	630	1400
Benzo(k)fluoranthene		207-08-9	µg/kg	250	35 J	77	70	120	55	140	230	470
Chrysene		218-01-9	µg/kg	950	100 J	260	250	340	200	450 J	750 J	1400
Dibenz(a,h)anthracene		53-70-3	µg/kg	88	8.6 J	29	18	17	19	51 J	100 J	150
Fluoranthene		206-44-0	µg/kg	4200	280 J	660	640	730	760	1600	2100	4800
Fluorene		86-73-7	µg/kg	2500	32 J	160	110	190	300	410	450	590
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	510	56 J	170	120	120	130	350 J	590 J	1200
Naphthalene		91-20-3	µg/kg	300	40 J	74	170	160	500	2100	1900	1600
Phenanthrene		85-01-8	µg/kg	9300	130 J	590	540	900	1100	2000	2100	4600
Pyrene		129-00-0	µg/kg	3300	150 J	580	760	790	830	1800	2500	6000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	28000	1300	3700	3800	4800	5500	13000	15000	29000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	810	130	290	230	340	230	530	950	1800

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S015	SC-S015	SC-S015	SC-S015	SC-S015	SC-S019	SC-S019	SC-S019	SC-S019
		Sample ID	PDI-SC-S015-11.4TO12.4	PDI-SC-S015-2TO4	PDI-SC-S015-4TO6	PDI-SC-S015-6TO8	PDI-SC-S015-8TO10	PDI-SC-S019-0TO2	PDI-SC-S019-10TO12	PDI-SC-S019-10TO12D	PDI-SC-S019-12TO13.7
		Sample Date	8/13/2018	8/13/2018	8/13/2018	8/13/2018	8/13/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018
		Sample Type Code	N	N	N	N	N	N	N	FD	N
		Depth	11.4-12.4 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	10-12 ft	10- ft	12-13.7 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	63.0	51.4	53.3	55.7	56.0	56.4	56.9	57.1	58.7
Total Solids@70C	TSOLID70	%	62	51	53	56	58	56	59	59	59
Total Solids (%)	%SOLID	%	58.6	46.6	53.8	52.3	56	56.3	58.3	58.5	58.8
Clay	GS-Clay	%	10.0	18.8	21.7	15.0	16.3	16.7	16.7		20.0
Gravel	GS-Gravel	%	0	0	0	0	0	0.3	0.3		0
Sand, Coarse	GS-Csand	%	0.5	0	0	0	0	0.4	0.3		0
Sand, Fine (#200) (d)	GS-Fsand-200	%	23.05	7.223	6.059	7.222	12.03	11.82	6.211		11.78
Sand, Fine (#230) (d)	GS-Fsand	%	25.9	10.0	8.2	9.1	14.6	15.0	9.0		14.9
Sand, Medium	GS-Msand	%	7.8	0	0.1	0.1	0.8	0.3	0.2		0.3
Silt (#200) (d)	GS-Silt-200	%	58.64	73.97	72.14	77.67	70.86	70.47	76.18		67.91
Silt (#230) (d)	GS-Silt	%	55.8	71.2	70.0	75.8	68.3	67.3	73.4		64.8
Percent Fines (e)	GS-FINES	%	68.64	92.77	93.84	92.67	87.16	87.17	92.88		87.91
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	35000	49000	50000	45000	43000	29000	41000	41000	43000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S019	SC-S019	SC-S019	SC-S019	SC-S019	SC-S022	SC-S022	SC-S022	SC-S023	SC-S023
			Sample ID	PDI-SC-S019-13.7TO14.7	PDI-SC-S019-2TO4	PDI-SC-S019-4TO6	PDI-SC-S019-6TO8	PDI-SC-S019-8TO10	PDI-SC-S022-0TO2	PDI-SC-S022-2TO4	PDI-SC-S022-4TO6	PDI-SC-S023-0TO2	PDI-SC-S023-2TO3.9
			Sample Date	9/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	7/20/2018	7/20/2018	7/20/2018	7/31/2018	7/31/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	13.7-14.7 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-3.9 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.11	0.50	0.53	0.32	0.22	0.0024 J	0.00044 JN	0.00061 J+	0.12	0.33
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.10	0.12	0.15	0.10	0.10	0.00020 JN	< 0.000043 U	< 0.000037 U	0.022	0.077
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0036 J	0.011	0.012	0.0091	0.0070	< 0.00014 U	< 0.000048 U	< 0.000040 U	0.0021 J	0.0069
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00078 J	0.0036 J	0.0034 J	0.0023 J	0.0019 J	< 0.00011 U	< 0.00011 U	< 0.000077 U	0.00095 JN	0.0028 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0072	0.021	0.018	0.021	0.011	< 0.000084 U	< 0.000053 U	< 0.000041 U	0.0087	0.020
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0050	0.018	0.018	0.013	0.0090	0.00012 J+	< 0.000039 U	< 0.000042 U	0.0044 J	0.012
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0098	0.010	0.010	0.010	0.0079	< 0.000082 U	< 0.000053 U	< 0.000042 U	0.0032 J	0.0089
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0023 J	0.0079	0.0066	0.0047	0.0032 J	0.00016 J+	< 0.000025 U	0.00011 JN	0.0024 JN	0.0065
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00094 U	0.0025 J+	< 0.0017 U	0.0018 J+	< 0.0017 U	0.00073 J+	< 0.00050 U	0.00057 J+	< 0.00018 U	< 0.00057 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.00079 J	0.0019 J	0.0017 J	0.0014 J	0.0011 J	< 0.000038 U	< 0.000028 U	< 0.000033 U	0.00048 J	0.0016 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.0026 J	0.0087	0.0067	0.0061	0.0049	0.00029 J+	< 0.00020 U	< 0.00022 U	0.0060	0.010
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0022 J	0.0026 J	0.0025 J	0.0022 J	0.0019 J	< 0.000046 U	< 0.000029 U	< 0.000023 U	0.00067 J	0.0018 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0024 J	0.0049	0.0040 J	0.0046	0.0028 J	< 0.000026 U	< 0.000023 U	< 0.000021 U	0.0021 J	0.0044 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00051 J	0.0011	0.00072 J	0.00077 J	0.00087	0.00036 J	0.00026 JN	< 0.000025 U	0.00033 JN	0.0012
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0019	0.0074	0.0053	0.0061	0.0040	0.000036 JN	< 0.000016 U	< 0.000021 U	0.0037	0.0084
OCDD	3268-87-9	µg/kg		1.7	6.4 J	9.0 J	5.5 J	3.0	0.016	0.0047 J+	0.0054 J	1.4	4.8 J
OCDF	39001-02-0	µg/kg		0.12	0.74	0.73	0.38	0.26	0.00065 J+	< 0.000042 U	< 0.000045 U	0.067	0.24
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0077	0.02	0.02	0.016	0.011	0.00052	0.00029	0.000092	0.0059	0.016
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0077	0.02	0.02	0.016	0.011	0.00052	0.00013	0.000081	0.0054	0.016
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0077	0.02	0.02	0.016	0.011	0.0005	0.0000014	0.000065	0.0052	0.016
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 UJ	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Aroclor 1221	11104-28-2	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 U	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Aroclor 1232	11141-16-5	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 U	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Aroclor 1242	53469-21-9	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 U	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Aroclor 1248	12672-29-6	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 U	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Aroclor 1254	11097-69-1	µg/kg		< 3.2 U	< 3.6 U	< 3.5 U	< 3.5 U	< 3.4 U	< 2.9 U	< 2.9 U	< 2.8 U	3.8 J	16 J
Aroclor 1260	11096-82-5	µg/kg		9.1	22	21	11	46	< 2.9 UJ	< 2.9 U	< 2.8 U	< 3.8 U	< 3.7 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		9.1	22	21	11	46	< 2.9 UJ	< 2.9 U	< 2.8 U	3.8	16
Pesticides													
2,4-DDD	53-19-0	µg/kg		7.21	3.58	2.95	4.05	15.1	< 0.012 UJ	< 0.010 UJ	< 0.028 UJ	0.597	1.43
2,4-DDE	3424-82-6	µg/kg		0.772 J	1.07 J	0.938 J	1.17 J	2.22	< 0.0059 U	< 0.0065 U	< 0.018 U	0.173 J	0.883
2,4-DDT	789-02-6	µg/kg		0.277 J	0.190 J	0.11 JN	0.230 J	0.26 JN	< 0.021 UJ	< 0.014 UJ	< 0.018 UJ	0.137 J	0.198 J
4,4'-DDD	72-54-8	µg/kg		13.7	10.0	9.44	14.0	35.8	< 0.017 UJ	< 0.011 UJ	< 0.014 UJ	1.97	4.14
4,4'-DDE	72-55-9	µg/kg		5.56	13.8	12.7	14.2	16.8	0.015 JN	< 0.0081 U	0.030 JN	3.47	10.7
4,4'-DDT	50-29-3	µg/kg		0.346 J	0.325 J	0.240 J	14.7	1.36 J	< 0.037 UJ	< 0.045 UJ	< 0.053 UJ	0.574 J	0.832 J
DDx (b)	T_DDx (PDI)	µg/kg		27.9	29	26.4	48.4	71.5	0.0335	< 0.045 UJ	0.0565	6.92	18.2
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		770	8500	6600	2600	3100	1.5 J	< 14 U	1.5 J	92	390
Acenaphthene	83-32-9	µg/kg		700	6400	3300	1900	1000	1.1 J	< 14 U	< 14 U	79	400
Acenaphthylene	208-96-8	µg/kg		140	570	300	190	120	0.90 J	< 14 U	< 14 U	35	91
Anthracene	120-12-7	µg/kg		700	6400 J	3000	1800	960	3.3 J	< 14 U	< 14 U	75	240
Benz(a)anthracene	56-55-3	µg/kg		690	3400	1900	1300	510	5.2 J	3.2 J	2.5 J	220	580
Benzo(a)pyrene	50-32-8	µg/kg		790	2900	1500	1000	410	< 7.2 U	< 14 U	< 14 U	260	520
Benzo(b)fluoranthene	205-99-2	µg/kg		800	2800	1400	940	430	< 7.2 U	< 14 U	< 14 U	320	630
Benzo(g,h,i)perylene	191-24-2	µg/kg		770	1400	1000	740	360	3.7 J	< 14 U	< 14 U	160	380
Benzo(k)fluoranthene	207-08-9	µg/kg		280	1000 J	430	350	130	< 7.2 U	< 14 U	< 14 U	90	140
Chrysene	218-01-9	µg/kg		880	4200	2200	1400	710	4.4 J	< 14 U	< 14 U	320	740
Dibenz(a,h)anthracene	53-70-3	µg/kg		110	300 J	150	120	54	< 7.2 U	< 14 U	< 14 U	26	100
Fluoranthene	206-44-0	µg/kg		2800	11000	7000	4300	1700	6.6 J	< 14 U	< 14 U	510	1400
Fluorene	86-73-7	µg/kg		470	4900	2900	1600	850	2.0 J	< 14 U	< 14 U	55	260
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		720	1600	1000	750	320	3.1 J	< 14 U	< 14 U	200	460
Naphthalene	91-20-3	µg/kg		2000	1500	1300	1100	2100	2.8 J	< 14 U	< 14 U	200	870
Phenanthrene	85-01-8	µg/kg		3200	32000	17000	8900	3200	13	3.0 J	2.9 J	430	2100
Pyrene	129-00-0	µg/kg		3600	16000	8500	5400	2200	24	< 14 U	< 14 U	610	1700
Total PAHs (b)	T_PAH (PDI)	µg/kg		19000	100000	59000	34000	18000	75	20	21	3700	11000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		1100	4000	2100	1400	590	4.4	7.3	7.3	360	790

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S019	SC-S019	SC-S019	SC-S019	SC-S019	SC-S022	SC-S022	SC-S022	SC-S023	SC-S023
		Sample ID	PDI-SC-S019-13.7TO14.7	PDI-SC-S019-2TO4	PDI-SC-S019-4TO6	PDI-SC-S019-6TO8	PDI-SC-S019-8TO10	PDI-SC-S022-0TO2	PDI-SC-S022-2TO4	PDI-SC-S022-4TO6	PDI-SC-S023-0TO2	PDI-SC-S023-2TO3.9
		Sample Date	9/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	7/20/2018	7/20/2018	7/20/2018	7/31/2018	7/31/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	13.7-14.7 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-3.9 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	60.3	54.7	55.0	55.5	58.4	67.4	67.7	66.0	49.7	53.8
Total Solids@70C	TSOLID70	%	61	55	57	58	59	68	68	67	51	54
Total Solids (%)	%SOLID	%	61.7	54.8	56.1	57.6	58.8	66.4	65.4	66.5	50.1	53.6
Clay	GS-Clay	%	16.1	18.8	16.6	19.2	17.4	10.0	10.0	12.2	14.5	18.7
Gravel	GS-Gravel	%	0	0	0.2	0.1	0.2	0	0	0	0	0
Sand, Coarse	GS-Csand	%	0	0.1	0.4	0.1	0	0.4	0	0	0	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	16.48	8.461	8.858	8.42	7.525	30.37	39.95	27.77	23.05	20.44
Sand, Fine (#230) (d)	GS-Fsand	%	21.2	11.4	11.6	11.6	10.2	32.6	44.1	34.5	27.7	23.2
Sand, Medium	GS-Msand	%	0.2	0.2	0.3	0.2	0.2	5.3	5.2	0.1	0.4	0.2
Silt (#200) (d)	GS-Silt-200	%	67.21	72.53	73.64	71.97	74.57	53.92	44.74	59.82	62.04	60.45
Silt (#230) (d)	GS-Silt	%	62.5	69.6	70.9	68.8	71.9	51.7	40.6	53.1	57.4	57.7
Percent Fines (e)	GS-FINES	%	83.31	91.33	90.24	91.17	91.97	63.92	54.74	72.02	76.54	79.15
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	36000	40000	39000	38000	40000	9100	6800	8900	28000	25000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S023	SC-S023	SC-S023	SC-S024	SC-S024	SC-S024	SC-S028	SC-S028	SC-S028
		Sample ID	PDI-SC-S023-3.9TO5.3	PDI-SC-S023-5.3TO7.2	PDI-SC-S023-7.2TO8.8	PDI-SC-S024-0TO2	PDI-SC-S024-2TO4	PDI-SC-S024-4TO6	PDI-SC-S028-0TO2	PDI-SC-S028-2TO3.2	PDI-SC-S028-3.2TO5.7
		Sample Date	7/31/2018	7/31/2018	7/31/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	3.9-5.3 ft	5.3-7.2 ft	7.2-8.8 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-3.2 ft	3.2-5.7 ft
Chemical	**CAS_RN**	**Units**									
Dioxins and Furans											
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.060	0.10	0.018	0.10	0.16	0.049	0.049	0.020	0.014
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.025	0.061	0.011	0.017 JN	0.021	0.0075	0.014 JN	0.0038 JN	0.0038
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.0012 J	0.0029 J	0.00064 J	0.0010 J	0.0011 J	0.00044 J	0.00051 J	0.00019 JN	0.00021 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00055 J	0.00095 J	< 0.00024 U	0.00097 J	0.0013 J	0.00053 J+	0.00052 J+	0.00022 JN	0.00029 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.0026 J	0.0094	0.00092 J	0.0028 J	0.0037	0.0015 J	0.0014 J	0.00047 J	< 0.00012 U
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0020 J	0.0039	0.00078 J	0.0052	0.0099	0.0026 J	0.0021 J	0.00088 J	0.00086 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.0019 J	0.0055	0.00090 J	0.0012 J	0.0017 J	0.00065 J	0.00065 J	< 0.000096 U	0.00025 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0012 J	0.0023 J	0.00035 JN	0.0026 J	0.0033 J	0.0014 J	0.0012 J	0.00057 J	0.00070 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.00013 U	< 0.00029 U	< 0.00017 U	0.00011 JN	< 0.00014 U	< 0.000076 U	< 0.00013 U	< 0.000049 U	< 0.000060 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00026 J	0.00042 J	< 0.000095 U	0.00052 J	0.00093 J	0.00031 J	0.00032 J	0.00014 J	0.00016 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.0012 J	0.0054	0.00030 J	0.0013 J	0.0014 J	0.00046 J	< 0.00012 U	0.00014 J	0.00019 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.00039 J	0.0012 J	0.00023 J	0.00065 J	0.00089 J	0.00030 J	0.00036 J	0.00015 J	0.00011 JN
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.00069 J	0.0024 J	0.00023 J	0.00082 J	0.0011 J	0.00040 J	0.00043 J	0.00013 J	< 0.000052 U
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00012 JN	0.00023 JN	< 0.000095 U	0.00020 JN	0.00025 JN	< 0.000076 U	< 0.00010 U	< 0.000094 U	0.000087 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0010	0.0028	0.00023 J	0.0013	0.0012 JN	0.00042 JN	0.00076 J	0.00023 J	0.00029 J
OCDD	3268-87-9	µg/kg	0.97	1.9	0.34	0.95	1.6	0.53	0.52	0.21	0.15
OCDF	39001-02-0	µg/kg	0.065	0.12	0.020	0.051	0.043	0.017	0.026	0.0090	0.0068 J
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.0028	0.0064	0.00087	0.004	0.0061	0.002	0.002	0.00079	0.00074
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.0027	0.0063	0.00084	0.0039	0.0059	0.0019	0.002	0.00076	0.00055
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.0026	0.0062	0.00079	0.0038	0.0058	0.0019	0.0019	0.00072	0.00047
Polychlorinated Biphenyls (PCBs)											
Aroclor 1016	12674-11-2	µg/kg	< 5.6 U	< 6.0 U	< 2.5 U	< 3.4 UJ	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Aroclor 1221	11104-28-2	µg/kg	< 5.6 U	< 6.0 U	< 2.5 U	< 3.4 UJ	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Aroclor 1232	11141-16-5	µg/kg	< 5.6 U	< 6.0 U	< 2.5 U	< 3.4 UJ	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Aroclor 1242	53469-21-9	µg/kg	< 5.6 U	< 6.0 U	< 2.5 U	< 3.4 UJ	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Aroclor 1248	12672-29-6	µg/kg	< 5.6 U	< 6.0 U	< 2.5 U	< 3.4 UJ	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Aroclor 1254	11097-69-1	µg/kg	5.2 J	< 6.0 U	< 2.5 U	< 3.4 UJ	12 J	7.7 J	5.1 J	3.0 J	4.2 J
Aroclor 1260	11096-82-5	µg/kg	< 5.6 U	13 J	< 2.5 U	6.4 J	< 2.7 UJ	< 2.5 UJ	< 3.0 UJ	< 2.5 UJ	< 2.8 UJ
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	5.2	13	< 2.5 U	6.4	12	7.7	5.1	3	4.2
Pesticides											
2,4-DDD	53-19-0	µg/kg	2.38	3.03	0.245 J	0.441 J	0.406 J	0.263 J	0.229 J	0.0757 J	0.178 J
2,4-DDE	3424-82-6	µg/kg	0.219 J	0.719	0.0581 J	0.118 J	0.139 J	0.11 JN	0.0457 J	0.0624 J	0.149 J
2,4-DDT	789-02-6	µg/kg	0.042 JN	0.118 J	0.0212 J	0.156 J	0.210 J	0.245 J	< 0.0610 U	0.131 J	0.115 J
4,4'-DDD	72-54-8	µg/kg	4.83	7.87	0.630	1.03 J	1.15 J	0.723 J	0.568 J	0.191 J	0.436 J
4,4'-DDE	72-55-9	µg/kg	1.96	6.09	0.415	2.36	1.48 J	0.922 J	0.653 J	0.330 J	0.945 J
4,4'-DDT	50-29-3	µg/kg	0.114 J	0.278 J	0.0534 J	0.480 J	0.460 J	0.506 J	< 0.248 U	0.317 J	0.411 J
DDx (b)	T_DDx (PDI)	µg/kg	9.55	18.1	1.42	4.59	3.85	2.77	1.62	1.11	2.23
Semivolatile Organics											
2-Methylnaphthalene	91-57-6	µg/kg	420	380	95	21 J	19	19	13 J	2.2 J	4.4 J
Acenaphthene	83-32-9	µg/kg	470	820	73	14 J	16	8.4 J	7.3 J	2.0 J	2.1 J
Acenaphthylene	208-96-8	µg/kg	120	120	16	16 J	36	8.7 J	6.2 J	1.3 J	4.2 J
Anthracene	120-12-7	µg/kg	290	300	46	33 J	48	28	20	3.8 J	15
Benz(a)anthracene	56-55-3	µg/kg	640	710	62	110	170	85	47	9.6	44 J
Benzo(a)pyrene	50-32-8	µg/kg	780	750	83	150	240	91	64	9.4	55 J
Benzo(b)fluoranthene	205-99-2	µg/kg	800	830	84	200	300	120	92	16	66 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	490	470	67	140	230	73	65	9.3	48
Benzo(k)fluoranthene	207-08-9	µg/kg	110	160	23	87	82	36	31	5.2 J	21 J
Chrysene	218-01-9	µg/kg	790	1000	89	140	200	110	61	14	56 J
Dibenz(a,h)anthracene	53-70-3	µg/kg	80	65	5.8 J	28 J	48	13	12 J	2.7 J	9.2
Fluoranthene	206-44-0	µg/kg	1700	1800	110	180	210	100	72	14	49 J
Fluorene	86-73-7	µg/kg	330	290	42	13 J	20	12	6.9 J	1.2 J	4.0 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	550	71	170	270	96	83	12	60
Naphthalene	91-20-3	µg/kg	990	930	250	39 J	60	47	24	5.4 J	19
Phenanthrene	85-01-8	µg/kg	2800	3000	400	110	120	71	57	14	34 J
Pyrene	129-00-0	µg/kg	2200	2300	260	270	380	200	110	29	120 J
Total PAHs (b)	T_PAH (PDI)	µg/kg	14000	14000	1800	1700	2400	1100	770	150	610
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	1100	1000	110	230	360	130	99	16	81

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S023	SC-S023	SC-S023	SC-S024	SC-S024	SC-S024	SC-S028	SC-S028	SC-S028
		Sample ID	PDI-SC-S023-3.9TO5.3	PDI-SC-S023-5.3TO7.2	PDI-SC-S023-7.2TO8.8	PDI-SC-S024-0TO2	PDI-SC-S024-2TO4	PDI-SC-S024-4TO6	PDI-SC-S028-0TO2	PDI-SC-S028-2TO3.2	PDI-SC-S028-3.2TO5.7
		Sample Date	7/31/2018	7/31/2018	7/31/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	3.9-5.3 ft	5.3-7.2 ft	7.2-8.8 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-3.2 ft	3.2-5.7 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	70.2	65.5	78.7	57.8	73.9	78.8	63.1	78.2	70.6
Total Solids@70C	TSOLID70	%	75	70	80	61	76	79	64	81	73
Total Solids (%)	%SOLID	%	71.2	65.8	78.4	59.8	74.3	79.4	64.6	78.1	71.7
Clay	GS-Clay	%	3.6	9.7	3.4	10.9	4.3	3.4	4.1	3.2	9.0
Gravel	GS-Gravel	%	0	0	0.7	0	6.8	0	0.3	0	0.6
Sand, Coarse	GS-Csand	%	0	0	0.1	0.1	0.1	0.3	0.4	0.1	0.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	68.61	46.54	67.35	49.5	66.53	68.98	61.94	72.08	46.28
Sand, Fine (#230) (d)	GS-Fsand	%	71.0	49.1	67.9	50.7	66.9	69.5	63.5	73.4	49.9
Sand, Medium	GS-Msand	%	2.2	3.6	13.4	8.5	12.1	17.8	7.0	12.9	4.9
Silt (#200) (d)	GS-Silt-200	%	25.48	40.15	15.04	30.99	10.26	9.517	26.35	11.61	38.91
Silt (#230) (d)	GS-Silt	%	23.1	37.6	14.5	29.8	9.9	9.0	24.8	10.3	35.3
Percent Fines (e)	GS-FINES	%	29.08	49.85	18.44	41.89	14.56	12.917	30.45	14.81	47.91
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	8300	17000	26000	12000	5500	3400	27000	1800 J	4900

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S028	SC-S030	SC-S030	SC-S030	SC-S030	SC-S031	SC-S031	SC-S031	SC-S031	SC-S031
			Sample ID	PDI-SC-S028-3.2TO5.7D	PDI-SC-S030-0TO2	PDI-SC-S030-2TO4	PDI-SC-S030-2TO4D	PDI-SC-S030-4TO5.3	PDI-SC-S031-0TO2	PDI-SC-S031-2TO4	PDI-SC-S031-4TO5.5	PDI-SC-S031-5.5TO7	PDI-SC-S031-7TO9.2
			Sample Date	7/27/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018
			Sample Type Code	FD	N	N	FD	N	N	N	N	N	N
			Depth	3.2- ft	0-2 ft	2-4 ft	2- ft	4-5.3 ft	0-2 ft	2-4 ft	4-5.5 ft	5.5-7 ft	7-9.2 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.010	0.14	0.35	0.37	0.18	0.22	0.054	0.0038	0.0016 J	0.0014 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.0042	0.026 JN	0.093	0.093	0.030	0.046 JN	0.013	0.0012 J	0.00053 JN	0.00018 JN
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		< 0.000090 U	0.0013 JN	0.0042 J	0.0048	0.0021 J	0.0025 JN	0.00081 J	0.00014 J	< 0.00010 U	< 0.000049 U
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00010 J+	0.0013 J	0.0036 J	0.0037 J	0.0019 J	0.0022 J	0.00067 J	0.00014 J	< 0.00011 U	< 0.000063 U
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.00029 J	0.0038 J	0.0092	0.011	0.0052	0.0062	0.0020 J	0.00032 J	< 0.00013 U	< 0.00012 U
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.00055 JN	0.0050	0.017	0.017	0.0094	0.010	0.0029 J	0.00019 JN	< 0.00011 U	< 0.000057 U
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.00019 J	0.0018 J	0.0051	0.0048	0.0031 J	0.0032 J	0.00086 J	0.00015 J	< 0.00012 U	< 0.00011 U
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.00054 J	0.0034 J	0.0063	0.0067	0.0042	0.0043 J	0.0012 JN	0.00027 J	< 0.00010 U	0.00013 JN
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.000045 U	< 0.00025 U	< 0.00060 U	< 0.00084 U	< 0.00027 U	< 0.00038 U	< 0.00017 U	< 0.000041 U	< 0.000098 U	< 0.000078 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.00016 J	0.00074 J	0.0015 JN	< 0.00076 U	0.0013 J	< 0.00040 U	0.00038 JN	< 0.000053 U	< 0.00014 U	< 0.000077 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.00010 JN	0.0011 J	0.0043	0.0045	0.0025 J	0.0028 J	0.00078 J	< 0.000039 U	< 0.000086 U	< 0.000043 U
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.000058 U	0.00083 JN	0.0027 J	0.0024 J	0.0014 J	0.0015 J	0.00043 J	0.000098 J	< 0.000087 U	< 0.000078 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.000097 JN	0.0013 J	0.0040 J	0.0041 J	0.0023 J	0.0025 J	0.00071 J	< 0.000041 U	< 0.000091 U	< 0.000045 U
2,3,7,8-TCDD	1746-01-6	µg/kg		< 0.000074 U	< 0.00016 U	0.00087	0.00077 J	0.00045 JN	0.00055 J	0.00083	< 0.000031 U	< 0.00013 U	< 0.000071 U
2,3,7,8-TCDF	51207-31-9	µg/kg		0.00014 JN	0.0015	0.0055	0.0063	0.0032	0.0048	0.00093	0.00011 J	< 0.00011 U	< 0.000051 U
OCDD	3268-87-9	µg/kg		0.092	1.3	3.3	3.8 J	1.6	2.3	0.60	0.043	0.018	0.017
OCDF	39001-02-0	µg/kg		0.0050 J	0.068	0.20	0.21	0.063	0.14	0.028	0.0030 J	0.0010 J+	0.0011 J+
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.00058	0.0051	0.014	0.014	0.008	0.0082	0.0032	0.00022	0.000097	0.000073
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.00048	0.005	0.013	0.014	0.0077	0.0082	0.0029	0.0002	0.000092	0.000058
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.00044	0.0049	0.013	0.013	0.0075	0.008	0.0027	0.00017	0.000022	0.000019
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.7 UJ	< 3.4 UJ	< 3.4 UJ	< 3.3 UJ	< 2.8 UJ	< 74 U	< 2.8 U	< 2.6 U	< 2.9 U	< 2.8 U
Aroclor 1221	11104-28-2	µg/kg		< 2.7 U	< 3.4 U	< 3.4 U	< 3.3 UJ	< 2.8 UJ	< 74 U	< 2.8 U	< 2.6 U	< 2.9 U	< 2.8 U
Aroclor 1232	11141-16-5	µg/kg		< 2.7 U	< 3.4 U	< 3.4 U	< 3.3 UJ	< 2.8 UJ	< 74 U	< 2.8 U	< 2.6 U	< 2.9 U	< 2.8 U
Aroclor 1242	53469-21-9	µg/kg		< 2.7 U	< 3.4 U	< 3.4 U	< 3.3 UJ	< 2.8 UJ	< 74 U	< 2.8 U	< 2.6 U	< 2.9 U	< 2.8 U
Aroclor 1248	12672-29-6	µg/kg		< 2.7 UJ	< 3.4 UJ	< 3.4 UJ	< 3.3 UJ	< 2.8 UJ	< 74 U	< 2.8 U	< 2.6 U	< 2.9 U	< 2.8 U
Aroclor 1254	11097-69-1	µg/kg		5.6 J	52	270 J	160 J	91 J	670	140	6.9	3.1 J	< 2.8 U
Aroclor 1260	11096-82-5	µg/kg		< 2.7 U	< 3.4 U	< 3.4 U	< 3.3 UJ	< 2.8 UJ	< 74 UJ	< 2.8 UJ	< 2.6 UJ	< 2.9 U	< 2.8 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		5.6	52	270	160	91	670	140	6.9	3.1	< 2.8 U
Pesticides													
2,4-DDD	53-19-0	µg/kg		0.157 J	0.824 J	2.37	2.13	0.794 J	3.16	0.933	0.117 J	0.0530 J	0.011 JN
2,4-DDE	3424-82-6	µg/kg		0.132 J	0.365 J	1.50 J	1.67 J	0.671 J	1.35	0.437	0.0345 J	0.0239 J	0.00558 J
2,4-DDT	789-02-6	µg/kg		0.0774 J	0.268 J	0.722 J	0.975 J	0.34 JN	0.815 J	0.232 J	0.021 JN	0.0201 J	0.0142 J
4,4'-DDD	72-54-8	µg/kg		0.350 J	2.63	7.84	6.70	2.86	7.24	2.40	0.318	0.132 J	0.0218 J
4,4'-DDE	72-55-9	µg/kg		0.726 J	3.75	14.1 J	15.0 J	6.11	13.8	4.16	0.297	0.188 J	0.0276 J
4,4'-DDT	50-29-3	µg/kg		< 0.213 U	0.921 J	2.48	3.47	1.35 J	2.27 J	0.692 J	0.0825 J	0.0467 J	0.0354 J
DDx (b)	T_DDx (PDI)	µg/kg		1.55	8.76	29	29.9	12.1	28.6	8.85	0.87	0.464	0.116
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		7.9	17 J	53	120	41	43	15	1.2 J	< 1.4 U	< 1.4 U
Acenaphthene	83-32-9	µg/kg		5.1 J	25 J	140	160	57	160	52	9.9	4.1	4.5
Acenaphthylene	208-96-8	µg/kg		7.4	23 J	65	85	33 J	65	22	2.0 J	< 1.4 U	0.17 J
Anthracene	120-12-7	µg/kg		26	44	160	220	82	180	48	4.2	< 1.4 U	< 1.4 U
Benz(a)anthracene	56-55-3	µg/kg		110 J	180	780	830	310	750	260	17	4.6	1.8 J
Benzo(a)pyrene	50-32-8	µg/kg		98 J	210	810	940	360	990	380	18	4.6	< 1.4 U
Benzo(b)fluoranthene	205-99-2	µg/kg		120 J	320	1200	1400	550	1400	450	26	6.5	3.2
Benzo(g,h,i)perylene	191-24-2	µg/kg		75	200	890	1000	400	730	280	13	5.0	2.4
Benzo(k)fluoranthene	207-08-9	µg/kg		36 J	110	370	440	170	390	160	6.9	2.0	< 1.4 U
Chrysene	218-01-9	µg/kg		130 J	240	970	1000	390	1100	370	27	5.3	2.3
Dibenz(a,h)anthracene	53-70-3	µg/kg		21	30 J	110	120	58	180	82	2.1 J	0.56 J	< 1.4 U
Fluoranthene	206-44-0	µg/kg		160 J	360	1500	1900	570	1600	640	40	12	11
Fluorene	86-73-7	µg/kg		7.3	27 J	87	150	41	96	19	2.3 J	1.4 J	1.6
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		100	220	900	1100	420	960	360	17	5.1	2.3
Naphthalene	91-20-3	µg/kg		27	42	150	170	69	100	30	2.2 J	< 1.4 U	0.71 J
Phenanthrene	85-01-8	µg/kg		73 J	180	920	1200	300	860	400	50	13	21
Pyrene	129-00-0	µg/kg		350 J	450	2100	2500	860	1900	780	60	15	11
Total PAHs (b)	T_PAH (PDI)	µg/kg		1400	2700	11000	13000	4700	12000	4300	300	80	63
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		150	310	1200	1400	550	1500	570	26	6.8	1.4

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S028	SC-S030	SC-S030	SC-S030	SC-S030	SC-S031	SC-S031	SC-S031	SC-S031	SC-S031
		Sample ID	PDI-SC-S028-3.2TO5.7D	PDI-SC-S030-0TO2	PDI-SC-S030-2TO4	PDI-SC-S030-2TO4D	PDI-SC-S030-4TO5.3	PDI-SC-S031-0TO2	PDI-SC-S031-2TO4	PDI-SC-S031-4TO5.5	PDI-SC-S031-5.5TO7	PDI-SC-S031-7TO9.2
		Sample Date	7/27/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018
		Sample Type Code	FD	N	N	FD	N	N	N	N	N	N
		Depth	3.2- ft	0-2 ft	2-4 ft	2- ft	4-5.3 ft	0-2 ft	2-4 ft	4-5.5 ft	5.5-7 ft	7-9.2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	70.7	57.8	57.6	59.1	67.7	53.3	67.4	72.5	68.3	68.6
Total Solids@70C	TSOLID70	%	72	60	60	59	69	56	70	75	71	72
Total Solids (%)	%SOLID	%	71.1	58.2	58.7	58.6	66.4	54	67.6	71.9	69.2	69.3
Clay	GS-Clay	%		9.2	16.7		10.2	17.5	12.3	9.9	17.5	15.7
Gravel	GS-Gravel	%		5.9	0		0	0	0	0	0	0
Sand, Coarse	GS-Csand	%		0.3	0.3		0.1	0.1	0.1	0	0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%		38.94	24.14		29.28	25.14	38.17	50.87	19.74	14.23
Sand, Fine (#230) (d)	GS-Fsand	%		42.8	28.0		34.2	29.2	44.1	56.3	26.3	23.7
Sand, Medium	GS-Msand	%		0.9	0.8		0.3	0.5	0.3	0	0	0
Silt (#200) (d)	GS-Silt-200	%		44.75	58.15		60.21	56.75	49.02	39.22	62.75	69.86
Silt (#230) (d)	GS-Silt	%		40.9	54.3		55.3	52.7	43.1	33.8	56.2	60.4
Percent Fines (e)	GS-FINES	%		53.95	74.85		70.41	74.25	61.32	49.12	80.25	85.56
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	5300	13000	18000	20000	9900	27000	7700	3900	5400	4100

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S033	SC-S033	SC-S033
			Sample ID	PDI-SC-S032-0TO2	PDI-SC-S032-10TO12	PDI-SC-S032-12TO14	PDI-SC-S032-2TO4	PDI-SC-S032-4TO6	PDI-SC-S032-6TO8	PDI-SC-S032-8TO10	PDI-SC-S033-0TO2	PDI-SC-S033-2TO3	PDI-SC-S033-3TO4
			Sample Date	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	7/18/2018	7/18/2018	7/18/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	0-2 ft	10-12 ft	12-14 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-3 ft	3-4 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.017	0.00030 JN	0.0013 J	0.015	0.00083 J	0.00081 J	0.00037 J+	0.78	0.87	1.4
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.0073	< 0.000033 U	0.00024 JN	0.0093	0.00072 JN	< 0.00020 U	0.00023 JN	0.14	0.16	0.24
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	< 0.00017 U	< 0.000034 U	< 0.000058 U	< 0.00025 U	< 0.00010 U	< 0.00023 U	< 0.000079 U	0.0083	0.011	0.016
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00030 J+	< 0.000063 U	< 0.000065 U	0.00028 J+	0.00026 J+	< 0.00020 U	< 0.000077 U	0.0055 J	0.0083	0.016
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	< 0.00016 U	< 0.000095 U	< 0.000063 U	< 0.00034 U	< 0.00015 U	< 0.00023 U	< 0.000082 U	0.012	0.019	0.034
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.00085 J	< 0.000057 U	< 0.000061 U	0.00074 J	< 0.000068 U	< 0.00019 U	< 0.000070 U	0.024	0.037	0.071
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	< 0.00013 U	< 0.000081 U	< 0.000054 U	< 0.00031 U	< 0.00013 U	< 0.00020 U	< 0.000073 U	0.0068	0.0097 J	0.018
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00056 J	< 0.000056 U	0.00021 J	0.00058 J	< 0.000066 U	< 0.00018 U	< 0.000068 U	0.0095	0.015	0.034
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.000094 U	< 0.000060 U	< 0.000039 U	< 0.00024 U	< 0.000084 U	< 0.00015 U	< 0.000046 U	0.0014 J+	0.0017 J+	0.0021 J+
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.000082 U	< 0.000046 U	< 0.000062 U	0.00010 JN	< 0.000069 U	< 0.00026 U	< 0.000063 U	0.0027 J	0.0038 JN	0.013
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.00020 JN	< 0.000040 U	< 0.000043 U	< 0.00011 U	< 0.000058 U	< 0.00019 U	< 0.000054 U	0.0034 J	0.0064	0.0095
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.00021 J	< 0.000059 U	< 0.000041 U	< 0.00025 U	< 0.000090 U	< 0.00014 U	< 0.000050 U	0.0047 J	0.0068	0.013
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.00020 J	< 0.000045 U	< 0.000045 U	0.00025 J	< 0.000069 U	< 0.00021 U	< 0.000054 U	0.0055 J	0.0093	0.020
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000051 U	< 0.000048 U	< 0.000055 U	< 0.000045 U	< 0.000057 U	< 0.00011 U	< 0.000046 U	0.00085 J	0.0014	0.0044
2,3,7,8-TCDF		51207-31-9	µg/kg	0.00036 J	< 0.000033 U	< 0.000040 U	0.00035 J	< 0.000055 U	< 0.000081 U	< 0.000042 U	0.0071 JN	0.013	0.027
OCDD		3268-87-9	µg/kg	0.18	0.0043 J	0.014	0.16	0.0084	0.0064 J	0.0037 J	8.6 J	8.1 J	11 J
OCDF		39001-02-0	µg/kg	0.010	< 0.000074 U	0.00026 J+	0.012	0.00080 J	< 0.00023 U	0.00013 J+	0.43	0.43	0.53
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.00064	0.000028	0.000072	0.00069	0.000079	0.00014	0.000039	0.024	0.032	0.065
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.00063	0.000025	0.000069	0.00061	0.000072	0.00014	0.000036	0.024	0.03	0.065
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.00059	0.0000013	0.000038	0.00056	0.000037	0.00001	0.0000048	0.024	0.028	0.065
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 2.5 U	< 2.8 U	< 2.8 U	< 5.0 U	< 2.9 U	< 2.8 U	< 2.8 U	< 44 U	< 38 U	< 380 U
Aroclor 1221		11104-28-2	µg/kg	< 2.5 UJ	< 2.8 U	< 2.8 U	< 5.0 UJ	< 2.9 U	< 2.8 UJ	< 2.8 UJ	< 44 UJ	< 38 UJ	< 380 U
Aroclor 1232		11141-16-5	µg/kg	< 2.5 U	< 2.8 U	< 2.8 U	< 5.0 U	< 2.9 U	< 2.8 U	< 2.8 U	< 44 U	< 38 U	< 380 U
Aroclor 1242		53469-21-9	µg/kg	< 2.5 U	< 2.8 U	< 2.8 U	< 5.0 U	< 2.9 U	< 2.8 U	< 2.8 U	< 44 U	< 38 U	< 380 U
Aroclor 1248		12672-29-6	µg/kg	< 2.5 UJ	< 2.8 U	< 2.8 U	< 5.0 UJ	< 2.9 U	< 2.8 UJ	< 2.8 UJ	< 44 U	< 38 U	< 380 U
Aroclor 1254		11097-69-1	µg/kg	23	< 2.8 U	< 2.8 U	62 J	1.3 J	6.4	< 2.8 U	1400 J	1500 J	8900 J
Aroclor 1260		11096-82-5	µg/kg	< 2.5 UJ	< 2.8 UJ	< 2.8 UJ	< 5.0 UJ	< 2.9 UJ	< 2.8 UJ	< 2.8 UJ	< 44 U	< 38 U	< 380 U
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	23	< 2.8 UJ	< 2.8 UJ	62	1.3	6.4	< 2.8 UJ	1400	1500	8900
Pesticides													
2,4-DDD		53-19-0	µg/kg	< 0.35 U	< 0.016 U	< 0.013 U	< 0.239 U	< 0.012 UJ	0.010 JN	0.012 JN	3.32 J	5.34 J	13.0 J
2,4-DDE		3424-82-6	µg/kg	< 0.24 UJ	0.015 JN	0.019 JN	< 0.150 U	< 0.0186 U	0.00632 J	0.010 JN	0.581	0.978	1.94
2,4-DDT		789-02-6	µg/kg	< 0.089 U	< 0.021 U	< 0.017 U	< 0.11 U	< 0.016 U	< 0.0031 U	< 0.012 U	0.112 J	0.15 JN	1.47 J
4,4'-DDD		72-54-8	µg/kg	0.575 J	< 0.019 U	0.027 JN	0.466 J	< 0.0559 UJ	0.0192 J	0.026 JN	8.51 J	11.8 J	26.6 J
4,4'-DDE		72-55-9	µg/kg	1.0 JN	0.0303 J	0.0362 J	0.873 J	< 0.0912 U	0.0385 J	0.0394 J	5.73	8.60	16.2
4,4'-DDT		50-29-3	µg/kg	< 0.35 U	0.082 JN	0.052 JN	0.290 J	< 0.0571 U	0.011 JN	0.0603 J	0.546 J	1.08 J	10.0 J
DDx	(b)	T_DDx (PDI)	µg/kg	1.75	0.138	0.143	1.75	< 0.0912 U	0.0866	0.154	18.8	27.9	69.2
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	4.2	0.70 J	0.86 J	4.2	1.9	0.81 J	0.67 J	250	2000	540
Acenaphthene		83-32-9	µg/kg	61	0.50 J	0.53 J	140	3.7	2.3	1.4	1700	1300	7000
Acenaphthylene		208-96-8	µg/kg	8.8	< 1.3 U	< 1.3 U	8.9	0.96 J	0.64 J	0.35 J	80 J	170 J	250
Anthracene		120-12-7	µg/kg	36	0.61 J	0.67 J	37	4.7	2.4	1.3	8500	6200	14000
Benz(a)anthracene		56-55-3	µg/kg	130	1.2 J	1.3	76	8.4	4.8	2.9	3300	4200	9700
Benzo(a)pyrene		50-32-8	µg/kg	70	0.94 J	1.1 J	58	8.0	4.4	2.3	2900	3600	6700
Benzo(b)fluoranthene		205-99-2	µg/kg	92	2.6	2.7	74	10	6.4	4.2	4200	6500	10000
Benzo(g,h,i)perylene		191-24-2	µg/kg	47	1.3	1.1 J	48	7.3	4.0	2.5	2000	2900	4500
Benzo(k)fluoranthene		207-08-9	µg/kg	30	0.85 J	0.67 J	23	4.1	2.2	1.5	1700	1700	4200
Chrysene		218-01-9	µg/kg	120	1.3	1.8	78	11	5.7	3.5	5200	6800	13000
Dibenz(a,h)anthracene		53-70-3	µg/kg	7.6	0.58 J	0.60 J	6.0	1.2 J	0.83 J	0.64 J	500	520	940
Fluoranthene		206-44-0	µg/kg	440	2.6	2.7	310	38	23	13	11000	14000	39000
Fluorene		86-73-7	µg/kg	17	0.59 J	0.92 J	20	2.3	1.4	0.88 J	3200	2100	14000
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	54	1.1 J	1.0 J	50	7.2	3.9	2.5	2400 J	3400	5300 J
Naphthalene		91-20-3	µg/kg	8.7	0.78 J	1.0 J	12	9.1	2.0	1.1 J	260	930	550
Phenanthrene		85-01-8	µg/kg	420	3.3	4.3	510	44	30	14	14000	10000	67000
Pyrene		129-00-0	µg/kg	480	3.0	3.0	380	42	24	14	10000	15000	32000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	2000	23	25	1800	200	120	67	71000	81000	230000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	110	2	2.2	84	12	6.8	3.9	4400	5600	10000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S032	SC-S033	SC-S033	SC-S033
		Sample ID	PDI-SC-S032-0TO2	PDI-SC-S032-10TO12	PDI-SC-S032-12TO14	PDI-SC-S032-2TO4	PDI-SC-S032-4TO6	PDI-SC-S032-6TO8	PDI-SC-S032-8TO10	PDI-SC-S033-0TO2	PDI-SC-S033-2TO3	PDI-SC-S033-3TO4
		Sample Date	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	7/18/2018	7/18/2018	7/18/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	10-12 ft	12-14 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-3 ft	3-4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	80.1	68.9	70.4	79.1	65.8	67.3	71.2	44.5	51.0	51.9
Total Solids@70C	TSOLID70	%	82	71	73	82	70	71	74	46	52	59
Total Solids (%)	%SOLID	%	77.6	69.7	69.7	79.8	65.4	66.8	71.4	41.9	50.7	52.4
Clay	GS-Clay	%	3.4	7.9	9.5	5.1	14.0	13.6	9.5	5.3	4.8	8.9
Gravel	GS-Gravel	%	0	0	0	0.1	1.5	0	0.1	0.7	0	0
Sand, Coarse	GS-Csand	%	0.5	0	0.1	0.2	0.5	0.1	0.2	1.6	1.1	0.8
Sand, Fine (#200) (d)	GS-Fsand-200	%	62.02	32.64	25.98	59.4	24.85	36.62	52.33	37.19	30.33	38.88
Sand, Fine (#230) (d)	GS-Fsand	%	62.5	39.7	34.9	60.0	32.2	43.2	59.4	41.8	37.9	43.6
Sand, Medium	GS-Msand	%	29.6	0.1	0.2	28.6	1.3	0.5	0.4	8.1	3.0	5.8
Silt (#200) (d)	GS-Silt-200	%	4.378	59.45	64.21	6.596	57.84	49.07	37.46	47.00	60.66	45.61
Silt (#230) (d)	GS-Silt	%	3.9	52.4	55.3	6.0	50.5	42.5	30.4	42.4	53.1	40.9
Percent Fines (e)	GS-FINES	%	7.778	67.35	73.71	11.696	71.84	62.67	46.96	52.3	65.46	54.51
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	1700 J	7700	11000	2000	3900	3800	3300	40000	46000	73000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
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b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S034	SC-S034	SC-S034	SC-S036	SC-S036	SC-S036	SC-S038	SC-S038	SC-S038
			Sample ID	PDI-SC-S034-0TO1.8	PDI-SC-S034-1.8TO4	PDI-SC-S034-4TO5.2	PDI-SC-S036-0TO1.4	PDI-SC-S036-1.4TO3.4	PDI-SC-S036-3.4TO5.2	PDI-SC-S038-0TO2	PDI-SC-S038-2TO3.4	PDI-SC-S038-3.4TO5.4
			Sample Date	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/31/2018	7/31/2018	7/31/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	0-1.8 ft	1.8-4 ft	4-5.2 ft	0-1.4 ft	1.4-3.4 ft	3.4-5.2 ft	0-2 ft	2-3.4 ft	3.4-5.4 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.024	0.0022 J	0.0011 J	0.067	0.15	0.17	0.032	0.0019 J	0.0013 J
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.0067 JN	0.00050 JN	0.00017 JN	0.012 JN	0.037	0.26	0.028	0.0011 J	0.00031 JN
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.00040 J+	< 0.00011 U	0.00018 JN	0.0017 J	0.0024 J	0.0043	< 0.00051 U	< 0.00015 U	< 0.000089 U
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00051 J+	< 0.00015 U	< 0.00012 U	0.00084 J+	0.00093 JN	0.0013 J	0.00027 J+	0.00014 J+	0.00015 J+
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.00062 J	0.00014 J	< 0.000087 U	0.0066	0.0097	0.0086	0.0012 J	0.00024 J	< 0.000069 U
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.0013 J	0.00016 JN	0.00010 JN	0.0034 J	0.0060	0.0080	0.0013 J	0.00012 JN	0.000081 JN
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.00040 J+	0.00015 J+	< 0.000084 U	0.0021 J	0.0035 J	0.011	0.0015 J	< 0.000095 U	< 0.000058 U
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00094 J	0.00032 J+	0.00024 J+	0.0021 J	0.0028 J	0.0031 J	0.00066 J	0.00016 JN	0.00018 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	0.00064 J+	0.00085 J+	0.00076 J+	0.00078 J+	0.00074 J+	0.00074 J+	< 0.00015 U	< 0.000072 U	< 0.000045 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.00030 J+	0.000099 J+	< 0.000053 U	0.00047 J	0.00065 J	0.0012 J	< 0.00014 U	< 0.00014 U	< 0.000079 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.00038 J+	0.00034 J+	0.00026 J+	0.0014 J	0.0029 J	0.0028 J	< 0.00021 U	< 0.000088 U	0.00010 J
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.00023 J+	0.000081 JN	< 0.000048 U	0.00044 J	0.00082 J	0.0028 J	0.00064 J	< 0.000069 U	< 0.000048 U
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.00029 J	< 0.000042 U	< 0.000031 U	0.00068 J	0.0011 J	0.0028 J	< 0.00021 U	< 0.000091 U	< 0.000052 U
2,3,7,8-TCDD		1746-01-6	µg/kg	0.00063	< 0.000020 U	0.000097 JN	0.00034 JN	0.00036 JN	0.00040 JN	< 0.00020 U	< 0.000089 U	< 0.000086 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.00041 J	0.000088 J+	0.000041 J+	0.0014	0.0016	0.0021	0.00052 JN	0.00027 J	0.00022 J
OCDD		3268-87-9	µg/kg	0.21	0.018	0.012	0.71	1.9	2.0	0.43	0.020	0.011
OCDF		39001-02-0	µg/kg	0.016	0.0012 J+	0.00065 JN	0.038	0.12	0.27	0.034	0.0028 J+	< 0.00034 U
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.0019	0.00033	0.00026	0.0039	0.0065	0.011	0.0014	0.0002	0.00013
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.0019	0.0003	0.00018	0.0037	0.0063	0.011	0.0014	0.00017	0.00012
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.0019	0.00029	0.00013	0.0035	0.0061	0.011	0.0013	0.0001	0.000074
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	< 3.1 UJ	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1221		11104-28-2	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	< 3.1 UJ	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1232		11141-16-5	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	< 3.1 UJ	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1242		53469-21-9	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	< 3.1 UJ	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1248		12672-29-6	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	< 3.1 UJ	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1254		11097-69-1	µg/kg	40 J	< 2.8 UJ	< 2.8 UJ	< 3.8 UJ	< 3.0 UJ	85 J	< 6.8 U	< 6.7 U	< 6.5 U
Aroclor 1260		11096-82-5	µg/kg	< 2.4 U	< 2.8 UJ	< 2.8 UJ	11 J	21 J	< 3.1 UJ	3.5 J	< 6.7 U	< 6.5 U
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	40	< 2.8 UJ	< 2.8 UJ	11	21	85	3.5	< 6.7 U	< 6.5 U
Pesticides												
2,4-DDD		53-19-0	µg/kg	7.34	0.176 J	< 0.028 U	0.860 J	3.03 J	25.2 J	0.731 J	0.0236 J	0.012 JN
2,4-DDE		3424-82-6	µg/kg	0.859 J	0.108 J	0.0232 J	0.340 J	0.484	1.41	0.172 J	0.00622 J	0.00770 J
2,4-DDT		789-02-6	µg/kg	1.61	0.204 J	< 0.040 U	2.68 J	0.162 J	1.72 J	0.045 JN	0.015 JN	0.028 JN
4,4'-DDD		72-54-8	µg/kg	26.5	0.366 J	0.108 J	2.70 J	9.00 J	35.7 J	1.40 J	0.0214 J	0.0170 J
4,4'-DDE		72-55-9	µg/kg	6.20	0.193 J	0.0560 J	6.46	5.82	7.84	0.919	0.0178 J	0.0186 J
4,4'-DDT		50-29-3	µg/kg	9.65	0.448 J	< 0.0956 U	4.63 J	0.955 J	12.3 J	0.0942 J	0.0374 J	0.0589 J
DDx	(b)	T_DDx (PDI)	µg/kg	52.2	1.5	0.235	17.7	19.5	84.2	3.36	0.121	0.142
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	6.8 J	1.5 J	< 2.7 U	45	170	390	760	320	1000
Acenaphthene		83-32-9	µg/kg	46	1.6 J	0.72 J	67	280	720	1200	480	1900
Acenaphthylene		208-96-8	µg/kg	6.3 J	< 2.8 U	< 2.7 U	27 J	48	220	540	320	740
Anthracene		120-12-7	µg/kg	48	4.9	1.2 J	55	150	590	1300	880	1100
Benz(a)anthracene		56-55-3	µg/kg	99	5.0	2.2 J	170	570	1800	3100	1400	1100
Benzo(a)pyrene		50-32-8	µg/kg	110	3.5	1.4 J	230	730	2400	5100	1600	1300
Benzo(b)fluoranthene		205-99-2	µg/kg	140	5.8	2.6 J	270	740	2000	4400	1600	1300
Benzo(g,h,i)perylene		191-24-2	µg/kg	98	3.1	3.9	190	550	1900	4800	1900	1400
Benzo(k)fluoranthene		207-08-9	µg/kg	50	2.1 J	1.0 J	100	300	600	1500	460	350
Chrysene		218-01-9	µg/kg	160	5.2	2.2 J	220	770	2300	4400	1500	1100
Dibenz(a,h)anthracene		53-70-3	µg/kg	15	0.90 J	< 2.7 U	37	87	230	380	99	110
Fluoranthene		206-44-0	µg/kg	210 J	17	4.1	320	1500	4700	11000	4900	5000
Fluorene		86-73-7	µg/kg	69	3.6	1.2 J	44	150	490	960	480	910
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	110 J	3.0 J	1.8 J	230 J	630 J	2100 J	4200	1500	1200
Naphthalene		91-20-3	µg/kg	20	1.6 J	< 2.7 U	130	400	1500	2900	1400	5400
Phenanthrene		85-01-8	µg/kg	500 J	23	6.6	270	1200	4200	8700	4200	5600
Pyrene		129-00-0	µg/kg	460 J	18	5.0	350	1800	6300	14000	6700	6300
Total PAHs	(b)	T_PAH (PDI)	µg/kg	2100	100	37	2800	10000	32000	69000	30000	36000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	160	5.8	3.4	340	1000	3200	6700	2200	1800

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S034	SC-S034	SC-S034	SC-S036	SC-S036	SC-S036	SC-S038	SC-S038	SC-S038
		Sample ID	PDI-SC-S034-0TO1.8	PDI-SC-S034-1.8TO4	PDI-SC-S034-4TO5.2	PDI-SC-S036-0TO1.4	PDI-SC-S036-1.4TO3.4	PDI-SC-S036-3.4TO5.2	PDI-SC-S038-0TO2	PDI-SC-S038-2TO3.4	PDI-SC-S038-3.4TO5.4
		Sample Date	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/31/2018	7/31/2018	7/31/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	0-1.8 ft	1.8-4 ft	4-5.2 ft	0-1.4 ft	1.4-3.4 ft	3.4-5.2 ft	0-2 ft	2-3.4 ft	3.4-5.4 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	79.3	67.5	69.3	52.1	64.9	63.1	55.3	57.9	59.8
Total Solids@70C	TSOLID70	%	81	70	73	53	68	62	58	61	62
Total Solids (%)	%SOLID	%	79.6	68.8	70.4	52.2	65.4	62.8	55.8	58.2	61.6
Clay	GS-Clay	%	0.8	24.8	17.8	13.0	6.1	6.6	16.2	17.6	10.6
Gravel	GS-Gravel	%	0	0	0	0	0	1.0	0	0	0
Sand, Coarse	GS-Csand	%	1.3	0.3	0.4	0.2	2.9	1.4	0.1	0	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	61.92	11.05	17.73	19.06	43.39	37.12	16.29	16.85	59.03
Sand, Fine (#230) (d)	GS-Fsand	%	62.5	14.4	22.8	23.2	45.8	40.1	20.3	21.7	62.7
Sand, Medium	GS-Msand	%	24.4	0.6	0.6	1.7	14.2	13.9	0.4	0.3	0.8
Silt (#200) (d)	GS-Silt-200	%	11.57	63.24	63.36	66.03	33.50	39.97	67.00	65.24	29.46
Silt (#230) (d)	GS-Silt	%	11.0	59.9	58.3	61.9	31.1	37.0	63.0	60.4	25.8
Percent Fines (e)	GS-FINES	%	12.37	88.04	81.16	79.03	39.6	46.57	83.2	82.84	40.06
Liquid Limit	GS-LL	None		60						54	
Plasticity Index	GS-PI	None		26						15	
Plasticity Limit	GS-PL	None		34						39	
Total Organic Carbon	TOC	mg/kg	2700	3000	2300	20000	11000	23000	38000	35000	49000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S038	SC-S042	SC-S042	SC-S042	SC-S045	SC-S045	SC-S045	SC-S053	SC-S053	SC-S053
			Sample ID	PDI-SC-S038-5.4TO7.2	PDI-SC-S042-0TO2	PDI-SC-S042-2TO4	PDI-SC-S042-4TO6	PDI-SC-S045-0TO2	PDI-SC-S045-2TO4	PDI-SC-S045-4TO6	PDI-SC-S053-0TO2	PDI-SC-S053-10TO12.4	PDI-SC-S053-2TO4
			Sample Date	7/31/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	8/16/2018	8/16/2018	8/16/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	5.4-7.2 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	10-12.4 ft	2-4 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.0021 J	0.14	0.21	0.19	0.0033	0.0021 J	0.0025 J	0.069	0.0035 J	0.24
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.00031 JN	0.019	0.043	0.050	0.00053 J+	< 0.00027 U	< 0.00011 U	0.014	0.0016 J	0.081
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	< 0.00020 U	0.0012 J	< 0.00068 U	0.0032 J	0.00015 J	< 0.00015 U	< 0.000068 U	0.0017 J+	0.0012 JN	0.015
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00022 J+	0.0014 J	0.0016 J	0.0014 J	0.00014 JN	< 0.00016 U	< 0.00015 U	0.00079 J+	< 0.00038 UJ	0.0019 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.00055 J	0.0026 J	0.0063	0.014	< 0.000061 U	< 0.000057 U	< 0.000044 U	0.0044 J	< 0.00037 U	0.083
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.00018 J	0.0077	0.010	0.0075	0.00020 J	0.00016 JN	0.00012 JN	0.0028 J	< 0.00038 U	0.0095
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.00037 J	0.0015 J	0.0038	0.0052	< 0.000063 U	< 0.000057 U	< 0.000045 U	0.0015 J	< 0.00033 U	0.028
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00042 J	0.0037 J	0.0030 J	0.0028 J	0.00022 J	0.00034 JN	0.00048 J+	0.0018 J	< 0.00035 U	0.0041 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.000076 U	< 0.00012 U	< 0.00021 U	0.00036 J	0.00011 J+	0.00012 J	0.000050 JN	0.00092 J+	0.0017 J+	0.0025 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	< 0.00013 U	< 0.00012 U	0.00079 JN	0.00081 J	0.000081 J	< 0.000045 U	< 0.000045 U	0.00040 J	< 0.00058 U	0.0011 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.00025 JN	0.0010 J	0.0024 J	0.0063	< 0.000032 U	0.000059 JN	< 0.000031 U	0.0022 J	< 0.00042 U	0.047
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.00017 J	0.00083 J	0.0012 J	0.0013 J	0.000071 J	0.000074 J	< 0.000026 U	0.00050 J	< 0.00025 U	0.0041 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.00035 J	0.00085 J	0.0017 J	0.0023 J	0.000080 J	< 0.000027 U	< 0.000033 U	0.0010 J	< 0.00041 U	0.014
2,3,7,8-TCDD	1746-01-6	µg/kg	< 0.000083 U	0.00046 J	0.00039 JN	0.00061 J	< 0.000025 U	0.000094 JN	0.00013 JN	0.00015 JN	< 0.00049 U	0.00059 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.00078 J	0.0017	0.0018	0.0029	0.000099 J	< 0.000017 U	< 0.000014 U	0.0025	< 0.00022 U	0.019
OCDD	3268-87-9	µg/kg	< 0.00017 U	1.3	2.3	2.5	0.029	0.018	0.020	0.67	0.050 J	3.6 J
OCDF	39001-02-0	µg/kg	< 0.00017 U	0.053	0.11	0.12	0.0014 J+	< 0.00091 U	< 0.00049 U	0.053	0.0038 J	0.26
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.00047	0.0048	0.0078	0.0091	0.00025	0.00021	0.00025	0.0035	0.00054	0.027
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.00046	0.0048	0.007	0.0091	0.00024	0.000093	0.00014	0.0034	0.00053	0.027
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.0004	0.0047	0.0066	0.0091	0.00022	0.000046	0.000079	0.0034	0.00024	0.026
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg	< 6.8 UJ	< 7.1 U	< 5.7 U	< 5.9 UJ	< 2.5 U	< 2.6 U	< 2.7 U	< 3.7 UJ	< 2.9 U	< 3.3 U
Aroclor 1221	11104-28-2	µg/kg	< 6.8 UJ	< 7.1 UJ	< 5.7 UJ	< 5.9 UJ	< 2.5 UJ	< 2.6 UJ	< 2.7 UJ	< 3.7 UJ	< 2.9 U	< 3.3 U
Aroclor 1232	11141-16-5	µg/kg	< 6.8 UJ	< 7.1 U	< 5.7 U	< 5.9 UJ	< 2.5 U	< 2.6 U	< 2.7 U	< 3.7 UJ	< 2.9 UJ	< 3.3 U
Aroclor 1242	53469-21-9	µg/kg	< 6.8 UJ	< 7.1 U	< 5.7 U	< 5.9 UJ	< 2.5 U	< 2.6 U	< 2.7 U	< 3.7 UJ	< 2.9 UJ	< 3.3 UJ
Aroclor 1248	12672-29-6	µg/kg	< 6.8 UJ	< 7.1 UJ	< 5.7 UJ	< 5.9 UJ	< 2.5 UJ	< 2.6 UJ	< 2.7 UJ	< 3.7 UJ	< 2.9 UJ	< 3.3 UJ
Aroclor 1254	11097-69-1	µg/kg	< 6.8 UJ	48 J	27 J	16 J	< 2.5 U	< 2.6 U	< 2.7 U	< 3.7 UJ	< 2.9 U	< 3.3 UJ
Aroclor 1260	11096-82-5	µg/kg	< 6.8 UJ	< 7.1 U	< 5.7 U	< 5.9 UJ	0.55 J	< 2.6 U	< 2.7 U	1.5 J	< 2.9 U	19 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	< 6.8 UJ	48	27	16	0.55	< 2.6 UJ	< 2.7 UJ	1.5	< 2.9 UJ	19
Pesticides													
2,4-DDD	53-19-0	µg/kg	< 0.0071 UJ	2.41	3.63	2.48	1.19	0.0126 J	0.00544 J	2.02	0.233 J	14.9
2,4-DDE	3424-82-6	µg/kg	0.00832 J	0.261 J	0.584	0.555	0.0315 J	0.0139 J	< 0.0034 U	< 0.13 U	0.0751 J	2.24 J
2,4-DDT	789-02-6	µg/kg	0.029 JN	2.01	0.13 J	0.0555 J	< 0.0048 U	< 0.0053 U	< 0.0057 U	< 0.20 U	0.170 J	2.31
4,4'-DDD	72-54-8	µg/kg	< 0.0068 UJ	9.57	9.43	6.46	2.51 J	0.0293 J	0.0058 JN	5.78	0.400 J	36.7
4,4'-DDE	72-55-9	µg/kg	0.0233 J	6.72	5.23	5.51	0.206 J	0.0321 J	0.015 J	2.67	0.140 J	9.40 J
4,4'-DDT	50-29-3	µg/kg	0.0469 J	6.67	0.37	0.189 J	< 0.0073 U	< 0.012 U	< 0.0047 U	< 0.37 U	0.820 J	11.7
DDx (b)	T_DDx (PDI)	µg/kg	0.111	27.6	19.4	15.2	3.94	0.0939	0.0291	10.7	1.84	77.3
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg	710	40	320	180	2.9 J	< 2.6 U	< 1.3 U	57	3.9 J	550
Acenaphthene	83-32-9	µg/kg	940	46	300	180	2.3 J	< 2.6 U	< 1.3 U	59	6.8	2400
Acenaphthylene	208-96-8	µg/kg	540	17 J	51	52	2.6 J	< 2.6 U	< 1.3 U	29	3.4 J	180
Anthracene	120-12-7	µg/kg	770	56	170	210	5.6 J	< 2.6 U	< 1.3 U	82	7.1	670
Benz(a)anthracene	56-55-3	µg/kg	590	160	430	420	16	0.96 J	< 1.3 U	180	10	1500
Benzo(a)pyrene	50-32-8	µg/kg	670	200	490	610	20	< 2.6 U	< 1.3 U	240	17	1800
Benzo(b)fluoranthene	205-99-2	µg/kg	680	280	540	620	24	< 2.6 U	< 1.3 U	260	16	1600
Benzo(g,h,i)perylene	191-24-2	µg/kg	720	180	420	580	18	< 2.6 U	0.47 J	230	17	1400
Benzo(k)fluoranthene	207-08-9	µg/kg	190	90	190	240	10	< 2.6 U	< 1.3 U	88	5.6 J	590
Chrysene	218-01-9	µg/kg	620	230	660	630	21	< 2.6 U	< 1.3 U	240	15	1900
Dibenz(a,h)anthracene	53-70-3	µg/kg	58	34	73	94	3.6 J	< 2.6 U	< 1.3 U	39	< 6.3 U	220
Fluoranthene	206-44-0	µg/kg	3300	300	1100	1000	28	< 2.6 U	< 1.3 U	440	39	4500
Fluorene	86-73-7	µg/kg	590	34	140	170	2.3 J	< 2.6 U	< 1.3 U	55	5.5 J	1400
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	180 J	440 J	580 J	19 J	< 2.6 U	< 1.3 U	250	16	1600
Naphthalene	91-20-3	µg/kg	3900	130	860	420	12	< 2.6 U	< 1.3 U	130	12	860
Phenanthrene	85-01-8	µg/kg	3600	240	970	860	22	< 2.6 U	< 1.3 U	380	42	8100
Pyrene	129-00-0	µg/kg	4200	320	1400	1200	50	0.57 J	< 1.3 U	470	46	5700
Total PAHs (b)	T_PAH (PDI)	µg/kg	23000	2500	8600	8000	260	5.4	2.4	3200	270	35000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	920	300	710	870	30	1.4	< 1.3 U	350	24	2500

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S038	SC-S042	SC-S042	SC-S042	SC-S045	SC-S045	SC-S045	SC-S053	SC-S053	SC-S053
		Sample ID	PDI-SC-S038-5.4TO7.2	PDI-SC-S042-0TO2	PDI-SC-S042-2TO4	PDI-SC-S042-4TO6	PDI-SC-S045-0TO2	PDI-SC-S045-2TO4	PDI-SC-S045-4TO6	PDI-SC-S053-0TO2	PDI-SC-S053-10TO12.4	PDI-SC-S053-2TO4
		Sample Date	7/31/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	8/16/2018	8/16/2018	8/16/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	5.4-7.2 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	2-4 ft	4-6 ft	0-2 ft	10-12.4 ft	2-4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	56.9	54.1	64.6	63.4	76.5	72.6	73.1	53.0	66.4	57.8
Total Solids@70C	TSOLID70	%	60	55	65	67	76	72	73	55	68	58
Total Solids (%)	%SOLID	%	57.1	53.5	67.8	68.1	77.4	71.3	73.5	54.8	64.5	56.3
Clay	GS-Clay	%	13.8	10.7	7.0	12.7	16.2	11.4	12.1	9.5	8.4	11.8
Gravel	GS-Gravel	%	0	0	0	5.7	0.1	2.0	0	0	0	0.5
Sand, Coarse	GS-Csand	%	0.2	0.3	1.0	0.2	1.0	0.2	0	0	0.1	0.2
Sand, Fine (#200) (d)	GS-Fsand-200	%	35.93	25.38	44.68	38.32	16	12.8	11.14	31.28	9.55	27.27
Sand, Fine (#230) (d)	GS-Fsand	%	41.7	29.2	48.0	41.5	16.9	17.4	16.5	39.2	14.8	34.3
Sand, Medium	GS-Msand	%	0.7	2.9	5.3	4.3	1.7	0.3	0.1	0.1	0.1	0.3
Silt (#200) (d)	GS-Silt-200	%	49.36	60.81	42.01	38.67	64.89	73.39	76.65	59.11	81.84	59.92
Silt (#230) (d)	GS-Silt	%	43.6	57.0	38.7	35.5	64.0	68.8	71.3	51.2	76.6	52.9
Percent Fines (e)	GS-FINES	%	63.16	71.51	49.01	51.37	81.09	84.79	88.75	68.61	90.24	71.72
Liquid Limit	GS-LL	None	0							52		
Plasticity Index	GS-PI	None	< 0 U							13		
Plasticity Limit	GS-PL	None	0							39		
Total Organic Carbon	TOC	mg/kg	53000	21000	12000	15000	3100	780 J	440 J	43000	9200	50000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S053	SC-S053	SC-S053	SC-S055	SC-S055	SC-S055	SC-S055	SC-S061	SC-S061	SC-S061
		Sample ID	PDI-SC-S053-4TO6	PDI-SC-S053-6TO8	PDI-SC-S053-8TO10	PDI-SC-S055-0TO2	PDI-SC-S055-2TO4	PDI-SC-S055-4TO6	PDI-SC-S055-6TO8	PDI-SC-S061-0TO3	PDI-SC-S061-3TO4.5	PDI-SC-S061-4.5TO6
		Sample Date	8/16/2018	8/16/2018	8/16/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/23/2018	7/23/2018	7/23/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	6-8 ft	0-3 ft	3-4.5 ft	4.5-6 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.14	0.0032 J	0.0020 J	0.17	0.47	0.52	0.36	0.13	0.45 J	0.10
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.12	0.0029 J	0.00014 JN	0.020	0.054	0.087	0.078	0.0091	0.045 J-	0.0091
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.0047	0.00057 J+	< 0.00029 U	0.0015 J	0.0045 J	0.0081	0.0055	0.0011 J	< 0.0063 UJ	0.00070 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00098 J	< 0.00012 UJ	< 0.00015 U	0.0013 J	0.0036 JN	0.0036 J	0.0026 J	0.00051 J+	0.0028 J	0.00068 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.021	0.00030 JN	0.000080 J	0.0031 J	0.016 J	0.027	0.011	0.0038	0.0082	0.0019 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0061	0.00018 J	0.00014 J	0.0057	0.022 J	0.020	0.011	0.0021 J	0.015	0.0030 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.0096	0.00029 J	0.000059 J	0.0011 JN	0.0051 JN	0.0098	0.0057	0.00070 J	0.0031 J	0.00060 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0028 J	0.00025 J	0.00031 J	0.0035 J	0.010 J	0.0076	0.0048	0.0013 J	0.0056	0.0015 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0011 J+	0.0011 J+	< 0.00085 U	0.00023 J	< 0.00087 U	0.00057 J	< 0.00029 U	< 0.000067 U	< 0.00030 U	0.000070 JN
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00093 J	0.000050 J	< 0.000024 U	0.00076 J	0.0023 J	0.0020 J	0.0012 J	0.00019 J	0.0017 J	0.00028 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.0081	0.00031 J+	0.00016 J+	0.00086 J	0.0052 J	0.014	0.0051	0.00023 J	0.0023 J	0.00041 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0024 J	< 0.000050 U	0.000039 JN	0.00063 J	0.0022 J	0.0024 J	0.0014 J	0.00030 J	0.0013 J	0.00028 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.0039	0.00014 J	0.000091 J	0.00079 J	0.0032 J	0.0055	0.0025 J	0.00084 J	0.0025 J	0.00045 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00039 J	< 0.000029 U	< 0.000025 U	0.00037 JN	0.00065 JN	0.0014	0.00072 J	< 0.000022 U	0.00054 J	< 0.00011 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0047	< 0.00035 U	< 0.00023 U	0.0012	0.0048 J	0.0082	0.0029	0.00020 J	0.0029	0.00054 J
OCDD	3268-87-9	µg/kg	1.8	0.036 J	0.019	1.6	4.3	5.9 J	4.5 J	0.98	0.023	0.88
OCDF	39001-02-0	µg/kg	0.14	0.0026 J	0.00037 J	0.067	0.16	0.21	0.26	0.019	0.12	0.023
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.011	0.00041	0.00016	0.0055	0.017	0.021	0.013	0.0031	0.012	0.0027
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.011	0.00038	0.00016	0.0052	0.016	0.021	0.013	0.0031	0.012	0.0027
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.011	0.00036	0.00012	0.005	0.016	0.021	0.013	0.003	0.012	0.0026
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.1 U	< 3.0 U	< 2.8 U	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 UJ	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1221	11104-28-2	µg/kg	< 3.1 U	< 3.0 U	< 2.8 U	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 U	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1232	11141-16-5	µg/kg	< 3.1 UJ	< 3.0 UJ	< 2.8 UJ	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 U	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1242	53469-21-9	µg/kg	< 3.1 UJ	< 3.0 UJ	< 2.8 UJ	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 U	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1248	12672-29-6	µg/kg	< 3.1 UJ	< 3.0 UJ	< 2.8 UJ	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 UJ	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1254	11097-69-1	µg/kg	< 3.1 U	< 3.0 U	< 2.8 U	< 3.8 UJ	< 3.6 UJ	< 3.0 UJ	< 3.0 U	< 2.4 U	< 3.2 U	< 2.8 U
Aroclor 1260	11096-82-5	µg/kg	5.2 J	< 3.0 U	< 2.8 U	4.6 J	6.7 J	22 J	5.3 J	< 2.4 UJ	6.5 J	< 2.8 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	5.2	< 3 UJ	< 2.8 UJ	4.6	6.7	22	5.3	< 2.4 UJ	6.5	< 2.8 U
Pesticides												
2,4-DDD	53-19-0	µg/kg	4.34	0.130 J	0.155 J	0.640 J	1.42 J	1.88	1.84	0.307 J	2.21 J	0.05 J
2,4-DDE	3424-82-6	µg/kg	0.629 J	< 0.014 U	< 0.017 U	0.140 J	0.300 J	0.575 J	0.423 J	0.0387 J	0.344 J	0.0111 J
2,4-DDT	789-02-6	µg/kg	0.417 J	< 0.0086 U	< 0.015 U	0.159 J	0.336 J	0.270 J	0.159 J	0.0623 J	0.432 J	< 0.0065 UJ
4,4'-DDD	72-54-8	µg/kg	7.75	0.225 J	0.236 J	2.55	4.00	7.30	6.27	1.3 J	7.43	0.117 J
4,4'-DDE	72-55-9	µg/kg	2.25 J	0.0688 J	0.0343 J	4.29	5.18	8.02	6.88	0.399	5.56	0.0611 J
4,4'-DDT	50-29-3	µg/kg	1.20 J	< 0.151 U	0.282 J	0.506 J	0.790 J	1.79 J	0.324 J	0.401 J	1.57 J	0.00972 J
DDx (b)	T_DDx (PDI)	µg/kg	16.6	0.499	0.716	8.29	12	19.8	15.9	2.51	17.5	0.252
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	570	74	3.6 J	65	230	230	200	49	490	16
Acenaphthene	83-32-9	µg/kg	2000	170	3.0 J	870	3300	290	290	31	3600	92
Acenaphthylene	208-96-8	µg/kg	490	140	3.2 J	24 J	39 J	74	49	45	160	11
Anthracene	120-12-7	µg/kg	1400	310	8.5	1000	3000	210	180	98	3400	76
Benz(a)anthracene	56-55-3	µg/kg	5800	550	14	6500	21000	510	380	540	19000	380
Benzo(a)pyrene	50-32-8	µg/kg	8000	850	24	8200	27000	420	290	630 J	23000	430
Benzo(b)fluoranthene	205-99-2	µg/kg	7000	790	23	11000	34000	600	330	770 J	32000 J	590 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	7200	910	28	5800	19000	340	240	550	17000	340
Benzo(k)fluoranthene	207-08-9	µg/kg	2200	230	7.1	3400	12000	160	130	210	8700	170
Chrysene	218-01-9	µg/kg	6800	690	17	6700	21000	570	390	560 J	19000	400
Dibenz(a,h)anthracene	53-70-3	µg/kg	950	100	< 7.0 U	1600	5600	98	55	81	3500	81
Fluoranthene	206-44-0	µg/kg	19000	2000	35	10000	32000	1300	1300	960	28000	790
Fluorene	86-73-7	µg/kg	1900	150	3.3 J	380	1200	320	280	42	2100	42
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	7600	910	26	6800	20000	430	270	560	19000	400
Naphthalene	91-20-3	µg/kg	1700	420	10	180	610	450	370	88	1100	33
Phenanthrene	85-01-8	µg/kg	19000	1600	34	3800	12000	1000	1300	300	14000	360
Pyrene	129-00-0	µg/kg	25000	2700	54	9700	30000	1300	1400	1400	27000	770
Total PAHs (b)	T_PAH (PDI)	µg/kg	120000	13000	300	76000	240000	8300	7500	6900	220000	5000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	11000	1200	34	12000	40000	670	440	900	34000	650

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S053	SC-S053	SC-S053	SC-S055	SC-S055	SC-S055	SC-S055	SC-S061	SC-S061	SC-S061
		Sample ID	PDI-SC-S053-4TO6	PDI-SC-S053-6TO8	PDI-SC-S053-8TO10	PDI-SC-S055-0TO2	PDI-SC-S055-2TO4	PDI-SC-S055-4TO6	PDI-SC-S055-6TO8	PDI-SC-S061-0TO3	PDI-SC-S061-3TO4.5	PDI-SC-S061-4.5TO6
		Sample Date	8/16/2018	8/16/2018	8/16/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/23/2018	7/23/2018	7/23/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	6-8 ft	0-3 ft	3-4.5 ft	4.5-6 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	62.6	65.6	69.0	51.5	54.8	64.0	65.6	81.4	61.3	70.4
Total Solids@70C	TSOLID70	%	63	66	69	52	57	65	68	82	61	70
Total Solids (%)	%SOLID	%	63.5	64.6	73.3	52.6	54.7	63.8	65	79.8	61.1	71.2
Clay	GS-Clay	%	12.0	8.5	9.7	13.9	13.7	14.0	9.5	0.8	8.0	7.1
Gravel	GS-Gravel	%	0	0	0	0	0	1.0	0	5.7	1.0	0
Sand, Coarse	GS-Csand	%	0.7	0.6	0	0	0.1	0.2	0.1	2.5	1.3	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	37.36	32.53	9.206	15.35	21.68	27.96	31.01	44.02	38.76	26.35
Sand, Fine (#230) (d)	GS-Fsand	%	41.5	40.5	15.5	19.5	24.9	32.0	34.3	44.3	41.6	33.2
Sand, Medium	GS-Msand	%	1.3	0.4	0.1	0.2	0.6	0.8	4.4	43.9	12.4	0.8
Silt (#200) (d)	GS-Silt-200	%	48.63	57.96	80.99	70.54	63.81	56.03	54.98	3.074	38.53	65.64
Silt (#230) (d)	GS-Silt	%	44.5	50.0	74.7	66.4	60.6	52.0	51.7	2.8	35.7	58.8
Percent Fines (e)	GS-FINES	%	60.63	66.46	90.69	84.44	77.51	70.03	64.48	3.874	46.53	72.74
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	76000	23000	6100	20000	26000	23000	15000	2300	27000	7800

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S062	SC-S062	SC-S062	SC-S062	SC-S064	SC-S064	SC-S064	SC-S065	SC-S065	SC-S065
			Sample ID	PDI-SC-S062-0TO2	PDI-SC-S062-2TO4	PDI-SC-S062-4TO6	PDI-SC-S062-6TO7.7	PDI-SC-S064-0TO2	PDI-SC-S064-2TO3.5	PDI-SC-S064-3.5TO4.8	PDI-SC-S065-0TO2	PDI-SC-S065-10TO12	PDI-SC-S065-12TO14.3
			Sample Date	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/24/2018	7/24/2018	7/24/2018	8/14/2018	8/14/2018	8/14/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	0-2 ft	2-4 ft	4-6 ft	6-7.7 ft	0-2 ft	2-3.5 ft	3.5-4.8 ft	0-2 ft	10-12 ft	12-14.3 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.061	0.087	0.098	0.065	0.19	0.46 J	0.50	0.064	0.026	0.0029 J
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.014 JN	0.014	0.014	0.011	0.045	0.13	0.17	0.016	0.014	0.0020 J
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.0041 J	0.0011 J	0.0013 J	0.0012 J	0.0059	0.020	0.024	0.0026 J	0.0013 J+	0.0012 J
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00081 J	0.00097 J	0.0010 J	0.00075 J	0.0017 J	0.0036 J	0.0039 J	0.00087 J	0.00057 J+	0.00018 J+
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.035	0.0032 J	0.0040 J	0.0043 J	0.022	0.070	0.089	0.0061	0.0018 J	0.00071 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.0023 J	0.0032 J	0.0038 J	0.0029 J	0.0070	0.017	0.019	0.0027 J	0.0027 J	0.00016 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.0070	0.0012 J	0.0014 JN	0.0016 J	0.0085	0.027	0.032	0.0026 J	0.0023 J	0.00039 J+
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0018 J	0.0024 J	0.0026 J	0.0021 J	0.0039 J	0.0071	0.0091	0.0018 J	0.0013 J	0.00026 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	0.00037 JN	< 0.00017 U	0.00018 JN	0.00017 J	0.00059 J	0.0017 J	0.0020 J	0.0024 J+	0.0021 J+	0.0026 J+
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.00041 J	0.00033 JN	0.00043 J	0.00037 J	0.00094 J	0.0022 J	0.0025 J	0.00049 J	0.0011 J	< 0.000050 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.012	0.0013 J	0.0024 J	0.0031 J	0.014	0.047	0.053	0.0025 J	< 0.00039 U	0.00044 J+
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.00084 J	0.00047 J	0.00055 J	0.00045 J	0.0016 J	0.0052	0.0075	0.00083 J	0.00097 J	0.00010 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0024 J	0.00072 J	0.0016 J	0.0019 J	0.0079	0.018	0.024	0.0011 J	0.00089 J	0.00022 J
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.00014 U	0.00042 J	0.00030 JN	0.00026 JN	0.00054 JN	0.0013	0.0012	0.00032 JN	0.00036 JN	< 0.000052 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.0025	0.0019	0.0082	0.0077	0.015	0.023	0.024	0.0016	0.00049 J	0.00046 J
OCDD		3268-87-9	µg/kg	0.54	0.77	0.83	0.62	2.8	6.3 J	6.8 J	0.64	0.58	0.051
OCDF		39001-02-0	µg/kg	0.036	0.049	0.046	0.040	0.13	0.47	0.53	0.047	0.013	0.0066 J
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.0076	0.0036	0.0049	0.0043	0.014	0.034	0.04	0.0041	0.0035	0.00067
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.0075	0.0034	0.0045	0.0041	0.013	0.034	0.04	0.004	0.0034	0.00067
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.0075	0.0033	0.0044	0.004	0.013	0.034	0.04	0.0038	0.0032	0.00064
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 U	< 3.5 U	< 3.7 UJ	< 3.2 UJ	< 3.2 UJ
Aroclor 1221		11104-28-2	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 UJ	< 3.5 U	< 3.7 UJ	< 3.2 U	< 3.2 U
Aroclor 1232		11141-16-5	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 U	< 3.5 U	< 3.7 UJ	< 3.2 UJ	< 3.2 UJ
Aroclor 1242		53469-21-9	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 U	< 3.5 U	< 3.7 UJ	< 3.2 U	< 3.2 U
Aroclor 1248		12672-29-6	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 UJ	< 3.5 U	< 3.7 UJ	< 3.2 U	< 3.2 U
Aroclor 1254		11097-69-1	µg/kg	< 4.3 U	1.9 J	< 3.7 U	< 3.4 U	< 3.6 U	< 6.7 U	< 3.5 U	20 J	< 3.2 U	< 3.2 U
Aroclor 1260		11096-82-5	µg/kg	< 4.3 U	< 3.8 U	< 3.7 U	< 3.4 U	9.5 J	18 J	14 J	< 3.7 UJ	0.93 J	< 3.2 U
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 4.3 U	1.9	< 3.7 U	< 3.4 U	9.5	18	14	20	0.93	< 3.2 UJ
Pesticides													
2,4-DDD		53-19-0	µg/kg	0.570	0.798	1.05	1.68	11.2	45.5	33.3	2.74	0.0275 J	< 0.0053 U
2,4-DDE		3424-82-6	µg/kg	0.0829 J	0.117 J	0.119 J	0.205 J	0.958 J	3.06	3	< 0.86 UJ	< 0.0054 U	< 0.0030 U
2,4-DDT		789-02-6	µg/kg	0.0972 J	0.119 J	0.104 J	0.227 J	1.36 J	0.67 JN	0.545 J	< 0.48 U	< 0.011 UJ	< 0.0067 U
4,4'-DDD		72-54-8	µg/kg	1.72	2.51	3.42	6.25	28.9	110	72.8	7.52	0.0479 J	< 0.0261 U
4,4'-DDE		72-55-9	µg/kg	2.21	2.50	2.88	4.88	10.2	19.6	15.7	3.3 JN	< 0.0072 U	< 0.0040 U
4,4'-DDT		50-29-3	µg/kg	0.265 J	0.378 J	0.284 J	39.6 J	2.77	37.6	2.03	< 1.7 U	< 0.025 UJ	< 0.023 U
DDx	(b)	T_DDx (PDI)	µg/kg	4.95	6.42	7.86	52.8	55.4	216	127	14.4	0.0879	< 0.0261 U
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	17 J	30	24	24	530	1300	1400	74	680	600
Acenaphthene		83-32-9	µg/kg	35	69	44	65	1600	2100	2100	84	1900	1200
Acenaphthylene		208-96-8	µg/kg	17 J	33	22	21	260	430	500	29	470	380
Anthracene		120-12-7	µg/kg	58	120	73	64	560	1500	1600	86	2000	1400
Benz(a)anthracene		56-55-3	µg/kg	110	240	150	140	1700	3100	3900	170	2800	2300
Benzo(a)pyrene		50-32-8	µg/kg	120	350	180	140	1700	2500	2800	290	4300	3700
Benzo(b)fluoranthene		205-99-2	µg/kg	190	370	240	170	1900 J	2800	2800	310 J	4000	3200
Benzo(g,h,i)perylene		191-24-2	µg/kg	81	240	130	110	1600	2400	2600	260	3600	3300
Benzo(k)fluoranthene		207-08-9	µg/kg	34	120	74	56	460	780	1100	110 J	1300	1100
Chrysene		218-01-9	µg/kg	210	370	250	180	1900	3400	4200	270	4000	3100
Dibenz(a,h)anthracene		53-70-3	µg/kg	13 J	32	34	16	180	230	360	< 18 U	370	280
Fluoranthene		206-44-0	µg/kg	360	650	480	370	5000	8500	9400	500 J	11000	8800
Fluorene		86-73-7	µg/kg	40	57	51	57	1000	1800	1700	64	1400	880
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	93	280	160	120	1500	2400	2400	310	3900	3500
Naphthalene		91-20-3	µg/kg	38	92	63	56	1300	2600	2800	230 J	3800	3300
Phenanthrene		85-01-8	µg/kg	190	350	270	290	7300	12000	13000	410 J	13000	7700
Pyrene		129-00-0	µg/kg	330	710	480	370	6400	11000	13000	540 J	13000	11000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	1900	4100	2700	2200	35000	59000	66000	3700	72000	56000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	170	470	270	200	2400	3600	4100	380	5800	4900

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S062	SC-S062	SC-S062	SC-S062	SC-S064	SC-S064	SC-S064	SC-S065	SC-S065	SC-S065
		Sample ID	PDI-SC-S062-0TO2	PDI-SC-S062-2TO4	PDI-SC-S062-4TO6	PDI-SC-S062-6TO7.7	PDI-SC-S064-0TO2	PDI-SC-S064-2TO3.5	PDI-SC-S064-3.5TO4.8	PDI-SC-S065-0TO2	PDI-SC-S065-10TO12	PDI-SC-S065-12TO14.3
		Sample Date	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/24/2018	7/24/2018	7/24/2018	8/14/2018	8/14/2018	8/14/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	2-4 ft	4-6 ft	6-7.7 ft	0-2 ft	2-3.5 ft	3.5-4.8 ft	0-2 ft	10-12 ft	12-14.3 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	45.6	50.5	51.9	54.5	55.6	56.4	55.7	53.1	62.3	60.6
Total Solids@70C	TSOLID70	%	47	50	53	55	56	54	56	55	62	62
Total Solids (%)	%SOLID	%	46.2	50	52.6	54.6	56.2	51.7	58.1	51.9	62.6	60.7
Clay	GS-Clay	%	12.8	16.7	16.9	17.4	12.7	11.1	8.1	11.0	9.4	15.8
Gravel	GS-Gravel	%	0	0	0	0	0.7	0.6	0	0	0.6	0
Sand, Coarse	GS-Csand	%	0	0	0	0	0.5	0.3	0.7	0	0.4	1.0
Sand, Fine (#200) (d)	GS-Fsand-200	%	14.78	13.89	11.29	10.33	23.7	22.69	19.12	22.51	27.17	19.74
Sand, Fine (#230) (d)	GS-Fsand	%	20.3	19.0	16.0	13.5	28.2	28.7	23.5	28.5	31.7	24.8
Sand, Medium	GS-Msand	%	0.1	0.3	0.2	0.1	1.9	1.5	1.2	0.4	3.4	0.6
Silt (#200) (d)	GS-Silt-200	%	72.31	69.10	71.70	72.26	60.39	63.80	70.87	66.08	58.92	62.75
Silt (#230) (d)	GS-Silt	%	66.8	64.0	67.0	69.1	55.9	57.8	66.5	60.1	54.4	57.7
Percent Fines (e)	GS-FINES	%	85.11	85.8	88.6	89.66	73.09	74.9	78.97	77.08	68.32	78.55
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	35000	36000	35000	32000	34000	61000	180000	41000	92000	64000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
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DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
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PeCDD = pentachlorodibenzo-p-dioxin
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QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S065	SC-S065	SC-S065	SC-S065	SC-S066	SC-S066	SC-S066	SC-S066	SC-S070	SC-S070
		Sample ID	PDI-SC-S065-2TO4	PDI-SC-S065-4TO6	PDI-SC-S065-6TO8	PDI-SC-S065-8TO10	PDI-SC-S066-0TO2	PDI-SC-S066-2TO4	PDI-SC-S066-4TO5.8	PDI-SC-S066-5.8TO6.6	PDI-SC-S070-0TO1.1	PDI-SC-S070-1.1TO2.4
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	8/14/2018	8/14/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-5.8 ft	5.8-6.6 ft	0-1.1 ft	1.1-2.4 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.23 J	0.46 J	0.25	0.33	0.14	0.025	0.0056	0.0054	0.096	0.017
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.061	0.065	0.13	0.46	0.017	0.010	0.0017 J	0.0019 JN	0.037 J	0.0051
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.010	0.0087	0.0045	0.0048	0.00058 J	0.00081 J+	< 0.00021 UJ	< 0.00017 U	0.0048 J	0.0011 J+
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.0019 J	0.0012 J	0.0011 J	0.00098 J	0.00040 J+	0.00060 J+	0.00018 J+	0.00021 J+	0.00089 J	0.00032 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.037	0.039	0.0075	0.0075	0.00088 J	< 0.00032 U	< 0.00012 U	< 0.00010 U	0.012	0.0019 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0082	0.0087	0.0088	0.013	0.032	0.0021 J	0.00036 J	0.00034 J	0.0044	0.0015 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.020	0.012	0.0083	0.016	0.00047 JN	0.0017 J	< 0.00012 U	0.00025 JN	0.0054	0.00081 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0047	0.0030 J	0.0032 J	0.0035 J	0.0091	0.0015 J	0.00042 J+	0.00037 JN	0.0026 J	0.0012 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0020 J+	0.0045 J+	0.0051 J+	0.0033 J+	0.000053 J+	< 0.00018 U	< 0.000055 U	< 0.000047 U	0.0030 J+	0.0016 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.0012 J	0.00090 J	0.0015 J	0.0011 J	0.00019 J	0.0011 J	0.00019 J	0.00013 J	0.00066 J	0.00019 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.019	0.039	0.0021 J	0.0011 J+	0.00024 JN	< 0.00042 U	< 0.000092 U	0.00014 J	0.0079	0.0013 J+
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0031 J	0.0040 J	0.0040 J	0.0053	0.00027 J	0.0015 J	0.00022 J	0.00019 J	0.0011 J	0.00025 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.0063	0.027	0.0034 J	0.0025 J	0.00017 J	0.0012 J	< 0.000095 U	0.00018 J	0.0036 J	0.00057 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00071 JN	0.00052 JN	0.00048 JN	0.00018 JN	< 0.000075 U	0.00031 JN	< 0.000040 U	< 0.000031 U	0.00038 JN	< 0.000021 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.011	0.048	0.0021	0.00094	0.00038 J	0.00068 J	0.00026 J	0.00031 J	0.0061	0.00095
OCDD	3268-87-9	µg/kg	3.1	3.5	2.7	3.5 J	0.59	0.30	0.080	0.075	1.3	0.16
OCDF	39001-02-0	µg/kg	0.19	0.18	0.26	0.29	0.033	0.021	0.0027 J+	0.0025 J+	0.11	0.015
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.017	0.029	0.012	0.016	0.0064	0.003	0.00045	0.00047	0.0077	0.0015
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.017	0.029	0.012	0.016	0.0063	0.0029	0.00045	0.00039	0.0075	0.0015
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.016	0.029	0.011	0.016	0.0063	0.0027	0.00043	0.00037	0.0073	0.0015
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.8 UJ	< 3.6 UJ	< 3.5 UJ	< 3.1 UJ	< 2.5 U	< 6.2 U	< 2.7 UJ	< 2.8 U	< 3.4 UJ	< 2.4 UJ
Aroclor 1221	11104-28-2	µg/kg	< 3.8 U	< 3.6 UJ	< 3.5 UJ	< 3.1 U	< 2.5 U	< 6.2 UJ	< 2.7 UJ	< 2.8 U	< 3.4 U	< 2.4 U
Aroclor 1232	11141-16-5	µg/kg	< 3.8 UJ	< 3.6 UJ	< 3.5 UJ	< 3.1 UJ	< 2.5 U	< 6.2 U	< 2.7 UJ	< 2.8 U	< 3.4 UJ	< 2.4 UJ
Aroclor 1242	53469-21-9	µg/kg	< 3.8 U	< 3.6 UJ	< 3.5 UJ	< 3.1 U	< 2.5 U	< 6.2 U	< 2.7 UJ	< 2.8 U	< 3.4 U	< 2.4 U
Aroclor 1248	12672-29-6	µg/kg	< 3.8 U	< 3.6 UJ	< 3.5 UJ	< 3.1 U	< 2.5 U	< 6.2 UJ	< 2.7 UJ	< 2.8 U	< 3.4 U	< 2.4 U
Aroclor 1254	11097-69-1	µg/kg	20 J	< 3.6 UJ	27 J	< 3.1 U	< 2.5 U	< 6.2 U	< 2.7 UJ	< 2.8 U	< 3.4 U	< 2.4 U
Aroclor 1260	11096-82-5	µg/kg	< 3.8 U	< 3.6 UJ	< 3.5 UJ	11 J	1.0 J	2.3 J	< 2.7 UJ	< 2.8 U	< 3.4 U	< 2.4 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	20	< 3.6 UJ	27	11	1	2.3	< 2.7 UJ	< 2.8 U	< 3.4 UJ	< 2.4 UJ
Pesticides												
2,4-DDD	53-19-0	µg/kg	5.87	99.4	1.77	0.0284 J	0.128 J	12.7	0.395 J	0.198 J	29.9	4.62
2,4-DDE	3424-82-6	µg/kg	< 0.55 UJ	5.45	0.882 J	< 0.0050 U	0.0193 J	0.289 J	0.0109 J	0.00849 J	2.93	0.377 J
2,4-DDT	789-02-6	µg/kg	< 0.32 U	2.09	0.054 JN	< 0.011 U	0.0265 J	< 0.028 UJ	< 0.007 UJ	< 0.016 UJ	0.990 J	0.122 J
4,4'-DDD	72-54-8	µg/kg	16.7	145	4.00	0.0600 J	0.43 J	19.6	0.684 J	0.245 J	73.6	8.70
4,4'-DDE	72-55-9	µg/kg	7.56 J	21.5	6.10	0.0371 J	0.54	2.86 J	0.0917 J	0.0396 J	12.5	1.59
4,4'-DDT	50-29-3	µg/kg	< 0.97 U	114	0.143 J	< 0.026 U	0.0795 J	0.21 J	< 0.008 UJ	< 0.022 UJ	5.06	0.178 J
DDx (b)	T_DDx (PDI)	µg/kg	30.6	387	12.9	0.139	1.22	35.7	1.19	0.502	125	15.6
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	540	3200	2400	1300	11	780	240	150	730	36
Acenaphthene	83-32-9	µg/kg	1800	16000	10000	5000	13	1500	500	320	1800	250
Acenaphthylene	208-96-8	µg/kg	160	840	1100	670	6.8	610	210	200	150	24
Anthracene	120-12-7	µg/kg	560	15000	14000	10000	19	1600	650	560	730	100
Benz(a)anthracene	56-55-3	µg/kg	1100	13000	15000	14000	49	1500	1200	980	1300	220
Benzo(a)pyrene	50-32-8	µg/kg	1400	19000	23000	21000	54	1800	1500	1400	1600	260
Benzo(b)fluoranthene	205-99-2	µg/kg	1300	16000	19000	17000	62 J	1800 J	1500 J	1400 J	1500	260
Benzo(g,h,i)perylene	191-24-2	µg/kg	1200	14000	18000	17000	55	1800	1400	1300	1200	190
Benzo(k)fluoranthene	207-08-9	µg/kg	490	5800	6300	6500	15	520	410	390	430	80
Chrysene	218-01-9	µg/kg	1600	17000	20000	16000	50	1900	1400	1300	1800	310
Dibenz(a,h)anthracene	53-70-3	µg/kg	130	1400	2000	1800	5.4	160	140	100	150	23
Fluoranthene	206-44-0	µg/kg	3400	51000	54000	47000	110	6800	3900	3900	4900	780
Fluorene	86-73-7	µg/kg	1000	9900	8600	4200	15	1400	350	290	990	150
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	1300	15000	19000	18000	55	1500	1200	1100	1400	240
Naphthalene	91-20-3	µg/kg	1000	5900	4100	3700	40	2400	950	660	1600	86
Phenanthrene	85-01-8	µg/kg	5400	73000	67000	46000	87	7500	3000	2700	5700	900
Pyrene	129-00-0	µg/kg	4000	63000	70000	58000	130	8200	5000	5000	5900	970
Total PAHs (b)	T_PAH (PDI)	µg/kg	26000	340000	350000	290000	780	42000	24000	22000	32000	4900
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	1900	25000	30000	28000	76	2400	2000	1900	2200	360

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S065	SC-S065	SC-S065	SC-S065	SC-S066	SC-S066	SC-S066	SC-S066	SC-S070	SC-S070
		Sample ID	PDI-SC-S065-2TO4	PDI-SC-S065-4TO6	PDI-SC-S065-6TO8	PDI-SC-S065-8TO10	PDI-SC-S066-0TO2	PDI-SC-S066-2TO4	PDI-SC-S066-4TO5.8	PDI-SC-S066-5.8TO6.6	PDI-SC-S070-0TO1.1	PDI-SC-S070-1.1TO2.4
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/23/2018	7/23/2018	7/23/2018	7/23/2018	8/14/2018	8/14/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-5.8 ft	5.8-6.6 ft	0-1.1 ft	1.1-2.4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	52.9	55.1	56.5	60.1	75.2	62.9	72.6	69.5	59.0	82.1
Total Solids@70C	TSOLID70	%	55	56	58	60	74	61	72	68	60	83
Total Solids (%)	%SOLID	%	56	57	57.5	59.6	81.5	61.8	73.1	68.6	61.6	82.9
Clay	GS-Clay	%	13.1	17.3	16.5	7.5	4.5	8.9	6.1	7.8	10.3	0
Gravel	GS-Gravel	%	2.1	0	0	0	0.8	0.1	4.4	0	0	0
Sand, Coarse	GS-Csand	%	0.4	0.1	0.1	0.2	4.1	0.2	2.1	0.3	0.3	0.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	15.76	13.78	15.83	13.17	42.19	34.03	43.09	30.49	39.4	45.66
Sand, Fine (#230) (d)	GS-Fsand	%	19.8	17.5	18.5	15.9	45.3	38.3	46.5	34.4	44.8	45.9
Sand, Medium	GS-Msand	%	0.6	0.2	0.2	0.2	29.3	2.7	15.8	2.7	5.6	48.2
Silt (#200) (d)	GS-Silt-200	%	68.13	68.61	67.36	78.92	19.00	54.06	28.50	58.70	44.39	5.732
Silt (#230) (d)	GS-Silt	%	64.1	64.9	64.7	76.2	15.9	49.8	25.1	54.8	39.0	5.5
Percent Fines (e)	GS-FINES	%	81.23	85.91	83.86	86.42	23.5	62.96	34.6	66.5	54.69	5.732
Liquid Limit	GS-LL	None	62									
Plasticity Index	GS-PI	None	24									
Plasticity Limit	GS-PL	None	38									
Total Organic Carbon	TOC	mg/kg	70000	85000	98000	93000	5600	30000	11000	18000	42000	3200

Notes:

a. Qualifiers:
- J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
- +/- = Indicates the result may be biased high/low
- JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U = Not detected at detection limit shown.
- UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S070	SC-S070	SC-S070	SC-S070	SC-S070	SC-S082	SC-S082	SC-S082	SC-S083
			Sample ID	PDI-SC-S070-10.4TO12.6	PDI-SC-S070-2.4TO4.4	PDI-SC-S070-4.4TO6.4	PDI-SC-S070-6.4TO8.4	PDI-SC-S070-8.4TO10.4	PDI-SC-S082-0TO2	PDI-SC-S082-2TO4	PDI-SC-S082-4TO6	PDI-SC-S083-0TO1.6
			Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018	7/24/2018	7/24/2018	8/1/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	10.4-12.6 ft	2.4-4.4 ft	4.4-6.4 ft	6.4-8.4 ft	8.4-10.4 ft	0-2 ft	2-4 ft	4-6 ft	0-1.6 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.0023 J	0.27	0.21	0.16	0.0068 J	0.86	0.37	0.014	0.14
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.00077 J	0.045	0.15	0.15	0.0072 J	0.13	0.053	0.0021 J	0.025
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.00087 J+	0.0066 J	0.0039 J	0.0027 J	< 0.00064 U	0.0065	< 0.00079 U	< 0.00022 U	0.0035 JN
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00020 JN	0.0026 J	0.00080 J	0.00081 J	< 0.00056 U	0.0038 J	0.0021 J	0.00021 J+	0.0013 J
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.00026 J	0.023 J	0.0073	0.0036 J	< 0.00062 U	0.0077	0.0033 J	0.00016 J	0.022
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.00023 J	0.0082 JN	0.0079	0.0076	< 0.00056 U	0.024	0.011	0.00044 JN	0.0049 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.00027 J	0.0072 J	0.0094	0.0073	< 0.00059 U	0.0046 J	0.0025 J	< 0.000088 U	0.0060 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00044 J	0.0049 J	0.0026 J	0.0023 J	< 0.00051 U	0.0082	0.0040 J	0.00038 J+	0.0035 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	0.0025 J+	0.0032 J+	0.0036 J+	0.0023 J+	0.0026 JN	0.0014 J	< 0.00020 U	< 0.000038 U	0.00041 J
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.000046 U	0.00064 JN	0.00079 J	0.00090 J	< 0.00040 U	0.0016 J	0.00097 J	< 0.000090 U	0.00079 J
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.00041 J+	0.020 J	0.0076	0.00078 J+	< 0.00034 U	0.0026 J	0.0016 J	< 0.000051 U	0.0082
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.000093 J	0.0021 J	0.0028 J	0.0027 J	< 0.00047 U	0.0025 J	0.0011 J	0.000067 J	0.0012 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.000084 JN	0.0084 J	0.0051	0.0015 J	< 0.00034 U	0.0030 J	0.0018 J	< 0.000054 U	0.0032 J
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000021 U	0.00045 J	0.00027 JN	0.00025 J	< 0.00065 U	0.00049 JN	0.00044 J	< 0.000048 U	0.00039 JN
2,3,7,8-TCDF		51207-31-9	µg/kg	0.00038 J	0.015	0.015	0.00094	0.00047 J	0.0036	0.0040	0.000087 JN	0.0074
OCDD		3268-87-9	µg/kg	0.026	2.0	2.5	2.3	0.087	8.5 J	3.6 J	0.13	1.2
OCDF		39001-02-0	µg/kg	0.00090 JN	0.12	0.15	0.12	0.0086 J	0.61	0.21	0.0093	0.067
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.00055	0.015	0.012	0.0082	0.0008	0.021	0.01	0.00038	0.0091
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.0005	0.014	0.012	0.0082	0.00054	0.021	0.01	0.00033	0.0089
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.00048	0.013	0.012	0.0082	0.00022	0.021	0.01	0.00028	0.0087
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 3.0 U	< 3.1 UJ	< 3.2 UJ	< 3.1 UJ	< 3.1 UJ	< 3.8 UJ	< 3.3 U	< 2.9 U	< 28 U
Aroclor 1221		11104-28-2	µg/kg	< 3.0 U	< 3.1 U	< 3.2 U	< 3.1 U	< 3.1 U	< 3.8 UJ	< 3.3 U	< 2.9 UJ	< 28 UJ
Aroclor 1232		11141-16-5	µg/kg	< 3.0 U	< 3.1 UJ	< 3.2 UJ	< 3.1 UJ	< 3.1 UJ	< 3.8 UJ	< 3.3 U	< 2.9 U	< 28 U
Aroclor 1242		53469-21-9	µg/kg	< 3.0 U	< 3.1 U	< 3.2 U	< 3.1 U	< 3.1 U	< 3.8 UJ	< 3.3 U	< 2.9 U	< 28 U
Aroclor 1248		12672-29-6	µg/kg	< 3.0 UJ	< 3.1 U	< 3.2 U	< 3.1 U	< 3.1 U	< 3.8 UJ	< 3.3 U	< 2.9 UJ	< 28 UJ
Aroclor 1254		11097-69-1	µg/kg	< 3.0 U	< 3.1 U	< 3.2 U	< 3.1 U	< 3.1 U	45 J	23 J	1.4 J	< 28 U
Aroclor 1260		11096-82-5	µg/kg	< 3.0 U	< 3.1 U	8.7 J	< 3.1 U	< 3.1 U	< 3.8 UJ	< 3.3 U	< 2.9 U	< 28 UJ
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 3 UJ	< 3.1 UJ	8.7	< 3.1 UJ	< 3.1 UJ	45	23	1.4	< 28 UJ
Pesticides												
2,4-DDD		53-19-0	µg/kg	0.030 JN	102	2.64	0.481 J	0.0929 J	4.14	2.28 J	0.128 J	12.4 J
2,4-DDE		3424-82-6	µg/kg	< 0.0053 U	4.54	0.272 J	0.038 JN	0.0132 J	0.293 J	0.27 J	0.0237 J	0.310 J
2,4-DDT		789-02-6	µg/kg	< 0.012 UJ	1.19 J	0.0593 J	< 0.041 U	< 0.011 UJ	0.442 J	0.542 J	< 0.0038 UJ	0.318 J
4,4'-DDD		72-54-8	µg/kg	0.0743 J	152	4.86	0.730 J	0.169 J	10.4	6.12	0.376 J	19.5 J
4,4'-DDE		72-55-9	µg/kg	< 0.0071 U	17.4	1.18 J	0.147 J	0.0328 J	3.13	5.95	0.183 J	3.62
4,4'-DDT		50-29-3	µg/kg	0.0586 J	32.3	0.398 J	0.571 J	< 0.022 UJ	1.17 J	1.63 J	< 0.011 UJ	1.04 J
DDx	(b)	T_DDx (PDI)	µg/kg	0.169	309	9.41	1.99	0.319	19.6	16.8	0.716	37.2
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	610	3200	2300	680	580	430	230	9.6 J	1400
Acenaphthene		83-32-9	µg/kg	1900	14000	7400	2600	3100	490	340	95	31000
Acenaphthylene		208-96-8	µg/kg	360	730	720	410	540	240	190	6.9 J	2600
Anthracene		120-12-7	µg/kg	1600	12000	6700	2200	4300	540	490	26	22000
Benz(a)anthracene		56-55-3	µg/kg	1600	11000	9100	4500	5700	1600	960	70	21000
Benzo(a)pyrene		50-32-8	µg/kg	2600	13000	13000	6500	8200	1600	1200	49	21000
Benzo(b)fluoranthene		205-99-2	µg/kg	2300	12000	12000	6200	7500	2300 J	1300 J	70	22000
Benzo(g,h,i)perylene		191-24-2	µg/kg	2200	9700	11000	5000	6600	1400	1400	40	17000
Benzo(k)fluoranthene		207-08-9	µg/kg	700	3400	3500	1700	2400	680	350	25	5500
Chrysene		218-01-9	µg/kg	2200	13000	12000	6100	7800	1900	1300	77	23000
Dibenz(a,h)anthracene		53-70-3	µg/kg	170	1200	1100	560	690	250	95	8.3 J	2000
Fluoranthene		206-44-0	µg/kg	8700	39000	36000	16000	20000	3400	3700	220	62000
Fluorene		86-73-7	µg/kg	1200	8300	4900	1600	2100	480	280	39	14000
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	2300	11000	11000	5700	7300	1600	1200	49	17000
Naphthalene		91-20-3	µg/kg	3100	6300	6500	2700	2500	1500	660	23	3200
Phenanthrene		85-01-8	µg/kg	12000	60000	44000	17000	22000	2200	2600	260	93000
Pyrene		129-00-0	µg/kg	11000	48000	45000	19000	24000	3600	4900	190	78000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	55000	270000	230000	98000	130000	24000	21000	1300	440000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	3400	18000	17000	8700	11000	2400	1600	77	29000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S070	SC-S070	SC-S070	SC-S070	SC-S070	SC-S082	SC-S082	SC-S082	SC-S083
			Sample ID	PDI-SC-S070-10.4TO12.6	PDI-SC-S070-2.4TO4.4	PDI-SC-S070-4.4TO6.4	PDI-SC-S070-6.4TO8.4	PDI-SC-S070-8.4TO10.4	PDI-SC-S082-0TO2	PDI-SC-S082-2TO4	PDI-SC-S082-4TO6	PDI-SC-S083-0TO1.6
			Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018	7/24/2018	7/24/2018	8/1/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	10.4-12.6 ft	2.4-4.4 ft	4.4-6.4 ft	6.4-8.4 ft	8.4-10.4 ft	0-2 ft	2-4 ft	4-6 ft	0-1.6 ft
Chemical		**CAS_RN**	**Units**									
Other												
Total Solids@104C		TSOLID	%	63.4	61.7	61.0	62.4	64.2	51.6	60.5	66.8	35.5
Total Solids@70C		TSOLID70	%	65	61	62	64	65	53	59	68	28
Total Solids (%)		%SOLID	%	63.6	60.5	62.1	64.7	65.5	56.7	43.3	67.3	38.5
Clay		GS-Clay	%	9.6	15.4	12.4	9.7	10.8	8.0	7.9	10.4	19.9
Gravel		GS-Gravel	%	1.3	0	1.0	0	0	0.1	0.1	0	0
Sand, Coarse		GS-Csand	%	0.1	0.6	0.2	0.5	0	0.1	0.3	0	0.1
Sand, Fine (#200)	(d)	GS-Fsand-200	%	25.29	21.02	29.26	31.12	32.28	35.87	28.3	18.73	11.46
Sand, Fine (#230)	(d)	GS-Fsand	%	28.6	24.5	33.0	34.2	36.8	45.1	34.3	24.5	14.1
Sand, Medium		GS-Msand	%	4.4	7.6	6.8	13.9	8.8	1.0	2.1	0.4	0.4
Silt (#200)	(d)	GS-Silt-200	%	59.40	55.47	50.23	44.77	48.11	55.02	61.29	70.36	68.13
Silt (#230)	(d)	GS-Silt	%	56.1	52.0	46.5	41.7	43.6	45.8	55.3	64.6	65.5
Percent Fines	(e)	GS-FINES	%	69	70.87	62.63	54.47	58.91	63.02	69.19	80.76	88.03
Liquid Limit		GS-LL	None									
Plasticity Index		GS-PI	None									
Plasticity Limit		GS-PL	None									
Total Organic Carbon		TOC	mg/kg	45000	64000	76000	56000	49000	29000	19000	11000	47000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S083	SC-S083	SC-S083	SC-S085	SC-S085	SC-S085	SC-S085	SC-S086	SC-S086	SC-S086
			Sample ID	PDI-SC-S083-1.6TO3.5	PDI-SC-S083-3.5TO5	PDI-SC-S083-5TO6.6	PDI-SC-S085-0TO2	PDI-SC-S085-2TO4	PDI-SC-S085-4TO6.4	PDI-SC-S085-4TO6.4D	PDI-SC-S086-0TO2	PDI-SC-S086-0TO2D	PDI-SC-S086-2TO3.3
			Sample Date	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/2/2018	8/2/2018	8/2/2018
			Sample Type Code	N	N	N	N	N	N	FD	N	FD	N
			Depth	1.6-3.5 ft	3.5-5 ft	5-6.6 ft	0-2 ft	2-4 ft	4-6.4 ft	4- ft	0-2 ft	0- ft	2-3.3 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.046	0.20	0.25 J	0.10	0.0023 J	0.0016 J	0.0014 J	0.11 J	0.019 J	0.099
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.0030 J	0.0085 J	0.011	0.077	0.0016 J	0.00068 J	0.00046 J+	0.015 J	0.0032	0.0046
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	< 0.00066 U	< 0.00081 U	0.0011 J	0.0032 J	0.00033 J	0.00037 J	< 0.00010 U	< 0.0017 U	< 0.00019 U	< 0.00023 U
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00045 JN	0.00073 J+	0.00074 J+	0.00095 J	< 0.00011 U	< 0.000065 U	0.00024 J+	< 0.00087 U	< 0.00022 U	0.00023 JN
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	< 0.00064 U	0.0016 J	0.0018 J	0.0067	0.00098 J	0.00045 J	0.00028 J	0.0031 JN	0.0012 J	0.0019 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.0017 J	0.0031 J	0.0032 JN	0.0046	0.00014 J	< 0.000065 U	0.000099 J	0.0027 J	0.00054 JN	0.0017 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	< 0.00053 U	< 0.00079 U	0.00063 J	0.0074	0.00047 J	0.00021 JN	< 0.000075 U	< 0.00097 U	0.00042 J	0.00054 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0010 J	< 0.00045 U	0.0028 J	0.0028 J	0.00016 JN	0.00031 J	0.00021 JN	0.0025 J	0.00032 J	0.0011 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.00035 U	< 0.00054 U	< 0.000099 U	< 0.00040 U	< 0.00013 U	< 0.000066 U	< 0.000061 U	< 0.00063 U	< 0.00013 U	< 0.00021 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.00039 U	< 0.00045 U	0.00036 J	0.00048 JN	< 0.00019 U	< 0.000096 U	< 0.000071 U	< 0.00093 U	< 0.00010 U	< 0.00032 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.00053 JN	0.0013 JN	0.00096 J	0.0019 J	0.00032 J	0.00032 J	0.00011 JN	< 0.00074 U	0.00057 J	0.0010 J
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	< 0.00039 U	< 0.00056 U	0.00033 JN	0.0018 JN	< 0.00012 U	< 0.000064 U	< 0.000058 U	< 0.00076 U	< 0.00012 U	< 0.00014 U
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	< 0.00026 U	< 0.00033 U	0.00062 J	0.0017 J	0.00020 JN	< 0.000086 U	< 0.000057 U	< 0.00088 U	0.00031 JN	0.00043 J
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.00036 U	< 0.00036 U	< 0.00013 U	< 0.00028 U	0.00035 JN	< 0.000071 U	< 0.000052 U	< 0.0020 U	< 0.00012 U	< 0.000055 U
2,3,7,8-TCDF		51207-31-9	µg/kg	< 0.00023 U	0.00096 JN	< 0.00050 U	0.0047	0.00052 J	0.00047 J	0.00026 J	< 0.0020 U	0.00043 JN	0.00064 JN
OCDD		3268-87-9	µg/kg	0.38	1.6	2.0 J	1.3	0.014	0.013	0.012	0.89 J	0.17 J	0.74
OCDF		39001-02-0	µg/kg	0.016 J	0.063	0.086	0.11	0.0022 J+	0.0014 JN	0.0010 JN	0.038 J	0.0070 J	0.029
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.0011	0.0035	0.0048	0.0063	0.00079	0.00023	0.00017	0.0034	0.00074	0.0022
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.0011	0.0034	0.0048	0.0057	0.00044	0.00021	0.00015	0.003	0.00055	0.0021
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.00088	0.0031	0.0047	0.0055	0.00027	0.00016	0.00011	0.002	0.00049	0.0019
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 12 U	< 12 U	< 13 U	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1221		11104-28-2	µg/kg	< 12 UJ	< 12 UJ	< 13 UJ	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1232		11141-16-5	µg/kg	< 12 U	< 12 U	< 13 U	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1242		53469-21-9	µg/kg	< 12 U	< 12 U	< 13 U	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1248		12672-29-6	µg/kg	< 12 UJ	< 12 UJ	< 13 UJ	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1254		11097-69-1	µg/kg	< 12 U	< 12 U	< 13 U	< 6.5 U	< 6.5 U	< 3.0 U	< 3.0 U	< 2.5 U	< 2.5 U	< 2.6 U
Aroclor 1260		11096-82-5	µg/kg	< 12 UJ	< 12 UJ	< 13 UJ	52 J	< 6.5 UJ	< 3.0 U	< 3.0 U	3.6 J	4.4	2.2 J
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 12 UJ	< 12 UJ	< 13 UJ	52	< 6.5 UJ	< 3 U	< 3 U	3.6	4.4	2.2
Pesticides													
2,4-DDD		53-19-0	µg/kg	1.63 J	4.76 J	5.03 J	7.28 J	< 0.028 UJ	< 0.026 UJ	< 0.027 UJ	8.52 J	5.65 J	1.84 J
2,4-DDE		3424-82-6	µg/kg	0.120 J	0.103 J	0.132 J	0.365	0.018 JN	< 0.019 U	< 0.019 U	0.272 J	0.124 J	0.0704 J
2,4-DDT		789-02-6	µg/kg	0.0386 J	0.055 JN	0.067 JN	0.24 JN	< 0.054 UJ	< 0.031 UJ	< 0.030 UJ	< 0.070 UJ	< 0.034 UJ	< 0.043 UJ
4,4'-DDD		72-54-8	µg/kg	4.12 J	12.8 J	12.2 J	8.52 J	< 0.049 UJ	< 0.035 UJ	< 0.033 UJ	21.8 J	11.6 J	5.07 J
4,4'-DDE		72-55-9	µg/kg	0.368 J	0.398 J	0.604 J	2.46	0.0476 J	0.0302 J	< 0.023 U	1.72	0.485 J	0.368 J
4,4'-DDT		50-29-3	µg/kg	0.0942 J	0.179 J	0.200 J	7.31 J	0.21 JN	< 0.082 UJ	< 0.078 UJ	< 0.14 UJ	< 0.062 UJ	< 0.081 UJ
DDx	(b)	T_DDx (PDI)	µg/kg	6.37	18.3	18.2	26.2	0.303	0.0712	< 0.078 UJ	32.4	17.9	7.39
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	710	330	450	1200	210	210	160	280 J	1700 J	2400
Acenaphthene		83-32-9	µg/kg	16000	21000	28000	5400	120	140	120	8800	12000	13000
Acenaphthylene		208-96-8	µg/kg	1500	1500	2600	490	290	160	140	1800 J	9300 J	2000
Anthracene		120-12-7	µg/kg	12000	13000	21000	2000	200	230	210	10000	14000	13000
Benz(a)anthracene		56-55-3	µg/kg	11000	12000	19000	1900	400	270	250	11000	11000	14000
Benzo(a)pyrene		50-32-8	µg/kg	14000	11000	20000	1700	480	230	220	12000	13000	15000
Benzo(b)fluoranthene		205-99-2	µg/kg	12000	11000	20000	1900	570	300	280	12000	13000	15000
Benzo(g,h,i)perylene		191-24-2	µg/kg	11000	8900	16000	1600	550	290	280	11000	12000	14000
Benzo(k)fluoranthene		207-08-9	µg/kg	4300	2900	5000	500	150	73	64	3000 J	18000 J	3800
Chrysene		218-01-9	µg/kg	13000	11000	19000	2300	540	350	310	12000	13000	14000
Dibenz(a,h)anthracene		53-70-3	µg/kg	1400	1100	2200	170	43	28	23	1300 J	9600 J	1700
Fluoranthene		206-44-0	µg/kg	36000	36000	54000	8800	1300	960	880	37000	40000	47000
Fluorene		86-73-7	µg/kg	8400	10000	17000	3900	190	190	160	5000 J	39000 J	7900
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	10000	9000	16000	1500	470	230	230	9200 J	51000 J	12000
Naphthalene		91-20-3	µg/kg	620	920	1400	2800	1100	750	580	420 J	3500 J	870
Phenanthrene		85-01-8	µg/kg	59000	130000	80000	17000	1200	1200	1000	39000	52000	74000
Pyrene		129-00-0	µg/kg	44000	45000	66000	11000	1600	1200	1100	46000	51000	58000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	250000	320000	390000	64000	9400	6800	6000	220000	360000	310000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	19000	15000	28000	2400	670	340	320	17000	30000	21000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S083	SC-S083	SC-S083	SC-S085	SC-S085	SC-S085	SC-S085	SC-S086	SC-S086	SC-S086
		Sample ID	PDI-SC-S083-1.6TO3.5	PDI-SC-S083-3.5TO5	PDI-SC-S083-5TO6.6	PDI-SC-S085-0TO2	PDI-SC-S085-2TO4	PDI-SC-S085-4TO6.4	PDI-SC-S085-4TO6.4D	PDI-SC-S086-0TO2	PDI-SC-S086-0TO2D	PDI-SC-S086-2TO3.3
		Sample Date	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/2/2018	8/2/2018	8/2/2018
		Sample Type Code	N	N	N	N	N	N	FD	N	FD	N
		Depth	1.6-3.5 ft	3.5-5 ft	5-6.6 ft	0-2 ft	2-4 ft	4-6.4 ft	4- ft	0-2 ft	0- ft	2-3.3 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	81.1	79.9	79.1	58.0	61.2	63.2	63.3	78.4	80.3	76.7
Total Solids@70C	TSOLID70	%	83	83	81	60	64	66	65	82	78	83
Total Solids (%)	%SOLID	%	80.8	78.8	75.7	58.6	61	63.2	64.2	70	75.6	78.8
Clay	GS-Clay	%	1.7	1.7	3.4	11.2	13.9	12.9		0		0
Gravel	GS-Gravel	%	0.2	0.8	0.8	0.8	0.2	0		7.5		4.6
Sand, Coarse	GS-Csand	%	0.9	1.0	0.2	0.2	0.2	0.2		1.5		0.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	58.34	56.89	64.1	37.35	36.32	40.7		55.3		72.06
Sand, Fine (#230) (d)	GS-Fsand	%	58.5	57.1	64.3	43.0	42.5	44.8		55.5		72.2
Sand, Medium	GS-Msand	%	34.5	33.0	25.2	2.1	1.3	0.2		26.9		15.9
Silt (#200) (d)	GS-Silt-200	%	4.456	6.707	6.297	48.34	47.87	45.89		8.792		7.038
Silt (#230) (d)	GS-Silt	%	4.3	6.5	6.1	42.7	41.7	41.8		8.6		6.9
Percent Fines (e)	GS-FINES	%	6.156	8.407	9.697	59.54	61.77	58.79		8.792		7.038
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	3100	4300	7800	48000	34000	32000	23000	12000 J	6700 J	3600

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S088	SC-S088	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S095
			Sample ID	PDI-SC-S088-0TO2	PDI-SC-S088-2TO3.3	PDI-SC-S092-0TO2	PDI-SC-S092-2TO4	PDI-SC-S092-4TO6	PDI-SC-S092-4TO6D	PDI-SC-S092-6TO8	PDI-SC-S092-8TO9.9	PDI-SC-S092-9.9TO10.9	PDI-SC-S095-0TO2
			Sample Date	8/1/2018	8/1/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018
			Sample Type Code	N	N	N	N	N	FD	N	N	N	N
			Depth	0-2 ft	2-3.3 ft	0-2 ft	2-4 ft	4-6 ft	4- ft	6-8 ft	8-9.9 ft	9.9-10.9 ft	0-2 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.46	0.099	0.29	0.56 J	0.10 J	0.041 J	0.0025 J	0.0017 J	0.0018 J	0.76
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	1.2	0.53	0.097	0.21 J	0.017	0.014	0.00076 JN	0.0010 J	0.0018 J	0.078
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.014	0.0041	0.0073	0.013 J	0.0015 J+	0.0014 J+	0.00089 J+	0.00094 J+	0.0013 J+	0.011
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.0032 J	0.0011 J	0.0022 J	0.0024 J	0.00046 JN	0.00042 J+	< 0.00011 U	< 0.00013 U	0.00018 J+	0.0013 J
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.027	0.0063	0.031	0.068	0.0067	0.0038	< 0.00018 U	0.00088 J	0.0028 J	0.062
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.024	0.0074	0.012	0.017	0.0033 J	0.0016 J	< 0.00012 U	< 0.00012 U	0.00017 JN	0.011
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.043	0.018	0.0097	0.031	0.0025 J	0.0017 J	< 0.00017 U	0.00040 J+	0.0010 J	0.016
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0082	0.0029 J	0.0044	0.0070	0.0015 J	0.00098 J	< 0.00011 U	0.00031 J	0.00018 J	0.0033 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.0014 U	< 0.00092 U	0.0018 J+	0.0036 J+	0.0015 J+	0.0021 J+	0.0026 J+	0.0021 J+	0.0027 J+	0.0013 J
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.0030 J	0.0012 J	0.00097 J	0.0017 JN	< 0.00015 U	< 0.00017 U	< 0.00017 U	< 0.00018 U	< 0.000074 U	< 0.00096 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.025	0.0013 J	0.0067	0.027	0.0025 J	0.0016 J	0.00051 J+	0.00048 JN	0.0011 J+	0.055
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.0097	0.0055	0.0023 J	0.0062	0.00067 J	0.00062 J	< 0.00016 U	< 0.00013 U	0.00025 J	0.0043 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0080	0.0022 J	0.0056	0.011	0.0011 J	0.00083 J	< 0.00011 U	< 0.00012 U	0.00045 J	0.028
2,3,7,8-TCDD		1746-01-6	µg/kg	0.0016	0.00029 J	0.00034 JN	0.0011	< 0.00011 U	< 0.00011 U	< 0.000094 U	< 0.00012 U	< 0.000069 U	0.00078 J
2,3,7,8-TCDF		51207-31-9	µg/kg	0.0064	0.0021 J+	0.0032	0.0084	0.00077 JN	0.00087	0.00043 J	0.00070 J	0.00044 J	0.040 J
OCDD		3268-87-9	µg/kg	4.5 J	1.3	3.1 J	5.2 J	0.72 J	0.39 J	0.024	0.014	0.017	5.2 J
OCDF		39001-02-0	µg/kg	0.74	0.18	0.21	0.37	0.029	0.034	< 0.0016 U	0.0023 J	0.0039 J	0.23
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.038	0.013	0.015	0.031	0.0036	0.0023	0.00045	0.00058	0.001	0.035
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.038	0.013	0.015	0.03	0.0036	0.0023	0.00044	0.00057	0.001	0.035
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.038	0.013	0.014	0.029	0.0035	0.0022	0.00036	0.00048	0.00098	0.035
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 3.8 UJ	< 3.2 UJ	< 30 UJ	< 35 UJ	< 31 UJ	< 31 UJ	< 3.2 UJ	< 3.1 UJ	< 3.0 UJ	< 3.6 U
Aroclor 1221		11104-28-2	µg/kg	< 3.8 UJ	< 3.2 UJ	< 30 UJ	< 35 UJ	< 31 UJ	< 31 UJ	< 3.2 U	< 3.1 U	< 3.0 UJ	< 3.6 U
Aroclor 1232		11141-16-5	µg/kg	< 3.8 UJ	< 3.2 UJ	< 30 UJ	< 35 UJ	< 31 UJ	< 31 UJ	< 3.2 UJ	< 3.1 UJ	< 3.0 UJ	< 3.6 U
Aroclor 1242		53469-21-9	µg/kg	< 3.8 U	< 3.2 U	< 30 U	< 35 U	< 31 U	< 31 U	< 3.2 U	< 3.1 U	< 3.0 UJ	< 3.6 U
Aroclor 1248		12672-29-6	µg/kg	< 3.8 UJ	< 3.2 UJ	10 J	< 35 U	< 31 U	< 31 U	< 3.2 U	< 3.1 U	< 3.0 UJ	< 3.6 U
Aroclor 1254		11097-69-1	µg/kg	< 3.8 U	< 3.2 U	< 30 U	< 35 U	< 31 U	< 31 U	< 3.2 U	< 3.1 U	< 3.0 UJ	< 3.6 U
Aroclor 1260		11096-82-5	µg/kg	< 3.8 U	24 J	27 J	220 J	< 31 U	< 31 U	< 3.2 U	< 3.1 UJ	< 3.0 UJ	36 J
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 3.8 UJ	24	37	220	< 31 UJ	< 31 UJ	< 3.2 UJ	< 3.1 UJ	< 3 UJ	36
Pesticides													
2,4-DDD		53-19-0	µg/kg	45.4	0.864 J	6.68	140	28.6	35.0	6.82	< 0.097 U	< 0.67 U	163
2,4-DDE		3424-82-6	µg/kg	5.56	0.0551 J	< 0.40 U	7.92 J	0.600 J	0.650 J	< 0.11 U	< 0.077 U	< 0.51 U	14.9
2,4-DDT		789-02-6	µg/kg	2.70	0.061 JN	< 0.21 U	29.2	< 0.10 UJ	8.12 J	< 0.15 U	< 0.13 U	< 0.24 U	2.94 J
4,4'-DDD		72-54-8	µg/kg	96.3	1.93	23.6	320	42.0	59.0	6.89	< 0.13 U	< 0.24 U	232
4,4'-DDE		72-55-9	µg/kg	33.0	0.230 J	4.90	44.6	2.35	2.86	< 0.14 U	< 0.099 U	< 0.65 U	40.5
4,4'-DDT		50-29-3	µg/kg	875	0.885 J	6.09	3050	44.3 J	6.09 J	3.01	< 0.25 U	< 0.71 U	16
DDx	(b)	T_DDx (PDI)	µg/kg	1060	4.03	41.5	3590	118	112	16.8	< 0.25 U	< 0.71 U	469
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	3200	420	1500	3300	740	660	210	170	85	2200
Acenaphthene		83-32-9	µg/kg	19000	610	2700	6700	1500	1100	260	140	58	21000
Acenaphthylene		208-96-8	µg/kg	750	250	210	560	350	400	260	290	97	1400
Anthracene		120-12-7	µg/kg	9000 J	680 J	1400	3600	710	840	280	160	100	22000
Benz(a)anthracene		56-55-3	µg/kg	8200	910	1300	4500	540	670	340	150	94	25000
Benzo(a)pyrene		50-32-8	µg/kg	9700	1000	1200	4000	510	650	480	180	85	31000
Benzo(b)fluoranthene		205-99-2	µg/kg	9400	1000	1200	3800	560	640	520	190	88	31000 J
Benzo(g,h,i)perylene		191-24-2	µg/kg	7800	880	980	3800	530	710	440	160	43	25000
Benzo(k)fluoranthene		207-08-9	µg/kg	3300	370	500	1200	180	270	120	81	25	10000
Chrysene		218-01-9	µg/kg	9300	1200	1600	4800	670	790	540	240	110	30000
Dibenz(a,h)anthracene		53-70-3	µg/kg	790	83	160	680	110	63	42	19	< 7.1 U	2600
Fluoranthene		206-44-0	µg/kg	31000	3800	4700	14000	2400	3200	1400	770	250	93000
Fluorene		86-73-7	µg/kg	7600	560	2300	3800	760	620	220	140	87	16000
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	7700	820	930	3000	460	510	450	170	51	25000
Naphthalene		91-20-3	µg/kg	9700	2300	2500	11000	3500	3200	1000	880	220	5600
Phenanthrene		85-01-8	µg/kg	43000	3700	11000	21000	3900	5100	1500	790	330	120000
Pyrene		129-00-0	µg/kg	44000	5400	5300	17000	2800	3800	1700	850	280	120000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	220000	24000	39000	110000	20000	23000	9800	5400	2000	580000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	13000	1400	1700	5800	780	900	650	250	110	42000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S088	SC-S088	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S092	SC-S095
		Sample ID	PDI-SC-S088-0TO2	PDI-SC-S088-2TO3.3	PDI-SC-S092-0TO2	PDI-SC-S092-2TO4	PDI-SC-S092-4TO6	PDI-SC-S092-4TO6D	PDI-SC-S092-6TO8	PDI-SC-S092-8TO9.9	PDI-SC-S092-9.9TO10.9	PDI-SC-S095-0TO2
		Sample Date	8/1/2018	8/1/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018
		Sample Type Code	N	N	N	N	N	FD	N	N	N	N
		Depth	0-2 ft	2-3.3 ft	0-2 ft	2-4 ft	4-6 ft	4- ft	6-8 ft	8-9.9 ft	9.9-10.9 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	52.6	60.9	64.3	56.4	63.3	63.8	60.9	63.9	65.7	54.8
Total Solids@70C	TSOLID70	%	56	60	69	61	65	68	62	63	68	57
Total Solids (%)	%SOLID	%	51.6	61	61	54.8	62.5	62	62	63	68.3	54.7
Clay	GS-Clay	%	21.2 L	10.7	5.3	14.5	11.5		9.4	10.0	8.5	12.8
Gravel	GS-Gravel	%	1.5	0	0.3	0.3	0		0	0	0	0
Sand, Coarse	GS-Csand	%	0.2	0.7	0.3	0.4	0.1		0	0.1	0	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	24.5	57.2	61.56	24.4	32.53		36.74	33.44	39.25	19.12
Sand, Fine (#230) (d)	GS-Fsand	%	24.5	57.2	68.6	29.1	38.4		42.5	41.2	45.6	22.4
Sand, Medium	GS-Msand	%	1.2	2.3	1.2	0.9	0.3		0.4	0.6	0.1	0.6
Silt (#200) (d)	GS-Silt-200	%	51.4	29.2	31.33	59.49	55.56		53.45	55.85	52.14	67.27
Silt (#230) (d)	GS-Silt	%	51.4	29.2	24.3	54.8	49.7		47.7	48.1	45.8	64.0
Percent Fines (e)	GS-FINES	%	72.6	39.9	36.63	73.99	67.06		62.85	65.85	60.64	80.07
Liquid Limit	GS-LL	None				60						
Plasticity Index	GS-PI	None				23						
Plasticity Limit	GS-PL	None				37						
Total Organic Carbon	TOC	mg/kg	57000	35000	33000	110000	50000	48000	52000	48000	24000	59000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S095	SC-S095	SC-S095	SC-S098	SC-S098	SC-S098	SC-S098	SC-S098	SC-S098
		Sample ID	PDI-SC-S095-0TO2D	PDI-SC-S095-2TO4	PDI-SC-S095-4TO6	PDI-SC-S098-0TO1.3	PDI-SC-S098-1.3TO3.3	PDI-SC-S098-3.3TO5.3	PDI-SC-S098-3.3TO5.3D	PDI-SC-S098-5.3TO7.2	PDI-SC-S098-7.2TO8.2
		Sample Date	7/24/2018	7/24/2018	7/24/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018
		Sample Type Code	FD	N	N	N	N	N	FD	N	N
		Depth	0- ft	2-4 ft	4-6 ft	0-1.3 ft	1.3-3.3 ft	3.3-5.3 ft	3.3- ft	5.3-7.2 ft	7.2-8.2 ft
Chemical	**CAS_RN**	**Units**									
Dioxins and Furans											
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.63	0.29	0.0087	0.078	0.043	0.0020 J	0.0013 J	0.00067 J	0.0017 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.085	0.37	0.0054	0.018	0.020	< 0.00016 U	< 0.000083 U	< 0.000046 U	0.000093 J+
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.015	0.0028 J	0.00051 J+	0.0029 J	0.0062	< 0.00017 U	< 0.000088 U	< 0.000091 U	< 0.00010 U
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.0011 J	0.00094 J	0.00034 J+	0.00099 J	0.00053 J+	< 0.00011 U	< 0.00011 U	< 0.00011 U	0.00015 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.069	0.0065	0.0012 J	0.0082	0.038	< 0.000051 U	< 0.000039 U	< 0.000025 U	< 0.000022 U
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0098	0.011	0.00084 J	0.0041 J	0.0016 J	0.000077 JN	< 0.000036 U	0.000048 JN	0.00011 J+
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.017	0.011	0.0012 J	0.0035 J	0.0089	< 0.000050 U	< 0.000038 U	< 0.000024 U	< 0.000021 U
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0031 J	0.0034 J	0.00064 J+	0.0017 J	0.0011 J	0.00023 J	0.00014 JN	0.00011 J+	0.00022 J+
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.00096 JN	< 0.00081 U	0.00019 J	< 0.00017 U	0.00054 J+	< 0.00018 U	< 0.00013 U	< 0.00018 U	< 0.00012 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00080 J	0.0012 J	0.00051 J	0.00058 J	0.00024 J	< 0.000028 U	< 0.000026 U	0.000038 JN	< 0.000021 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.051	< 0.00091 U	< 0.00023 U	0.0064	0.017	< 0.000020 U	< 0.000018 U	< 0.000018 U	0.000040 JN
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0041 J	0.0049	0.00060 JN	0.00060 JN	0.0012 J	< 0.000042 U	< 0.000033 U	< 0.000021 U	< 0.000019 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.026	0.0032 J	0.00075 J	0.0024 J	0.0063	< 0.000020 U	< 0.000019 U	< 0.000019 U	< 0.000015 U
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00041 JN	0.00031 JN	0.00020 JN	0.00020 JN	0.00016 JN	< 0.000021 U	< 0.000023 U	< 0.000016 U	< 0.000016 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.051	< 0.0023 UJ	0.00041 JN	0.0061	0.010	< 0.000012 U	< 0.000025 U	< 0.000030 U	< 0.000026 U
OCDD	3268-87-9	µg/kg	4.5 J	3.3	0.15	0.76	0.62	0.036 J	0.019 J	0.0099	0.018
OCDF	39001-02-0	µg/kg	0.24	0.23	0.0043 J+	0.047	0.054	0.00059 JN	0.00043 J+	0.00031 J+	0.00029 J+
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.035	0.014	0.0017	0.0055	0.0099	0.000076	0.000046	0.000073	0.000083
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.035	0.014	0.0015	0.0053	0.0098	0.000068	0.000032	0.00004	0.000082
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.034	0.014	0.0014	0.0052	0.0097	0.000054	0.000019	0.000021	0.000071
Polychlorinated Biphenyls (PCBs)											
Aroclor 1016	12674-11-2	µg/kg	< 6.8 U	< 6.7 U	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1221	11104-28-2	µg/kg	< 6.8 UJ	< 6.7 UJ	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1232	11141-16-5	µg/kg	< 6.8 U	< 6.7 U	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1242	53469-21-9	µg/kg	< 6.8 U	< 6.7 U	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1248	12672-29-6	µg/kg	< 6.8 UJ	< 6.7 UJ	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1254	11097-69-1	µg/kg	< 6.8 U	< 6.7 U	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Aroclor 1260	11096-82-5	µg/kg	34	12	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	34	12	< 3.3 U	< 3.6 U	< 2.4 U	< 2.6 U	< 2.6 U	< 2.7 U	< 2.7 U
Pesticides											
2,4-DDD	53-19-0	µg/kg	145	0.224 J	0.0416 J	2.90 J	1.13 J	< 0.017 UJ	< 0.014 UJ	< 0.0631 UJ	< 0.0458 UJ
2,4-DDE	3424-82-6	µg/kg	11.5	0.0712 J	0.0122 J	0.418 J	0.204 J	< 0.0095 U	< 0.0075 U	< 0.0276 U	< 0.011 U
2,4-DDT	789-02-6	µg/kg	1.17 J	0.139 J	0.0211 J	0.251 J	< 0.021 UJ	< 0.031 UJ	< 0.025 UJ	0.077 JN	< 0.033 UJ
4,4'-DDD	72-54-8	µg/kg	185	0.429 J	0.0585 J	8.65 J	2.49 J	< 0.031 UJ	< 0.0424 UJ	< 0.0783 UJ	< 0.0597 UJ
4,4'-DDE	72-55-9	µg/kg	30.4	0.416 J	0.0277 J	4.74	0.650 J	< 0.026 U	< 0.0263 U	< 0.046 U	< 0.022 U
4,4'-DDT	50-29-3	µg/kg	9.45	0.264 J	0.0666 J	0.649 J	< 0.112 UJ	< 0.096 UJ	< 0.130 UJ	< 0.274 UJ	< 0.14 UJ
DDx (b)	T_DDx (PDI)	µg/kg	383	1.54	0.228	17.6	4.53	< 0.096 UJ	< 0.13 UJ	0.214	< 0.14 UJ
Semivolatile Organics											
2-Methylnaphthalene	91-57-6	µg/kg	2500	2700	620	290	45	3.9	4.5	< 1.3 U	< 1.3 U
Acenaphthene	83-32-9	µg/kg	21000	14000	5400	2000	980	260	230	15	27
Acenaphthylene	208-96-8	µg/kg	1400	1300	910	230	49	1.8	1.5	0.57 J	0.69 J
Anthracene	120-12-7	µg/kg	25000	13000	5800	2100	760	3.3	2.8	0.25 J	0.45 J
Benz(a)anthracene	56-55-3	µg/kg	26000	23000	11000	8000	2700	2.4	1.6	< 1.3 U	< 1.3 U
Benzo(a)pyrene	50-32-8	µg/kg	32000	24000	16000	8200	2900	2.3	< 1.2 U	< 1.3 U	< 1.3 U
Benzo(b)fluoranthene	205-99-2	µg/kg	29000 J	22000	16000 J	9500	3300	2.8	1.6	< 1.3 U	< 1.3 U
Benzo(g,h,i)perylene	191-24-2	µg/kg	27000	27000	16000	6100	2200	3.0	1.2	< 1.3 U	< 1.3 U
Benzo(k)fluoranthene	207-08-9	µg/kg	10000	8200	4100	3300	1100	< 1.1 U	< 1.2 U	< 1.3 U	< 1.3 U
Chrysene	218-01-9	µg/kg	32000	23000	13000	7800	2300	2.8	2.3	< 1.3 U	< 1.3 U
Dibenz(a,h)anthracene	53-70-3	µg/kg	2300	1900	1300	1300	360	< 1.1 U	< 1.2 U	< 1.3 U	< 1.3 U
Fluoranthene	206-44-0	µg/kg	98000	73000	41000	16000	6500	8.0	5.5	< 1.3 U	3.2
Fluorene	86-73-7	µg/kg	16000	12000	3800	960	470	30	26	0.32 J	0.93 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	26000	23000	14000	7100	2500	2.4	1.3	< 1.3 U	< 1.3 U
Naphthalene	91-20-3	µg/kg	6100	8200	3900	700	150	2.2	2.7	< 1.3 U	< 1.3 U
Phenanthrene	85-01-8	µg/kg	130000	93000	37000	9200	4600	68	66	< 1.3 U	4.5
Pyrene	129-00-0	µg/kg	130000	100000	52000	17000	7000	8.8	5.3	< 1.3 U	3.4
Total PAHs (b)	T_PAH (PDI)	µg/kg	610000	470000	240000	100000	38000	400	350	18	41
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	43000	33000	21000	12000	4100	3.6	1.1	< 1.3 U	< 1.3 U

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S095	SC-S095	SC-S095	SC-S098	SC-S098	SC-S098	SC-S098	SC-S098	SC-S098
		Sample ID	PDI-SC-S095-0TO2D	PDI-SC-S095-2TO4	PDI-SC-S095-4TO6	PDI-SC-S098-0TO1.3	PDI-SC-S098-1.3TO3.3	PDI-SC-S098-3.3TO5.3	PDI-SC-S098-3.3TO5.3D	PDI-SC-S098-5.3TO7.2	PDI-SC-S098-7.2TO8.2
		Sample Date	7/24/2018	7/24/2018	7/24/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018
		Sample Type Code	FD	N	N	N	N	N	FD	N	N
		Depth	0- ft	2-4 ft	4-6 ft	0-1.3 ft	1.3-3.3 ft	3.3-5.3 ft	3.3- ft	5.3-7.2 ft	7.2-8.2 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	55.7	58.2	60.2	54.9	81.6	76.0	75.2	72.3	72.9
Total Solids@70C	TSOLID70	%	57	57	63	54	79	76	76	73	73
Total Solids (%)	%SOLID	%	56.4	57	59.7	53.5	80.7	77.2	75.6	71.7	71.7
Clay	GS-Clay	%		12.6	7.6	11.0	1.9	0		0	1.9
Gravel	GS-Gravel	%		0	0.3	0	0	0		0	0
Sand, Coarse	GS-Csand	%		0.2	0.1	0	0.2	3.0		0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%		28.53	34.33	34.09	84.93	77.16		16.84	77.59
Sand, Fine (#230) (d)	GS-Fsand	%		33.3	39.9	37.5	85.3	77.4		17.0	77.9
Sand, Medium	GS-Msand	%		0.6	0.6	2.0	8.0	13.9		81.6	16.0
Silt (#200) (d)	GS-Silt-200	%		57.96	57.16	52.90	4.966	5.839		1.659	4.406
Silt (#230) (d)	GS-Silt	%		53.2	51.6	49.5	4.6	5.6		1.5	4.1
Percent Fines (e)	GS-FINES	%		70.56	64.76	63.9	6.866	5.839		1.659	6.306
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	37000	51000	34000	28000	3000	1900 J	2400	590 J	2100

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S105	SC-S105	SC-S105
			Sample ID	PDI-SC-S103-0TO2	PDI-SC-S103-10.7TO13.4	PDI-SC-S103-2TO4	PDI-SC-S103-4TO6	PDI-SC-S103-6TO8	PDI-SC-S103-8TO9.7	PDI-SC-S103-9.7TO10.7	PDI-SC-S105-0TO2	PDI-SC-S105-2TO4	PDI-SC-S105-4TO5.6
			Sample Date	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/8/2018	8/8/2018	8/8/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	0-2 ft	10.7-13.4 ft	2-4 ft	4-6 ft	6-8 ft	8-9.7 ft	9.7-10.7 ft	0-2 ft	2-4 ft	4-5.6 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.18	0.0015 J	0.17	0.13	0.17	0.037	0.0039	0.13	0.0099	0.021
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.039	0.00022 JN	0.062	0.031	0.042	0.015	0.00070 JN	0.021	0.0017 J	0.0051
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0066	< 0.00029 U	0.015	0.0091	0.0084	0.0031 J	0.00051 J+	0.0041	0.00047 J+	0.00070 J+
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0013 JN	0.00013 J	0.0018 J	0.0016 J	0.0019 J	0.00034 J	0.00012 JN	0.00062 J	0.00019 J+	0.00042 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.032	0.00014 J	0.080	0.069	0.041	0.013	0.00059 J	0.018	0.0012 J	0.0019 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.011	0.00010 J	0.010	0.0080	0.011	0.0016 J	0.00024 J	0.0030 J	0.00037 J	0.0012 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0081	0.000062 J	0.021	0.017	0.011	0.0035	0.00021 J	0.0045	0.00034 J	0.00070 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0049 J	0.00016 J	0.0037 J	0.0046 J	0.0058	0.00097 J	0.00025 J	0.0012 J	0.00047 J	0.00099 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		0.00080 J+	< 0.00046 U	0.0016 J	0.0012 J	0.0014 J+	0.00096 J+	< 0.00058 U	0.00052 J+	< 0.00015 U	0.00027 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0011 J	0.000026 JN	0.0012 J	0.00099 JN	0.0014 J	0.00021 J	0.000068 J	0.00059 J	< 0.000022 U	< 0.00016 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.017	0.000094 J+	0.052	0.044	0.024	0.0075	0.00034 J	0.010	0.00070 J	0.0014 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0014 J	< 0.000017 U	0.0038 J	0.0031 J	0.0021 J	0.00060 J	< 0.000031 U	0.00098 J	< 0.000028 U	0.00039 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0063	0.000034 J	0.023	0.019	0.0093	0.0029 J	0.00014 J	0.0045	0.00033 J	0.00071 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00081 J	< 0.000027 U	0.00068 J	0.0013	0.00083 J	0.00015 JN	< 0.000048 U	0.00079	< 0.000013 U	< 0.00017 U
2,3,7,8-TCDF	51207-31-9	µg/kg		0.016	0.000045 J+	0.041	0.039	0.025	0.0064	0.00027 J	0.012	0.00074	0.0010
OCDD	3268-87-9	µg/kg		1.7	0.028	1.7	1.2	1.7	0.46	0.061	1.2	0.094	0.21
OCDF	39001-02-0	µg/kg		0.11	0.00077 J+	0.14	0.067	0.10	0.028	0.0023 J	0.047	0.0049 J	0.0078
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.015	0.00015	0.03	0.026	0.018	0.0049	0.00039	0.009	0.00061	0.0014
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.015	0.00012	0.03	0.025	0.018	0.0048	0.00037	0.009	0.00061	0.0014
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.015	0.0001	0.03	0.025	0.018	0.0047	0.00034	0.009	0.0006	0.0013
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1221	11104-28-2	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1232	11141-16-5	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1242	53469-21-9	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1248	12672-29-6	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1254	11097-69-1	µg/kg		< 4.0 U	< 2.6 U	< 3.7 U	< 3.8 U	< 3.7 UJ	< 2.9 UJ	< 2.7 UJ	< 3.1 U	< 2.7 U	< 2.8 U
Aroclor 1260	11096-82-5	µg/kg		12	< 2.6 U	< 3.7 U	< 3.8 U	6.6 J	4.2 J	< 2.7 UJ	2.8 J	< 2.7 U	< 2.8 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		12	< 2.6 U	< 3.7 U	< 3.8 U	6.6	4.2	< 2.7 UJ	2.8	< 2.7 U	< 2.8 U
Pesticides													
2,4-DDD	53-19-0	µg/kg		8.45 J	< 0.075 U	7.70	7.25	9.24	2.36	0.11 JN	5.86 J	0.842 J	1.34 J
2,4-DDE	3424-82-6	µg/kg		0.810 J	< 0.017 U	0.987 J	0.902 J	1.03 J	0.286 J	< 0.028 U	0.285 J	0.0855 J	0.0675 J
2,4-DDT	789-02-6	µg/kg		0.468 J	< 0.035 U	0.737 J	0.455 J	0.625 J	0.076 JN	< 0.026 U	0.380 J	< 0.11 UJ	0.11 JN
4,4'-DDD	72-54-8	µg/kg		24.5 J	0.136 J	25.1	30.5	27.3	8.68	0.206 J	15.3 J	2.34 J	3.05 J
4,4'-DDE	72-55-9	µg/kg		8.36	< 0.023 U	8.53	9.07	9.14	1.97	< 0.023 U	1.43 J	0.24 JN	0.258 J
4,4'-DDT	50-29-3	µg/kg		4.93 J	< 0.15 U	1.03 J	1.37 J	13.8	0.311 J	< 0.058 U	0.775 J	0.451 J	0.325 J
DDx (b)	T_DDx (PDI)	µg/kg		47.5	0.211	44.1	49.5	61.1	13.7	0.345	24	4.01	5.15
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		380	1.2	450	210	470	150	2.8 J	550	36	4300
Acenaphthene	83-32-9	µg/kg		870	14	3000	1300 J	1700	1600	83	5000	220	4300
Acenaphthylene	208-96-8	µg/kg		340	1.2	350	250	410	110	9.7 J	1100	150 J	200
Anthracene	120-12-7	µg/kg		1300	2.6	2900	960 J	1500	2000	16	7400	320 J	4600
Benz(a)anthracene	56-55-3	µg/kg		3400	7.6	8800	3700	6100	9400	57	8500	780 J	3900
Benzo(a)pyrene	50-32-8	µg/kg		3700	7.8	9400	4800	6300	9400	69	11000	720 J	6700
Benzo(b)fluoranthene	205-99-2	µg/kg		3900	9.6	11000	5500 J	6900	12000	75	11000	890 J	6400 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		3700	8.6	7800	4000	5900	6900	59	11000	770 J	6100
Benzo(k)fluoranthene	207-08-9	µg/kg		1500	2.8	4000	1700	2300	3700	23	2800	240 J	2100
Chrysene	218-01-9	µg/kg		3500	8.1	8100	4000	6100	8000	64	9100	970 J	4400
Dibenz(a,h)anthracene	53-70-3	µg/kg		560	< 1.2 U	1200	830 J	860	1500	10 J	1200	120 J	850
Fluoranthene	206-44-0	µg/kg		7500	18	20000	8100	13000	18000	140	32000	2000	18000
Fluorene	86-73-7	µg/kg		720	3.1	1500	700	1100	890	15	4500	310	3000
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		3300	7.6	8400	4200	5700	8100	60	10000	770 J	5300
Naphthalene	91-20-3	µg/kg		1100	2.3	1000	620	1200	410	7.5 J	3100	170 J	24000
Phenanthrene	85-01-8	µg/kg		5100	14	12000	5200	9100	9200	82	2900	260 J	22000
Pyrene	129-00-0	µg/kg		9200	21	22000	9500	16000	19000	150	41000	2800	23000
Total PAHs (b)	T_PAH (PDI)	µg/kg		50000	130	120000	56000	85000	110000	920	160000	12000	140000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		5300	11	13000	7000	9100	14000	98	15000	1100	9100

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S103	SC-S105	SC-S105	SC-S105
		Sample ID	PDI-SC-S103-0TO2	PDI-SC-S103-10.7TO13.4	PDI-SC-S103-2TO4	PDI-SC-S103-4TO6	PDI-SC-S103-6TO8	PDI-SC-S103-8TO9.7	PDI-SC-S103-9.7TO10.7	PDI-SC-S105-0TO2	PDI-SC-S105-2TO4	PDI-SC-S105-4TO5.6
		Sample Date	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/8/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	10.7-13.4 ft	2-4 ft	4-6 ft	6-8 ft	8-9.7 ft	9.7-10.7 ft	0-2 ft	2-4 ft	4-5.6 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	49.3	73.7	51.4	50.4	53.5	70.1	72.8	63.6	69.4	70.7
Total Solids@70C	TSOLID70	%	49	72	52	51	53	71	73	64	70	71
Total Solids (%)	%SOLID	%	48.9	73.7	53.9	50.5	53.5	68.4	72.3	64.6	69.9	70.4
Clay	GS-Clay	%	12.4	1.9	16.2	20.0	14.0	6.4	4.1	7.8	6.4	5.3
Gravel	GS-Gravel	%	0	0	0	0	0	0	0	0	0	0
Sand, Coarse	GS-Csand	%	0.3	0	0	0.1	0.2	0.6	0	0.1	0.1	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	25.61	88.65	22.68	19.66	27.78	73.87	77.81	35.56	38.88	44.09
Sand, Fine (#230) (d)	GS-Fsand	%	29.4	89.2	25.5	23.2	30.6	74.7	78.4	42.6	46.4	49.4
Sand, Medium	GS-Msand	%	1.4	3.1	1.0	0.7	1.2	2.8	5.5	0.3	0.2	0.1
Silt (#200) (d)	GS-Silt-200	%	60.38	6.245	60.11	59.53	56.81	16.32	12.68	56.13	54.51	50.40
Silt (#230) (d)	GS-Silt	%	56.6	5.7	57.3	56.0	54.0	15.5	12.1	49.1	47.0	45.1
Percent Fines (e)	GS-FINES	%	72.78	8.145	76.31	79.53	70.81	22.72	16.78	63.93	60.91	55.7
Liquid Limit	GS-LL	None										0
Plasticity Index	GS-PI	None										< 0 U
Plasticity Limit	GS-PL	None										0
Total Organic Carbon	TOC	mg/kg	34000	3000	35000	39000 J	33000	9700	4300	27000	15000 J	15000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S105	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S109
			Sample ID	PDI-SC-S105-5.6TO6.6	PDI-SC-S108-0TO1.9	PDI-SC-S108-1.9TO3	PDI-SC-S108-3TO4.7	PDI-SC-S108-4.7TO6.7	PDI-SC-S108-6.7TO8.8	PDI-SC-S108-6.7TO8.8D	PDI-SC-S108-8.8TO9.8	PDI-SC-S109-0TO2
			Sample Date	8/8/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/15/2018
			Sample Type Code	N	N	N	N	N	N	FD	N	N
			Depth	5.6-6.6 ft	0-1.9 ft	1.9-3 ft	3-4.7 ft	4.7-6.7 ft	6.7-8.8 ft	6.7- ft	8.8-9.8 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.48	0.48	0.72	0.60	0.50	0.0070	0.0064	0.0063	0.061 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.077	0.12	0.59	0.24	0.40	0.0047	0.0047	0.0039 J	0.013 J
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0071 J	0.0052	0.0096	0.010	0.014	0.00031 J+	0.00030 J+	< 0.00037 U	0.0015 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0028 J	0.0034 J	0.0054 J	0.0056 J	0.0034 J	0.00021 J+	0.00021 J+	0.00031 J+	0.00058 JN
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.036 J	0.0090	0.018	0.015	0.014	0.00047 J	0.00034 J	0.00027 JN	0.0051 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.012 J	0.030	0.038	0.035	0.020	0.00030 J	0.00027 J	0.00021 JN	0.0033 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.010 J	0.0063	0.010	0.016	0.026	0.00048 J	0.00039 J	0.00042 JN	0.0019 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0092 J	0.0099	0.010	0.012	0.0069	0.00024 J	0.00020 J	0.00026 JN	0.0023 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		0.00087 JN	0.00057 JN	< 0.0011 U	0.00085 J+	0.0010 JN	0.00037 J+	< 0.00032 U	< 0.00066 U	0.0011 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0017 JN	0.0019 J	0.0030 J	0.0033 J	0.0018 J	0.000069 J	0.000039 JN	< 0.000086 U	0.00055 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.017 J	0.0044 J	0.0068	0.0064	0.0057	0.00054 J	0.00020 J+	0.00017 JN	0.0031 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0034 J	0.0020 J	0.0027 J	0.0029 J	0.0023 J	0.00035 J	< 0.000046 U	< 0.000088 U	0.00061 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.010 J	0.0027 J	0.0044 J	0.0037 J	0.0029 J	0.00024 J+	< 0.00012 U	< 0.000082 U	0.0015 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.0012 J	0.00056 JN	0.0013	0.0011 J	0.00051 JN	< 0.000056 U	< 0.000019 U	< 0.000089 U	< 0.00021 U
2,3,7,8-TCDF	51207-31-9	µg/kg		0.016	0.0041	0.0063	0.0055	0.0032	< 0.00057 U	< 0.00044 U	< 0.00022 U	0.0035 J
OCDD	3268-87-9	µg/kg		5.4	4.2 J	7.0 J	6.0 J	5.6 J	0.084	0.078	0.075	0.56
OCDF	39001-02-0	µg/kg		0.17	0.24	0.58	0.51	0.95	0.011	0.012	0.010	0.031 J
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.023	0.017	0.03	0.025	0.022	0.00058	0.00035	0.00032	0.004
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.022	0.017	0.03	0.025	0.022	0.00058	0.00031	0.0002	0.0035
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.021	0.017	0.03	0.025	0.022	0.00055	0.00029	0.00016	0.0033
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg		< 3.2 U	< 3.7 U	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 U	< 2.7 U	< 2.6 U
Aroclor 1221	11104-28-2	µg/kg		< 3.2 U	< 3.7 U	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 U	< 2.7 U	< 2.6 U
Aroclor 1232	11141-16-5	µg/kg		< 3.2 U	< 3.7 U	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 UJ	< 2.7 U	< 2.6 U
Aroclor 1242	53469-21-9	µg/kg		< 3.2 U	< 3.7 UJ	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 U	< 2.7 UJ	< 2.6 U
Aroclor 1248	12672-29-6	µg/kg		< 3.2 U	< 3.7 UJ	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 U	< 2.7 UJ	< 2.6 U
Aroclor 1254	11097-69-1	µg/kg		< 3.2 U	< 3.7 UJ	< 4.4 UJ	< 4.6 UJ	< 4.0 UJ	< 2.8 UJ	< 2.8 U	< 2.7 UJ	< 2.6 UJ
Aroclor 1260	11096-82-5	µg/kg		< 3.2 U	66 J	42 J	19 J	4.7 J	< 2.8 UJ	< 2.8 U	< 2.7 UJ	2.7 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		< 3.2 U	66	42	19	4.7	< 2.8 UJ	< 2.8 UJ	< 2.7 UJ	2.7
Pesticides												
2,4-DDD	53-19-0	µg/kg		30.1 J	1.58 J	4.95	10.3	19.7	0.71 JN	0.408 J	0.311 J	2.27
2,4-DDE	3424-82-6	µg/kg		1.11 J	0.254 J	0.687 J	0.466 J	1.08 J	< 0.18 UJ	< 0.021 UJ	< 0.030 U	0.149 J
2,4-DDT	789-02-6	µg/kg		0.52 JN	1.74 J	1.67 J	0.74 JN	2.1 JN	< 0.14 UJ	< 0.031 UJ	< 0.051 UJ	0.265 J
4,4'-DDD	72-54-8	µg/kg		71.4 J	4.80	13.5	31.8	36.0	1.39 J	0.818 J	0.606 J	4.96
4,4'-DDE	72-55-9	µg/kg		7.53	2.14 J	4.54 J	5.46	4.13 J	< 0.24 UJ	0.151 J	0.135 J	1.04 J
4,4'-DDT	50-29-3	µg/kg		1.28 J	71.8 J	27.5 J	13.9 J	9.23 J	1.34 J	0.204 J	0.426 J	< 0.248 U
DDx (b)	T_DDx (PDI)	µg/kg		112	82.3	52.8	62.7	72.2	3.56	1.6	1.5	8.81
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg		47000	230	640	790	910	24	22	22	3000
Acenaphthene	83-32-9	µg/kg		57000	230	630	770	680	15	15	15	25000
Acenaphthylene	208-96-8	µg/kg		3600	50	93 J	210	370	5.8 J	6.3 J	11	1900
Anthracene	120-12-7	µg/kg		60000	180	380	450	530	10	13	15	14000
Benz(a)anthracene	56-55-3	µg/kg		50000	350	620	610	490	15	12	16	12000
Benzo(a)pyrene	50-32-8	µg/kg		62000	290	470	640	540	16	11	18	15000
Benzo(b)fluoranthene	205-99-2	µg/kg		61000 J	410	650	720	670	18	13	20	14000
Benzo(g,h,i)perylene	191-24-2	µg/kg		58000	230	370	500	510	16	12	16	10000
Benzo(k)fluoranthene	207-08-9	µg/kg		16000	130	200	230	150	5.2 J	3.8 J	5.8 J	4600
Chrysene	218-01-9	µg/kg		56000	420	760	780	700	17	16	20	14000
Dibenz(a,h)anthracene	53-70-3	µg/kg		7600	56	81 J	76	57	< 6.9 U	< 7.0 U	< 6.9 U	1400
Fluoranthene	206-44-0	µg/kg		210000	1000	1800	1900	2000	38	51	55	49000
Fluorene	86-73-7	µg/kg		31000	190	460	520	590	13	14	15	14000
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		55000	300	420	550	480	16	12	17	12000
Naphthalene	91-20-3	µg/kg		540000	580	1600	2300	3100	59	64	74	18000
Phenanthrene	85-01-8	µg/kg		290000	840	1800	2300	3000	54	67	86	78000
Pyrene	129-00-0	µg/kg		260000	1000	1900	2300	2800	54	67	68	58000
Total PAHs (b)	T_PAH (PDI)	µg/kg		1900000	6500	13000	16000	18000	380	400	480	340000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		86000	450	720	910	760	24	18	27	20000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S105	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S108	SC-S109
		Sample ID	PDI-SC-S105-5.6TO6.6	PDI-SC-S108-0TO1.9	PDI-SC-S108-1.9TO3	PDI-SC-S108-3TO4.7	PDI-SC-S108-4.7TO6.7	PDI-SC-S108-6.7TO8.8	PDI-SC-S108-6.7TO8.8D	PDI-SC-S108-8.8TO9.8	PDI-SC-S109-0TO2
		Sample Date	8/8/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/15/2018
		Sample Type Code	N	N	N	N	N	N	FD	N	N
		Depth	5.6-6.6 ft	0-1.9 ft	1.9-3 ft	3-4.7 ft	4.7-6.7 ft	6.7-8.8 ft	6.7- ft	8.8-9.8 ft	0-2 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	61.0	53.1	44.6	42.3	49.2	68.7	70.4	70.0	75.6
Total Solids@70C	TSOLID70	%	62	55	44	41	50	70	70	71	76
Total Solids (%)	%SOLID	%	61.9	59.7	43.7	40.8	49.2	67.9	67.9	70.9	78
Clay	GS-Clay	%	8.5	4.7	7.3	6.4	5.3	7.7		8.6	2.6
Gravel	GS-Gravel	%	0	0	3.2	14.8	2.3	0		0	1.1
Sand, Coarse	GS-Csand	%	1.4	2.2	2.1	3.8	2.5	0.2		0	0.9
Sand, Fine (#200) (d)	GS-Fsand-200	%	36.89	56.29	40.75	28.59	53.17	49.25		42.03	53.26
Sand, Fine (#230) (d)	GS-Fsand	%	43.1	63.1	48.4	36.1	59.0	52.8		48.0	54.7
Sand, Medium	GS-Msand	%	2.0	2.0	3.3	5.8	4.8	0.5		0.2	22.6
Silt (#200) (d)	GS-Silt-200	%	51.10	34.80	43.34	40.50	31.82	42.34		49.16	19.53
Silt (#230) (d)	GS-Silt	%	44.9	28.0	35.7	33.0	26.0	38.8		43.2	18.1
Percent Fines (e)	GS-FINES	%	59.6	39.5	50.64	46.9	37.12	50.04		57.76	22.13
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	120000	76000	210000	390000	190000	15000	15000	16000	20000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S109	SC-S109	SC-S109	SC-S109	SC-S109	SC-S112	SC-S112	SC-S112	SC-S113	SC-S113
		Sample ID	PDI-SC-S109-10TO11.3	PDI-SC-S109-2TO4	PDI-SC-S109-4TO6	PDI-SC-S109-6TO8	PDI-SC-S109-8TO10	PDI-SC-S112-0TO2	PDI-SC-S112-2TO4	PDI-SC-S112-4TO6	PDI-SC-S113(A)-0TO2.2	PDI-SC-S113(A)-2.2TO4.6
		Sample Date	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	9/5/2018	9/5/2018	9/5/2018	8/15/2018	8/15/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	10-11.3 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2.2 ft	2.2-4.6 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.068 J	0.014	0.0059 J	0.014	0.093	0.87	1.1	0.98	0.15	0.016
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.032 J	0.0023 J	0.0025 J	0.0036	0.21	0.20	0.21	0.42	0.063	0.0032
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.043 J	0.00027 J+	< 0.00024 U	< 0.00081 U	0.0023 J+	0.0099	0.013	0.012	0.019	0.0010 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	< 0.0012 UJ	0.00026 JN	< 0.00010 U	< 0.00016 U	0.00045 J+	0.0052 J	0.012	0.0055	0.00097 J	0.00018 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.0018 J	0.00096 J	0.00095 JN	0.00092 J	0.0032 J	0.065	0.060	0.041	0.11	0.0040
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	< 0.0012 UJ	0.00085 JN	0.00066 J	0.00068 J	0.0042	0.048	0.060	0.048	0.0042	0.00043 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.0022 J	0.00033 J	0.00033 JN	0.00030 J+	0.0037	0.022	0.021	0.020	0.026	0.0011 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0056 JN	0.00066 J	0.00053 JN	0.00028 JN	0.0015 J	0.013	0.018	0.013	0.0028 J	0.00027 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0064 J	0.00016 JN	< 0.000079 U	< 0.00062 U	0.0011 J+	0.0033 J+	0.0029 J+	0.0030 J+	0.0034	0.00063 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	< 0.00051 U	0.00016 J	< 0.00016 U	0.000055 JN	0.00053 J	0.0028 J	0.0038 J	0.0027 J	0.00076 J	0.00010 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	< 0.00041 U	0.00072 J	< 0.00013 U	0.00047 J+	0.00040 JN	0.13	0.019	0.012	0.038	0.0019 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	< 0.0013 UJ	0.000084 JN	0.00013 JN	0.00011 J+	0.0024 J	0.0069	0.0044 J	0.0038 J	0.0036	0.00022 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	< 0.00053 U	0.00037 J	< 0.00015 U	0.00022 J+	0.0011 J	0.094	0.0068	0.0067	0.013	0.00085 J
2,3,7,8-TCDD	1746-01-6	µg/kg	< 0.00068 U	< 0.000041 U	< 0.00014 U	< 0.000034 U	0.00012 JN	0.00072 J	0.00082 J	0.00089 J	0.00038 JN	0.000071 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0014 JN	0.00059 J+	0.00041 J+	0.00063	0.00032 JN	0.25	0.0052	0.0075	0.013	0.00091 J+
OCDD	3268-87-9	µg/kg	1.3 J	0.12	0.058 J	0.13	1.4	7.5 J	9.1 J	8.9 J	1.7	0.15
OCDF	39001-02-0	µg/kg	0.092 J	0.0056 J	0.0032 J	0.0049 J	0.10	0.32	0.35	0.50	0.12	0.0083
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.0039	0.00091	0.00048	0.00067	0.0062	0.09	0.042	0.037	0.025	0.0015
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.0032	0.00079	0.00029	0.00059	0.0061	0.09	0.042	0.037	0.025	0.0015
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.0029	0.00075	0.00021	0.00056	0.006	0.09	0.042	0.037	0.025	0.0014
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 120 U	< 2.3 U	< 2.3 U	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 U	< 2.5 U
Aroclor 1221	11104-28-2	µg/kg	< 120 U	< 2.3 U	< 2.3 U	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 U	< 2.5 U
Aroclor 1232	11141-16-5	µg/kg	< 120 U	< 2.3 U	< 2.3 U	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 U	< 2.5 U
Aroclor 1242	53469-21-9	µg/kg	< 120 U	< 2.3 U	< 2.3 U	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 U	< 2.5 U
Aroclor 1248	12672-29-6	µg/kg	< 120 U	< 2.3 U	< 2.3 U	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 U	< 2.5 U
Aroclor 1254	11097-69-1	µg/kg	< 120 U	< 2.3 UJ	< 2.3 UJ	< 2.3 U	< 2.7 U	< 4.4 U	< 4.6 U	< 4.3 U	< 2.7 UJ	< 2.5 UJ
Aroclor 1260	11096-82-5	µg/kg	< 120 U	0.69 J	0.95 J	0.47 J	7.0	16 J	16 J	18 J	6.0	1.0 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	< 120 U	0.69	0.95	0.47	7	16	16	18	6	1
Pesticides												
2,4-DDD	53-19-0	µg/kg	< 0.027 UJ	0.285 J	0.174 J	0.133 J	0.0831 J	14.0	7.64	12.4	6.58 J	1.14 J
2,4-DDE	3424-82-6	µg/kg	< 0.016 U	< 0.019 UJ	0.15 JN	< 0.0303 U	< 0.00845 U	0.435 J	0.563 J	0.970 J	0.411 J	0.0537 J
2,4-DDT	789-02-6	µg/kg	< 0.11 UJ	< 0.023 UJ	< 0.042 UJ	< 0.017 UJ	< 0.014 UJ	1.21 J	3.60	1.2 JN	0.443 J	0.0904 J
4,4'-DDD	72-54-8	µg/kg	< 0.11 UJ	0.502 J	0.372 J	0.349 J	0.130 J	18.2	17.6	20.7	20.3 J	3.83 J
4,4'-DDE	72-55-9	µg/kg	< 0.021 U	0.228 J	0.759 J	0.227 J	0.0901 J	5.94	6.58 J	6.07 J	2.57	0.250 J
4,4'-DDT	50-29-3	µg/kg	< 0.25 UJ	< 0.069 UJ	1.05 J	< 0.044 UJ	< 0.031 UJ	4.37	5.01	3.24	0.740 J	0.376 J
DDx (b)	T_DDx (PDI)	µg/kg	< 0.25 UJ	1.05	2.53	0.731	0.319	44.2	41	44.6	31	5.74
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	19000	34	33 J	730	1200 J	470	520	690	37000	2600 J
Acenaphthene	83-32-9	µg/kg	230000	1600	1600	1400	31000	430	540	610	38000	6800
Acenaphthylene	208-96-8	µg/kg	20000	220	150 J	94	2000 J	76	98	90	2200	500
Anthracene	120-12-7	µg/kg	120000	1200	1200	1000	26000	410	420	400	29000	5200
Benz(a)anthracene	56-55-3	µg/kg	120000	1200	1000	510	18000	1100	1100	1000	14000	3100
Benzo(a)pyrene	50-32-8	µg/kg	160000	1800	1200	620	25000	920	1000	790	17000	3300
Benzo(b)fluoranthene	205-99-2	µg/kg	160000	1700	1200	610	22000	1200	1400	1100	14000	2600
Benzo(g,h,i)perylene	191-24-2	µg/kg	130000	1200	1100	610	24000	550	630	450	11000	2000
Benzo(k)fluoranthene	207-08-9	µg/kg	47000	520	470 J	210	8900	370	300	230	5500	1100
Chrysene	218-01-9	µg/kg	140000	1800	1300	660	23000	1200	1100	1100	19000	4300
Dibenz(a,h)anthracene	53-70-3	µg/kg	25000	180	170 J	88	3300	180	190	140	1900	350
Fluoranthene	206-44-0	µg/kg	550000	4300	4400	2800	79000	2500	2200	1900	59000	10000
Fluorene	86-73-7	µg/kg	89000	990	910	990	15000	390	460	500	21000	4100 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	130000	1500	1100	600	23000	1000	1100	790	12000	2300
Naphthalene	91-20-3	µg/kg	130000	190	240 J	6400	11000	2300	2500	2300	4300	250
Phenanthrene	85-01-8	µg/kg	510000	4800	5800	5300	110000	1200	1300	1100	190000	24000 J
Pyrene	129-00-0	µg/kg	640000	5000	5200	3200	93000	3000	3000	3900	76000	14000
Total PAHs (b)	T_PAH (PDI)	µg/kg	3200000	28000	27000	26000	520000	17000	18000	17000	550000	87000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	230000	2400	1700	880	35000	1400	1600	1200	23000	4500

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S109	SC-S109	SC-S109	SC-S109	SC-S109	SC-S112	SC-S112	SC-S112	SC-S113	SC-S113
			Sample ID	PDI-SC-S109-10TO11.3	PDI-SC-S109-2TO4	PDI-SC-S109-4TO6	PDI-SC-S109-6TO8	PDI-SC-S109-8TO10	PDI-SC-S112-0TO2	PDI-SC-S112-2TO4	PDI-SC-S112-4TO6	PDI-SC-S113(A)-0TO2.2	PDI-SC-S113(A)-2.2TO4.6
			Sample Date	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	9/5/2018	9/5/2018	9/5/2018	8/15/2018	8/15/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	10-11.3 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft	4-6 ft	0-2.2 ft	2.2-4.6 ft
Chemical		**CAS_RN**	**Units**										
Other													
Total Solids@104C		TSOLID	%	56.9	84.5	84.6	85.5	72.5	44.3	41.9	46.3	72.4	78.0
Total Solids@70C		TSOLID70	%	60	86	86	86	74	45	43	47	73	79
Total Solids (%)		%SOLID	%	60.2	85.8	84.3	85.9	69.9	45.7	43.3	49	70.9	78.7
Clay		GS-Clay	%	0.8	1.6	0.8	0.8	4.5	7.3	3.1	6.8	5.0	0
Gravel		GS-Gravel	%	5.5	0	0	0	0	15.8	5.7	9.2	0	0
Sand, Coarse		GS-Csand	%	4.4	0.7	1.0	0.2	0.4	1.8	1.0	2.9	0.2	0.2
Sand, Fine (#200)	(d)	GS-Fsand-200	%	55.13	57.44	56.86	56.77	54.09	25.34	19.61	31.04	65.49	74.45
Sand, Fine (#230)	(d)	GS-Fsand	%	55.4	57.6	57.0	56.9	54.5	29.0	24.1	34.6	65.8	74.6
Sand, Medium		GS-Msand	%	26.1	38.4	39.2	40.5	29.2	3.5	3.3	5.0	19.9	21.3
Silt (#200)	(d)	GS-Silt-200	%	8.062	1.857	2.137	1.628	11.90	46.15	67.28	45.05	9.308	3.945
Silt (#230)	(d)	GS-Silt	%	7.8	1.7	2.0	1.5	11.5	42.5	62.8	41.5	9.0	3.8
Percent Fines	(e)	GS-FINES	%	8.862	3.457	2.937	2.428	16.4	53.45	70.38	51.85	14.308	3.945
Liquid Limit		GS-LL	None										
Plasticity Index		GS-PI	None										
Plasticity Limit		GS-PL	None										
Total Organic Carbon		TOC	mg/kg	200000	2500	2300	2000	34000	110000	130000	140000	19000	2000

Notes:

a. Qualifiers:
- J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
- +/- = Indicates the result may be biased high/low
- JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U = Not detected at detection limit shown.
- UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113
			Sample ID	PDI-SC-S113(A)-2.2TO4.6D	PDI-SC-S113(B)-10TO12	PDI-SC-S113(B)-12TO13.8	PDI-SC-S113(B)-3.6TO5.6	PDI-SC-S113(B)-5.6TO7.4	PDI-SC-S113(B)-7.4TO10	PDI-SC-S113C-0TO1.1	PDI-SC-S113C-1.1TO3.1
			Sample Date	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	9/6/2018	9/6/2018
			Sample Type Code	FD	N	N	N	N	N	N	N
			Depth	2.2- ft	10-12 ft	12-13.8 ft	3.6-5.6 ft	5.6-7.4 ft	7.4-10 ft	0-1.1 ft	1.1-3.1 ft
Chemical		**CAS_RN**	**Units**								
Dioxins and Furans											
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.017	0.060	0.10	0.36	0.34	0.069	1.5	0.040
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.0036	0.012	0.0099	0.078	0.088	0.015	0.088 J	0.0031
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.0011 J+	0.0028 J	0.0020 J	0.015	0.022	0.0035	0.019 J	0.0012 J+
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00018 J+	0.00041 J+	0.00040 J+	0.0027 J	0.0031 J	0.00048 J+	0.0052 J	0.00031 JN
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.0041	0.014	0.0089	0.086	0.13	0.017	0.099	0.0032
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.00047 J	0.0019 J	0.0022 J	0.019	0.017	0.0026 J	0.031 J	0.0010 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.0011 J	0.0034	0.0021 J	0.021	0.031	0.0045	0.024 J	0.0011 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00039 J	0.0011 J	0.0015 J	0.0077	0.0069	0.0014 J	0.023 J	0.00081 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.00082 U	0.00068 J	0.0011 J	0.0031 J	0.0028 J	0.0010 J	0.0044 J+	0.0014 J+
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.00010 JN	0.00020 J	0.00021 J	0.0020 J	0.0018 J	0.00029 J	0.0032 J	< 0.00023 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.0024 J	0.0070	0.0045	0.048	0.053	0.010	0.051 J	0.0024 J
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.00020 J	0.00056 J	0.00038 J	0.0039 J	0.0045	0.00076 J	0.0051 J	0.00029 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0010 J	0.0028 J	0.0019 J	0.019	0.020	0.0038	0.022 J	0.00084 J
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000061 U	0.000091 JN	0.000094 JN	0.00094 J	0.00079 J	0.00012 JN	0.0014 J	< 0.00020 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.0024	0.0045	0.0032	0.019	0.034	0.0062	0.031	0.0012
OCDD		3268-87-9	µg/kg	0.19	0.54	0.76	3.6	3.2	0.66	9.1	0.28
OCDF		39001-02-0	µg/kg	0.011	0.034	< 0.00013 U	0.00083 J	0.19	0.041	0.37	0.012
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.0017	0.0049	0.0043	0.032	0.039	0.0063	0.054	0.0019
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.0016	0.0049	0.0043	0.032	0.039	0.0063	0.054	0.0019
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.0015	0.0048	0.0042	0.032	0.039	0.0062	0.054	0.0018
Polychlorinated Biphenyls (PCBs)											
Aroclor 1016		12674-11-2	µg/kg	< 2.5 U	< 2.4 U	< 2.5 U	< 3.9 U	< 3.3 U	< 2.5 U	< 3.9 U	< 12 U
Aroclor 1221		11104-28-2	µg/kg	< 2.5 U	< 2.4 U	< 2.5 U	< 3.9 U	< 3.3 U	< 2.5 U	< 3.9 U	< 12 U
Aroclor 1232		11141-16-5	µg/kg	< 2.5 UJ	< 2.4 U	< 2.5 U	< 3.9 U	< 3.3 U	< 2.5 U	< 3.9 U	< 12 U
Aroclor 1242		53469-21-9	µg/kg	< 2.5 U	< 2.4 U	< 2.5 U	< 3.9 U	< 3.3 U	< 2.5 U	< 3.9 U	< 12 U
Aroclor 1248		12672-29-6	µg/kg	< 2.5 U	< 2.4 U	< 2.5 U	< 3.9 U	< 3.3 U	< 2.5 U	< 3.9 U	< 12 U
Aroclor 1254		11097-69-1	µg/kg	< 2.5 U	< 2.4 UJ	< 2.5 UJ	< 3.9 UJ	< 3.3 UJ	< 2.5 UJ	< 3.9 U	< 12 U
Aroclor 1260		11096-82-5	µg/kg	1.4 J	2.3 J	2.5 J	10	16	3.3	14 J	< 12 U
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	1.4	2.3	2.5	10	16	3.3	14	< 12 U
Pesticides											
2,4-DDD		53-19-0	µg/kg	2.67	5.13	10.0	40.7	37.5	5.39	32.7	2.20
2,4-DDE		3424-82-6	µg/kg	0.0738 J	0.323 J	0.363 J	2.82	2.29	0.421 J	2.02 J	0.0740 J
2,4-DDT		789-02-6	µg/kg	0.098 JN	0.128 J	0.13 JN	0.706 J	3.90	0.140 J	< 0.76 U	< 0.025 U
4,4'-DDD		72-54-8	µg/kg	7.03 J	14.2	29.6	94.8	158	14.9	60.5	5.22
4,4'-DDE		72-55-9	µg/kg	0.354 J	1.57	1.46	14.2	12.9	2.15	12.7 J	0.424 J
4,4'-DDT		50-29-3	µg/kg	0.397 J	0.176 J	0.186 J	0.370 J	1.64	0.326 J	< 1.1 U	0.189 J
DDx	(b)	T_DDx (PDI)	µg/kg	10.6	21.5	41.7	154	216	23.3	108	8.12
Semivolatile Organics											
2-Methylnaphthalene		91-57-6	µg/kg	280 J	6600	3400	6100	7300	4100	200000	5500
Acenaphthene		83-32-9	µg/kg	4600	18000	35000	31000	28000	12000	330000	21000
Acenaphthylene		208-96-8	µg/kg	570	730	1400	2200	1600	500	9400 J	870
Anthracene		120-12-7	µg/kg	4900	7800	16000	15000	15000	5700	140000	10000
Benz(a)anthracene		56-55-3	µg/kg	3600	5400	11000	16000	12000	4000	70000	7400
Benzo(a)pyrene		50-32-8	µg/kg	4400	7400	15000	25000	18000	5200	84000	7600
Benzo(b)fluoranthene		205-99-2	µg/kg	3600	6200	13000	21000	15000	4500	76000	7400
Benzo(g,h,i)perylene		191-24-2	µg/kg	2700	5000	9700	18000	12000	3400	71000	6000
Benzo(k)fluoranthene		207-08-9	µg/kg	1400	2300	4500	8100	5700	1700	26000	2100
Chrysene		218-01-9	µg/kg	5000	7100	14000	22000	16000	5600	89000	8500
Dibenz(a,h)anthracene		53-70-3	µg/kg	500	750	1400	2600	1700	510	8500 J	660
Fluoranthene		206-44-0	µg/kg	13000	21000	42000	59000	47000	16000	330000	28000
Fluorene		86-73-7	µg/kg	2200 J	8000	16000	14000	14000	5400	120000	8700
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	3000	6000	11000	21000	14000	4100	71000	6000
Naphthalene		91-20-3	µg/kg	240	4700	3900	10000	9000	3400	290000	5200
Phenanthrene		85-01-8	µg/kg	11000 J	43000	87000	88000	78000	31000	620000	57000
Pyrene		129-00-0	µg/kg	17000	27000	52000	75000	59000	20000	390000	37000
Total PAHs	(b)	T_PAH (PDI)	µg/kg	78000	180000	340000	430000	350000	130000	2900000	220000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	5900	9900	20000	34000	24000	7000	110000	10000

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113	SC-S113
		Sample ID	PDI-SC-S113(A)-2.2TO4.6D	PDI-SC-S113(B)-10TO12	PDI-SC-S113(B)-12TO13.8	PDI-SC-S113(B)-3.6TO5.6	PDI-SC-S113(B)-5.6TO7.4	PDI-SC-S113(B)-7.4TO10	PDI-SC-S113C-0TO1.1	PDI-SC-S113C-1.1TO3.1
		Sample Date	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	8/15/2018	9/6/2018	9/6/2018
		Sample Type Code	FD	N	N	N	N	N	N	N
		Depth	2.2- ft	10-12 ft	12-13.8 ft	3.6-5.6 ft	5.6-7.4 ft	7.4-10 ft	0-1.1 ft	1.1-3.1 ft
Chemical	**CAS_RN**	**Units**								
Other										
Total Solids@104C	TSOLID	%	77.6	82.2	79.9	48.7	59.0	77.4	50.8	79.9
Total Solids@70C	TSOLID70	%	78	82	82	50	59	79	51	79
Total Solids (%)	%SOLID	%	79.5	82	82.2	50.7	61.7	80.3	50.2	79.8
Clay	GS-Clay	%		1.7	1.6	9.0	10.1	3.3	8.4	0
Gravel	GS-Gravel	%		0.3	0	0	0	0	9.5	1.1
Sand, Coarse	GS-Csand	%		0	0	0.9	0.1	0.1	0.9	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%		72.51	72.5	27.51	37.58	70.48	33.67	73.95
Sand, Fine (#230) (d)	GS-Fsand	%		72.8	72.8	30.3	39.4	71.0	36.1	74.2
Sand, Medium	GS-Msand	%		19.5	22.4	2.4	6.0	16.7	3.9	21.6
Silt (#200) (d)	GS-Silt-200	%		5.980	3.391	60.18	46.21	9.417	43.62	3.245
Silt (#230) (d)	GS-Silt	%		5.7	3.1	57.4	44.4	8.9	41.2	3.0
Percent Fines (e)	GS-FINES	%		7.68	4.991	69.18	56.31	12.717	52.02	3.245
Liquid Limit	GS-LL	None								
Plasticity Index	GS-PI	None								
Plasticity Limit	GS-PL	None								
Total Organic Carbon	TOC	mg/kg	2000	6500	7600	54000	40000	6900	130000	2200

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S113	SC-S113	SC-S117	SC-S117	SC-S117	SC-S121	SC-S121	SC-S127	SC-S127
		Sample ID	PDI-SC-S113C-3.1TO5.6	PDI-SC-S113C-5.6TO6.6	PDI-SC-S117-0TO2	PDI-SC-S117-2TO4	PDI-SC-S117-4TO6	PDI-SC-S121-0TO1.8	PDI-SC-S121-1.8TO3.4	PDI-SC-S127-0TO2	PDI-SC-S127-2TO4
		Sample Date	9/6/2018	9/6/2018	8/7/2018	8/7/2018	8/7/2018	9/5/2018	9/5/2018	7/24/2018	7/24/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	3.1-5.6 ft	5.6-6.6 ft	0-2 ft	2-4 ft	4-6 ft	0-1.8 ft	1.8-3.4 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**									
Dioxins and Furans											
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.0064	0.0021 J	0.30	0.67	0.75	0.041	0.25	0.13	0.10
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.00050 J+	0.00037 J+	0.21	0.49	0.44	0.0042	0.028	0.050	0.11
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.00042 J+	0.00045 J+	0.080	0.18	0.17	0.00036 J+	0.0015 J+	0.016	0.047 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00012 J+	0.00019 JN	0.0020 J	0.0056 J	0.0036 J	0.00039 J+	0.0013 J	0.0011 J	0.00091 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.00020 J	0.00020 J	0.52	1.1	1.0	0.00059 J	0.0033	0.088	0.23 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.00014 JN	0.00020 JN	0.0092	0.024 J	0.022 J	0.0024 J	0.0097	0.0056	0.0040
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.000099 J	0.00019 J	0.14	0.26	0.25	0.00031 J	0.0012 J	0.020	0.058 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00016 J+	0.00031 J+	0.0050	0.014 J	0.012 J	0.0010 J	0.0031 J	0.0027 J	0.0023 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0013 J+	< 0.0012 U	0.0058	0.017 J	0.015 J	< 0.0011 U	0.0014 J+	0.0015 J	0.0030 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	< 0.000054 U	0.00010 J	0.0022 J	0.0056 J	0.0032 J	0.00023 J	0.00083 J	0.00077 J	0.00056 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.00037 JN	0.00036 J+	0.25	0.73	0.69	0.00040 J+	0.0029 J	0.058	0.14 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	< 0.000042 U	0.00014 J	0.015	0.037 J	0.037 J	0.00040 J	< 0.00011 U	0.0033 J	0.0078
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.00014 JN	0.000071 JN	0.087	0.33	0.27	0.00019 J+	0.0015 J	0.020	0.057 J
2,3,7,8-TCDD	1746-01-6	µg/kg	< 0.000044 U	< 0.0000099 U	0.0019	0.0047 J	0.0016 JN	< 0.000051 U	0.00023 J	0.00043 JN	0.00037 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.00022 J+	< 0.00011 U	0.20	0.52 J	0.42	0.00035 J+	0.0017	0.039	0.085 J
OCDD	3268-87-9	µg/kg	0.13	0.018	3.4 J	8.7	12 J	0.41	3.1 J	1.3	1.4
OCDF	39001-02-0	µg/kg	0.0043 J	0.0013 J+	0.38	1.4	1.3 J	0.010	0.14	0.13	0.25
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.00042	0.00035	0.13	0.35	0.3	0.0015	0.0075	0.027	0.064
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.00035	0.00029	0.13	0.35	0.3	0.0015	0.0075	0.027	0.064
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.00032	0.00023	0.13	0.35	0.3	0.0014	0.0075	0.027	0.064
Polychlorinated Biphenyls (PCBs)											
Aroclor 1016	12674-11-2	µg/kg	< 2.5 UJ	< 2.5 UJ	44	< 3.3 UJ	< 3.3 U	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 U
Aroclor 1221	11104-28-2	µg/kg	< 2.5 U	< 2.5 UJ	< 3.2 UJ	< 3.3 UJ	< 3.3 UJ	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 UJ
Aroclor 1232	11141-16-5	µg/kg	< 2.5 U	< 2.5 UJ	< 3.2 U	< 3.3 UJ	< 3.3 U	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 UJ
Aroclor 1242	53469-21-9	µg/kg	< 2.5 U	< 2.5 UJ	< 3.2 U	< 3.3 UJ	< 3.3 U	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 U
Aroclor 1248	12672-29-6	µg/kg	< 2.5 U	< 2.5 UJ	< 3.2 U	< 3.3 UJ	< 3.3 U	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 U
Aroclor 1254	11097-69-1	µg/kg	< 2.5 U	< 2.5 UJ	59	< 3.3 UJ	< 3.3 U	< 2.4 U	< 2.6 UJ	< 2.9 UJ	< 2.9 U
Aroclor 1260	11096-82-5	µg/kg	< 2.5 UJ	< 2.5 UJ	< 3.2 U	35 J	38 J	< 2.4 U	1.6 J	10 J	< 2.9 UJ
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	< 2.5 UJ	< 2.5 UJ	100	35	38	< 2.4 U	1.6	10	< 2.9 UJ
Pesticides											
2,4-DDD	53-19-0	µg/kg	0.245 J	0.057 JN	61.0 J	85.8 J	68.2 J	0.148 J	1.50	6.53	4.77 J
2,4-DDE	3424-82-6	µg/kg	< 0.0088 U	< 0.012 U	4.74 J	14.7 J	17.6 J	< 0.056 UJ	0.0785 J	1.4 J	0.573
2,4-DDT	789-02-6	µg/kg	< 0.024 U	< 0.031 U	1.82 J	3.42 J	2.41 J	< 0.045 U	0.296 J	0.269 J	3.62 J
4,4'-DDD	72-54-8	µg/kg	0.618 J	0.122 J	148 J	241 J	167 J	0.204 J	2.13	19.5	15.6 J
4,4'-DDE	72-55-9	µg/kg	0.0436 J	< 0.014 U	22.7	54.4 J	93.2	0.104 J	0.556 J	10.4	4.31
4,4'-DDT	50-29-3	µg/kg	< 0.035 U	< 0.043 U	3.43 J	87.8 J	5.38 J	< 0.11 U	1.21 J	2.98	1.02 J
DDx (b)	T_DDx (PDI)	µg/kg	0.924	0.201	242	487	354	0.511	5.77	41.1	29.9
Semivolatile Organics											
2-Methylnaphthalene	91-57-6	µg/kg	340	53	910	95000	170000	21	13	65000	85 J
Acenaphthene	83-32-9	µg/kg	1600	390	19000	78000	170000	1.8 J	28	140000	420
Acenaphthylene	208-96-8	µg/kg	77	19	1800	6600	7300	15	14	1000	110
Anthracene	120-12-7	µg/kg	940	260	13000	89000	110000	14	28	34000	190
Benz(a)anthracene	56-55-3	µg/kg	580	130	15000	72000	70000	57	63	13000	920
Benzo(a)pyrene	50-32-8	µg/kg	690	140	15000	43000	57000	70	70	5600	780
Benzo(b)fluoranthene	205-99-2	µg/kg	570	120	15000	44000	59000	67	87	7800 J	920 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	570	120	13000	31000	44000	54	51	3000	600
Benzo(k)fluoranthene	207-08-9	µg/kg	190	46	4500	12000	15000	20	20	2300	230
Chrysene	218-01-9	µg/kg	660	150	15000	72000	69000	74	93	13000	1200
Dibenz(a,h)anthracene	53-70-3	µg/kg	59	16	1900	6500	9000	17	24	450	68
Fluoranthene	206-44-0	µg/kg	2700	600	45000	160000	200000	48	120	71000	3100
Fluorene	86-73-7	µg/kg	830	230	9900	54000	76000	4.7 J	15	100000	180
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560 J	120	13000	30000	42000	87	97	3300	580
Naphthalene	91-20-3	µg/kg	180	60	2700	11000	630000	33	29	550	160
Phenanthrene	85-01-8	µg/kg	4800	1300	57000	400000	440000	35	120	180000	3500
Pyrene	129-00-0	µg/kg	3200	710	56000	220000	260000	100	200	59000	3600
Total PAHs (b)	T_PAH (PDI)	µg/kg	19000	4500	300000	1400000	2400000	720	1100	700000	17000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	920	190	21000	64000	83000	110	120	8500	1100

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S113	SC-S113	SC-S117	SC-S117	SC-S117	SC-S121	SC-S121	SC-S127	SC-S127
		Sample ID	PDI-SC-S113C-3.1TO5.6	PDI-SC-S113C-5.6TO6.6	PDI-SC-S117-0TO2	PDI-SC-S117-2TO4	PDI-SC-S117-4TO6	PDI-SC-S121-0TO1.8	PDI-SC-S121-1.8TO3.4	PDI-SC-S127-0TO2	PDI-SC-S127-2TO4
		Sample Date	9/6/2018	9/6/2018	8/7/2018	8/7/2018	8/7/2018	9/5/2018	9/5/2018	7/24/2018	7/24/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	3.1-5.6 ft	5.6-6.6 ft	0-2 ft	2-4 ft	4-6 ft	0-1.8 ft	1.8-3.4 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	79.7	78.7	61.0	58.7	58.7	80.4	77.5	66.9	66.9
Total Solids@70C	TSOLID70	%	81	77	63	59	59	79	78	72	70
Total Solids (%)	%SOLID	%	80	79.6	62.4	60.9	55.1	81	77.9	71.7	68.6
Clay	GS-Clay	%	0	0	9.3	12.1	13.1	0	0	5.6	4.0
Gravel	GS-Gravel	%	0	0	0	0	0.5	1.0	16.9	0.7	0
Sand, Coarse	GS-Csand	%	0	0	0.6	0.3	0.2	1.5	2.3	2.2	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	92.39	77.52	22.91	16.13	15.41	63.3	46.11	33.15	50.78
Sand, Fine (#230) (d)	GS-Fsand	%	92.6	77.7	26.5	19.7	18.9	63.5	46.5	37.2	54.5
Sand, Medium	GS-Msand	%	3.6	18.2	2.6	3.8	0.7	32.4	31.2	25.4	9.4
Silt (#200) (d)	GS-Silt-200	%	4.008	4.179	64.58	67.66	70.18	1.792	3.485	32.84	35.81
Silt (#230) (d)	GS-Silt	%	3.8	4.0	61.0	64.1	66.7	1.6	3.1	28.8	32.1
Percent Fines (e)	GS-FINES	%	4.008	4.179	73.88	79.76	83.28	1.792	3.485	38.44	39.81
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	830 J	580 J	31000	68000	100000	1100 J	9200	7300	7900

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S127	SC-S127	SC-S129	SC-S129	SC-S129	SC-S131	SC-S131	SC-S131	SC-S131	SC-S136
		Sample ID	PDI-SC-S127-2TO4D	PDI-SC-S127-4TO5.6	PDI-SC-S129-0TO2	PDI-SC-S129-2TO4	PDI-SC-S129-4TO5.3	PDI-SC-S131-0TO2	PDI-SC-S131-2TO4	PDI-SC-S131-4TO6	PDI-SC-S131-6TO8	PDI-SC-S136-0TO2
		Sample Date	7/24/2018	7/24/2018	9/5/2018	9/5/2018	9/5/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/14/2018
		Sample Type Code	FD	N	N	N	N	N	N	N	N	N
		Depth	2- ft	4-5.6 ft	0-2 ft	2-4 ft	4-5.3 ft	0-2 ft	2-4 ft	4-6 ft	6-8 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.067	0.092	0.11	0.72 J	0.96	0.18	0.60	1.4 J	3.6	0.055
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.068	0.087	0.019	0.069	0.095	0.029	0.065	0.13	0.36	0.10
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.026 J	0.028	0.0018 J	0.0046 J	0.0060	0.0027 J+	0.0050	0.0097	0.025	0.043
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00059 J	0.00077 J+	0.0013 J	0.0059	0.0075	0.0016 J	0.0054	0.011	0.018	0.00082 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.12 J	0.17	0.0031 J	0.0099	0.020	0.0043 J	0.010	0.026	0.076	0.24
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0027 J	0.0034	0.0058	0.049	0.067	0.0098	0.040	0.10	0.20	0.0025 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.029 J	0.038	0.0016 J	0.0050	0.0089	0.0017 JN	0.0045 J	0.011	0.031	0.063
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0013 JN	0.0018 JN	0.0033 J	0.014	0.016	0.0053 J	0.014	0.024	0.042	0.0016 JN
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0015 J	0.0022 J	0.0026 J+	0.0019 J+	0.0022 J+	0.0013 J+	0.0014 J+	0.0021 J+	0.0031 J+	0.0036 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00040 J	0.00048 J	0.00077 J	0.0038 J	0.0047	0.0011 J	0.0040 J	0.0063	0.0058	0.0013 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.063 J	0.088	0.0013 J+	0.0037 J	0.0084	0.0012 J	0.0028 J	0.0094	0.033	0.11
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0035 J	0.0046	0.00078 J	0.0032 J	0.0047	0.00076 J	0.0027 J	0.0058	0.013	0.0081
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.022 J	0.028	0.00080 J	0.0025 J	0.0043 J	0.0010 J	0.0023 J	0.0059	0.015	0.036
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00032 JN	0.00045 J	0.00029 J	0.0011	0.0014	0.00031 JN	0.00098	0.0016	0.0012	0.0012
2,3,7,8-TCDF	51207-31-9	µg/kg	0.034 J	0.044	0.00086 JN	0.0041	0.0043	0.00084 JN	0.0046	0.0065	0.017	0.066
OCDD	3268-87-9	µg/kg	0.94	1.3	1.1	6.2 J	8.6 J	1.9	5.2 J	12 J	32	0.67
OCDF	39001-02-0	µg/kg	0.17	0.20	0.061	0.13	0.16	0.10	0.15	0.23	0.80	0.22
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.03	0.041	0.0049	0.025	0.034	0.007	0.022	0.048	0.1	0.057
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.03	0.041	0.0049	0.025	0.034	0.0066	0.022	0.048	0.1	0.057
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.03	0.041	0.0048	0.025	0.034	0.0065	0.022	0.048	0.1	0.057
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.0 U	< 2.6 U	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	< 3.9 U	< 3.7 UJ	< 29 UJ
Aroclor 1221	11104-28-2	µg/kg	< 3.0 UJ	< 2.6 UJ	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	< 3.9 U	< 3.7 UJ	< 29 UJ
Aroclor 1232	11141-16-5	µg/kg	< 3.0 U	< 2.6 U	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	< 3.9 U	< 3.7 UJ	< 29 UJ
Aroclor 1242	53469-21-9	µg/kg	< 3.0 U	< 2.6 U	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	< 3.9 U	< 3.7 UJ	< 29 U
Aroclor 1248	12672-29-6	µg/kg	< 3.0 UJ	< 2.6 UJ	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	< 3.9 U	< 3.7 UJ	28 J
Aroclor 1254	11097-69-1	µg/kg	< 3.0 U	< 2.6 U	< 4.1 U	< 3.7 U	< 3.5 U	< 4.3 U	< 3.9 U	21 J	18 J	< 29 U
Aroclor 1260	11096-82-5	µg/kg	24 J	36 J	< 4.1 U	5.4 J	10 J	5.4	5.2	< 3.9 U	< 3.7 UJ	< 29 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	24	36	< 4.1 U	5.4	10	5.4	5.2	21	18	28
Pesticides												
2,4-DDD	53-19-0	µg/kg	7.37 J	3.6 J	0.44 JN	0.714 J	0.586 J	< 0.22 UJ	0.634 J	0.791 J	1.19 J	77.5 J
2,4-DDE	3424-82-6	µg/kg	0.795	0.475	0.0698 J	0.222 J	0.215 J	< 0.13 UJ	0.15 JN	0.372 J	0.519 J	2.10 J
2,4-DDT	789-02-6	µg/kg	0.83 J	0.135 J	< 0.071 U	< 0.057 U	0.11 JN	< 0.23 UJ	< 0.094 UJ	0.228 J	1.51 J	4.55 J
4,4'-DDD	72-54-8	µg/kg	18.4 J	14.1 J	1.11 J	2.55	1.90	1.06 J	2.03 J	2.83 J	4.02 J	168 J
4,4'-DDE	72-55-9	µg/kg	5.27	4.4	2.31	5.25	5.85	2.65 J	4.10 J	5.92	7.01 J	11.4
4,4'-DDT	50-29-3	µg/kg	0.49 J	0.322 J	0.18 JN	0.27 JN	0.27 JN	< 0.76 UJ	< 0.31 UJ	0.657 J	1.87 J	66.7 J
DDx (b)	T_DDx (PDI)	µg/kg	33.2	23	4.15	9.03	8.93	4.09	7.07	10.8	16.1	330
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	160 J	79	31	95	110	< 260 U	50 J	190 J	76 J	210
Acenaphthene	83-32-9	µg/kg	500	190	49	170	140	< 260 U	96 J	580	300	620
Acenaphthylene	208-96-8	µg/kg	170	26	9.1 J	41	17 J	< 260 U	36 J	51 J	42 J	160
Anthracene	120-12-7	µg/kg	290	140	46	120	120	< 260 U	97 J	370 J	250	560
Benz(a)anthracene	56-55-3	µg/kg	980	140	63	210	180	41 J	130 J	350 J	530	990
Benzo(a)pyrene	50-32-8	µg/kg	920	190	47	150	110	< 260 U	130 J	290 J	380	800
Benzo(b)fluoranthene	205-99-2	µg/kg	1100 J	230 J	78	270	220	78 J	210 J	400 J	740	740
Benzo(g,h,i)perylene	191-24-2	µg/kg	710	170	35	92	66	40 J	110 J	200 J	220 J	570
Benzo(k)fluoranthene	207-08-9	µg/kg	260	69	31	64	49	< 260 U	82 J	160 J	260	320
Chrysene	218-01-9	µg/kg	1300	240	87	310	230	84 J	230 J	470	760	960
Dibenz(a,h)anthracene	53-70-3	µg/kg	81	19	< 19 U	47	37	< 260 U	40 J	< 450 U	77 J	79
Fluoranthene	206-44-0	µg/kg	3700	650	220	610	530	170 J	530	1500	1400	2100
Fluorene	86-73-7	µg/kg	300	150	55	190	150	< 260 U	76 J	570	230 J	270
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	730	160	51	180	140	< 260 U	100 J	210 J	230 J	500
Naphthalene	91-20-3	µg/kg	250	170	44	260	190	47 J	170 J	510	180 J	440
Phenanthrene	85-01-8	µg/kg	4700	850	150	510	460	< 260 U	300	1800	860	2200
Pyrene	129-00-0	µg/kg	4100	780	200	600	490	140 J	500	1400	1300	2700
Total PAHs (b)	T_PAH (PDI)	µg/kg	20000	4300	1200	3900	3200	860	2900	9300	7800	14000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	1300	260	76	260	200	140	220	610	610	1100

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S127	SC-S127	SC-S129	SC-S129	SC-S129	SC-S131	SC-S131	SC-S131	SC-S131	SC-S136
			Sample ID	PDI-SC-S127-2TO4D	PDI-SC-S127-4TO5.6	PDI-SC-S129-0TO2	PDI-SC-S129-2TO4	PDI-SC-S129-4TO5.3	PDI-SC-S131-0TO2	PDI-SC-S131-2TO4	PDI-SC-S131-4TO6	PDI-SC-S131-6TO8	PDI-SC-S136-0TO2
			Sample Date	7/24/2018	7/24/2018	9/5/2018	9/5/2018	9/5/2018	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/14/2018
			Sample Type Code	FD	N	N	N	N	N	N	N	N	N
			Depth	2- ft	4-5.6 ft	0-2 ft	2-4 ft	4-5.3 ft	0-2 ft	2-4 ft	4-6 ft	6-8 ft	0-2 ft
Chemical		**CAS_RN**	**Units**										
Other													
Total Solids@104C		TSOLID	%	66.3	73.9	47.6	51.8	54.7	46.2	50.9	51.7	52.1	67.7
Total Solids@70C		TSOLID70	%	69	77	50	52	56	47	50	52	52	71
Total Solids (%)		%SOLID	%	72.3	75.9	49.6	52.2	55.1	45.1	50.9	53.4	51.2	66
Clay		GS-Clay	%		5.2	14.1	18.7	21.6	12.7	18.5	19.4	18.1	4.7
Gravel		GS-Gravel	%		2.4	0	0	0	0	0	0	0	1.0
Sand, Coarse		GS-Csand	%		0.7	0	0.2	0	0	0	0.7	0.5	0.6
Sand, Fine (#200)	(d)	GS-Fsand-200	%		54.99	15.95	8.699	7.915	11.1	5.964	5.789	4.709	61.89
Sand, Fine (#230)	(d)	GS-Fsand	%		56.5	21.7	12.1	10.8	14.7	8.2	7.9	6.1	66.9
Sand, Medium		GS-Msand	%		20.9	0.1	0.1	0.1	0.2	0.1	0.7	0.5	2.3
Silt (#200)	(d)	GS-Silt-200	%		15.70	69.84	72.30	70.48	75.89	75.33	73.41	76.19	29.60
Silt (#230)	(d)	GS-Silt	%		14.2	64.1	68.9	67.6	72.3	73.1	71.3	74.8	24.6
Percent Fines	(e)	GS-FINES	%		20.9	83.94	91	92.08	88.59	93.83	92.81	94.29	34.3
Liquid Limit		GS-LL	None							79			
Plasticity Index		GS-PI	None							37			
Plasticity Limit		GS-PL	None							42			
Total Organic Carbon		TOC	mg/kg	8500	5100	31000	38000	33000	51000	59000	74000	78000	16000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S136	SC-S136	SC-S136	SC-S136	SC-S136	SC-S139	SC-S139	SC-S139	SC-S139	SC-S140
		Sample ID	PDI-SC-S136-2TO4	PDI-SC-S136-4TO6	PDI-SC-S136-6TO7	PDI-SC-S136-7TO9	PDI-SC-S136-9TO11.3	PDI-SC-S139-0TO2	PDI-SC-S139-2TO4.1	PDI-SC-S139-4.1TO5.9	PDI-SC-S139-4.1TO5.9D	PDI-SC-S140-0TO2
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	7/25/2018
		Sample Type Code	N	N	N	N	N	N	N	N	FD	N
		Depth	2-4 ft	4-6 ft	6-7 ft	7-9 ft	9-11.3 ft	0-2 ft	2-4.1 ft	4.1-5.9 ft	4.1- ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.027	0.014	0.12	0.0076	0.059	0.14	0.022	0.0020 JN	0.0023 JN	0.014
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.027	0.017	0.16	0.012	0.11	0.11	0.031	0.00081 J	0.0012 J	0.069
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.011	0.0064	0.054 J	0.0032 J	0.042	0.035	0.013	0.00045 J+	0.00061 JN	0.029
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00040 J+	0.00019 JN	0.0015 J	0.00018 J+	0.0011 J	0.0016 J	0.00036 JN	0.00014 JN	< 0.000071 U	0.0014 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.056	0.030	0.25	0.017	0.22	0.20	0.060	0.0012 J	0.0029 J	0.27
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0013 J	0.00068 J	0.0061	0.00039 J	0.0041	0.0076	0.0010 J	0.00014 JN	< 0.000066 U	0.0016 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.015	0.010	0.077	0.0042	0.058	0.055	0.016	0.00043 JN	0.00097 J	0.058
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00095 J	0.00062 J	0.0037	0.00033 J	0.0021 JN	0.0049 J	0.00068 JN	0.00022 JN	0.00017 J	0.0018 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.00090 J+	< 0.00071 U	0.0031 J+	< 0.00076 U	0.0038 J+	0.0029 J	0.00065 JN	< 0.00031 U	< 0.00025 U	0.0033 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00094 J	0.00039 JN	0.0045	0.00018 J	0.0033 J	0.0011 J	< 0.00015 U	< 0.00014 U	< 0.00013 U	0.00041 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.043	0.021	0.14	0.0079	0.13	0.085	0.026	0.00071 J	0.0013 J	0.22
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0029 J	0.0023 J	0.015	0.00058 J	0.0086	0.0071	0.0028 J	< 0.00013 U	< 0.00015 U	0.018
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.018	0.011	0.065	0.0028 J	0.050	0.028	0.0097	0.00027 JN	0.00037 J	0.15
2,3,7,8-TCDD	1746-01-6	µg/kg	0.0013	0.00090	0.0037	0.00014 JN	0.0021	< 0.00030 U	< 0.00015 U	< 0.00012 U	< 0.00010 U	< 0.00017 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.032	0.014	0.11	0.0050	0.068	0.051	0.018	0.00049 J	0.00058 J	0.16
OCDD	3268-87-9	µg/kg	0.33	0.19	1.3	0.10	0.76	1.5	0.25	0.027	0.029	0.10
OCDF	39001-02-0	µg/kg	0.067	0.033	0.38	0.021	0.28	0.24	0.066	0.0020 J+	0.0026 J	0.11
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.021	0.011	0.082	0.0045	0.063	0.049	0.014	0.00048	0.00073	0.1
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.021	0.011	0.082	0.0044	0.063	0.049	0.014	0.00028	0.0007	0.1
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.021	0.011	0.082	0.0043	0.063	0.048	0.014	0.00021	0.00063	0.1
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 24 UJ	< 25 UJ	< 26 UJ	< 28 UJ	< 27 UJ	< 4.5 U	< 2.8 U	< 2.6 U	< 2.4 U	< 3.0 UJ
Aroclor 1221	11104-28-2	µg/kg	< 24 UJ	< 25 UJ	< 26 UJ	< 28 UJ	< 27 UJ	< 4.5 UJ	< 2.8 UJ	< 2.6 U	< 2.4 UJ	< 3.0 U
Aroclor 1232	11141-16-5	µg/kg	< 24 UJ	< 25 UJ	< 26 UJ	< 28 UJ	< 27 UJ	< 4.5 U	< 2.8 U	< 2.6 U	< 2.4 U	< 3.0 U
Aroclor 1242	53469-21-9	µg/kg	< 24 U	< 25 U	< 26 U	< 28 U	< 27 U	< 4.5 U	< 2.8 U	< 2.6 U	< 2.4 U	< 3.0 U
Aroclor 1248	12672-29-6	µg/kg	< 24 U	< 25 U	10 J	< 28 U	< 27 U	< 4.5 U	< 2.8 U	< 2.6 U	< 2.4 U	< 3.0 UJ
Aroclor 1254	11097-69-1	µg/kg	< 24 U	< 25 U	< 26 U	< 28 U	< 27 U	< 4.5 U	< 2.8 U	< 2.6 U	< 2.4 U	< 3.0 U
Aroclor 1260	11096-82-5	µg/kg	< 24 U	< 25 U	< 26 U	< 28 U	< 27 U	< 4.5 U	< 2.8 U	< 2.6 UJ	< 2.4 U	< 3.0 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	< 24 UJ	< 25 UJ	10	< 28 UJ	< 27 UJ	< 4.5 UJ	< 2.8 UJ	< 2.6 UJ	< 2.4 UJ	< 3 UJ
Pesticides												
2,4-DDD	53-19-0	µg/kg	64.4 J	31.0 J	29.8	23.1	205	103 J	12.6	0.393 J	0.448 J	102
2,4-DDE	3424-82-6	µg/kg	1.38 J	1.04 J	0.882 J	1.04 J	4.92 J	3.85	0.504 J	0.044 JN	0.061 JN	12 J
2,4-DDT	789-02-6	µg/kg	4.08 J	6.39 J	< 0.81 U	< 0.63 U	20.3	3.22 J	0.85 JN	< 0.037 UJ	< 0.052 UJ	2330
4,4'-DDD	72-54-8	µg/kg	154 J	69.8 J	72.3	46.5	534	198 J	22.6	0.682 J	0.755 J	112
4,4'-DDE	72-55-9	µg/kg	5.25	2.85	3.90 J	2.85 J	17.1	17.0	2.43 J	0.115 J	0.15 JN	87.6
4,4'-DDT	50-29-3	µg/kg	66.4 J	232 J	< 1.8 U	< 1.3 U	757	16.5 J	37.4 J	0.474 J	0.49 JN	14300 J
DDx (b)	T_DDx (PDI)	µg/kg	296	343	108	74.1	1540	342	76.4	1.73	1.93	16900
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	110	48	82	86	290	220	51	30	23	< 7.2 U
Acenaphthene	83-32-9	µg/kg	320	55	190	210	480	440	88	54 J	91 J	< 7.2 U
Acenaphthylene	208-96-8	µg/kg	100	34	86	200	150	180	58	60	72	4.7 J
Anthracene	120-12-7	µg/kg	260	89	200	360	360	340	90	77 J	230 J	1.6 J
Benz(a)anthracene	56-55-3	µg/kg	450	160 J	320	600	540	440	150	140 J	410 J	9.6
Benzo(a)pyrene	50-32-8	µg/kg	510	150 J	360	580	750	380	160	110 J	390 J	12
Benzo(b)fluoranthene	205-99-2	µg/kg	430	140 J	350	520	670	460	160	130 J	360 J	25
Benzo(g,h,i)perylene	191-24-2	µg/kg	510	150 J	390	500	880	420	170	95 J	280 J	21
Benzo(k)fluoranthene	207-08-9	µg/kg	190	54	140	210	260	110	39	33 J	120 J	8.7
Chrysene	218-01-9	µg/kg	470	190 J	350	580	710	420	160	120 J	350 J	25
Dibenz(a,h)anthracene	53-70-3	µg/kg	41	17	31	47	63	55	19	13 J	49 J	3.0 J
Fluoranthene	206-44-0	µg/kg	900	320 J	630	1200	1800	1500	400	290 J	900 J	18
Fluorene	86-73-7	µg/kg	130	37	100	120	260	220	47	39	57	< 7.2 U
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	370	110 J	280	380	630	340	130	83 J	290 J	18
Naphthalene	91-20-3	µg/kg	330	120 J	350	450	1300	1100	210	170 J	83 J	< 7.2 U
Phenanthrene	85-01-8	µg/kg	1000	260 J	620	950	1700	1300	310	240 J	680 J	5.1 J
Pyrene	129-00-0	µg/kg	1600	650 J	1500	1900	3300	1900	530	420 J	1200 J	19
Total PAHs (b)	T_PAH (PDI)	µg/kg	7700	2600	6000	8900	14000	9800	2800	2100	5600	170
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	680	210	490	780	1000	560	220	160	550	20

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S136	SC-S136	SC-S136	SC-S136	SC-S136	SC-S139	SC-S139	SC-S139	SC-S139	SC-S140
		Sample ID	PDI-SC-S136-2TO4	PDI-SC-S136-4TO6	PDI-SC-S136-6TO7	PDI-SC-S136-7TO9	PDI-SC-S136-9TO11.3	PDI-SC-S139-0TO2	PDI-SC-S139-2TO4.1	PDI-SC-S139-4.1TO5.9	PDI-SC-S139-4.1TO5.9D	PDI-SC-S140-0TO2
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	7/25/2018
		Sample Type Code	N	N	N	N	N	N	N	N	FD	N
		Depth	2-4 ft	4-6 ft	6-7 ft	7-9 ft	9-11.3 ft	0-2 ft	2-4.1 ft	4.1-5.9 ft	4.1- ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	79.6	77.6	75.8	69.8	71.7	43.1	70.1	72.1	77.0	66.7
Total Solids@70C	TSOLID70	%	75	76	74	74	73	44	72	60	77	69
Total Solids (%)	%SOLID	%	75	77.7	75.6	66.7	71.6	43.8	66	76.9	77.1	72.5
Clay	GS-Clay	%	3.6	0.9	1.9	6.4	7.0	11.7	4.3		4.0	2.9
Gravel	GS-Gravel	%	24.3	0	0	0	0	0.9	0		0	0
Sand, Coarse	GS-Csand	%	0.7	0.2	1.0	0.1	0.2	0.7	0		0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	58.01	80.8	59.78	50.25	45.8	21.01	69.36			67.48
Sand, Fine (#230) (d)	GS-Fsand	%	60.4	82.5	63.6	55.3	50.7	26.9	72.9		83.1	68.6
Sand, Medium	GS-Msand	%	1.8	4.3	6.1	2.2	3.6	1.4	2.5		6.6	18.6
Silt (#200) (d)	GS-Silt-200	%	11.58	13.79	31.11	41.04	43.39	64.28	23.73			11.11
Silt (#230) (d)	GS-Silt	%	9.2	12.1	27.3	36.0	38.5	58.4	20.2		6.3	10.0
Percent Fines (e)	GS-FINES	%	15.18	14.69	33.01	47.44	50.39	75.98	28.03		11.3	14.01
Liquid Limit	GS-LL	None							0			
Plasticity Index	GS-PI	None							< 0 U			
Plasticity Limit	GS-PL	None							0			
Total Organic Carbon	TOC	mg/kg	9700	4800	14000	16000	21000	71000	11000	3700	3200	400 J

Notes:

a. Qualifiers:
- J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
- +/- = Indicates the result may be biased high/low
- JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
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c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

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DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S140	SC-S140	SC-S144	SC-S144	SC-S144	SC-S144	SC-S144	SC-S144	SC-S146	SC-S146
			Sample ID	PDI-SC-S140-2TO4	PDI-SC-S140-4TO5.7	PDI-SC-S144-0TO2	PDI-SC-S144-10TO12.1	PDI-SC-S144-2TO4	PDI-SC-S144-4TO6	PDI-SC-S144-6TO8	PDI-SC-S144-8TO10	PDI-SC-S146-0TO2	PDI-SC-S146-2TO4
			Sample Date	7/25/2018	7/25/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/14/2018	8/14/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	2-4 ft	4-5.7 ft	0-2 ft	10-12.1 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.0011 J	0.0019 J	1.1 J	0.0027 J	0.82 J	0.78 J	0.10	0.0031 J	0.32 J	3.0 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.00018 J+	0.00073 J	0.11	0.0011 JN	0.15	0.21 J	0.16	0.0023 J	1.2 J	1.6 J
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.000083 JN	0.00024 J	0.0073	0.0010 J	0.013	0.021 J	0.0037 J	< 0.00027 U	0.51 J	0.68 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		< 0.000034 U	< 0.00018 U	0.013	0.00028 JN	0.0067	0.0045	0.0013 J	0.00029 J+	0.0024 J	0.0025 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.00022 J	< 0.000090 U	0.017	0.00029 JN	0.034	0.050	0.0093	< 0.00022 U	3.2 J	3.4 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		< 0.000034 U	0.00024 J	0.074	0.00047 JN	0.039	0.031	0.0070	0.00088 J	0.0088	0.028
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		< 0.000063 U	< 0.000088 U	0.0086	0.00024 JN	0.013	0.015	0.013	< 0.00021 U	0.95 J	0.98 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.00015 J	0.00035 J	0.033	0.00074 J	0.016	0.012	0.0027 J	0.00038 JN	0.0046 J	0.0065
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00012 U	0.000089 J	< 0.0027 U	0.00042 J	< 0.0030 U	< 0.0023 U	< 0.0018 U	< 0.00031 U	0.059 J	0.051 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		< 0.000031 U	< 0.000050 U	0.0067	< 0.00012 U	0.0026 J	0.0021 J	0.0012 J	< 0.00022 U	< 0.00049 U	0.0016 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.00015 JN	0.00017 JN	0.0045 J	< 0.000089 U	0.0072	0.0063	0.0016 J	< 0.00015 U	2.0 J	2.0 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.000037 U	< 0.000057 U	0.0043 J	0.00056 JN	< 0.0031 U	0.0039 JN	0.0027 J	< 0.00021 U	0.15 J	0.12 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		< 0.000026 U	0.00011 JN	0.0038 J	< 0.000095 U	0.0062	0.0096	0.0028 J	< 0.00016 U	0.87 J	0.73 J
2,3,7,8-TCDD	1746-01-6	µg/kg		< 0.000023 U	< 0.000037 U	0.0014	< 0.000070 U	0.0011	0.00084 JN	0.00048 JN	< 0.000071 U	0.00067 JN	0.0012
2,3,7,8-TCDF	51207-31-9	µg/kg		0.00014 JN	0.00051 J	0.0022	0.00019 J	0.0029	0.0032	0.0011	0.00039 J	1.4 J	1.1 J
OCDD	3268-87-9	µg/kg		0.014	0.020	10 J	0.018	8.2 J	7.4 J	1.3	0.030	5.4 J	52 J
OCDF	39001-02-0	µg/kg		0.00064 J+	0.0024 J	0.24	0.0033 J	0.34	0.74	0.13	0.0023 J	2.1	7.9 J
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.000089	0.00022	0.04	0.00043	0.029	0.031	0.0094	0.00037	0.92	0.92
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.00007	0.00018	0.04	0.00024	0.029	0.03	0.0091	0.00033	0.92	0.92
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.000054	0.00015	0.04	0.00018	0.029	0.029	0.0089	0.00022	0.92	0.92
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.8 UJ	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 UJ	< 36 UJ
Aroclor 1221	11104-28-2	µg/kg		< 2.8 U	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 UJ	< 36 UJ
Aroclor 1232	11141-16-5	µg/kg		< 2.8 U	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 UJ	< 36 UJ
Aroclor 1242	53469-21-9	µg/kg		< 2.8 U	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 U	< 36 U
Aroclor 1248	12672-29-6	µg/kg		< 2.8 UJ	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 UJ	< 36 UJ
Aroclor 1254	11097-69-1	µg/kg		< 2.8 U	< 2.9 UJ	< 4.2 UJ	< 3.1 U	< 3.6 U	< 3.5 U	< 3.2 U	< 3.1 UJ	< 200 U	< 36 U
Aroclor 1260	11096-82-5	µg/kg		< 2.8 U	< 2.9 UJ	4.8 J	< 3.1 U	38	38	25	< 3.1 UJ	< 200 U	< 36 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		< 2.8 UJ	< 2.9 UJ	4.8	< 3.1 U	38	38	25	< 3.1 UJ	< 200 UJ	< 36 UJ
Pesticides													
2,4-DDD	53-19-0	µg/kg		4.11	0.0358 J	0.395 J	< 0.0086 U	1.31 J	9.54 J	6.88 J	< 0.020 UJ	189 J	317 J
2,4-DDE	3424-82-6	µg/kg		0.275 J	0.207 J	0.134 J	< 0.0056 U	0.463 J	3.53	1.04 J	0.012 JN	7.92 J	15.8 J
2,4-DDT	789-02-6	µg/kg		3.39	0.0859 J	< 0.037 UJ	< 0.012 U	0.264 J	0.337 J	14.3 J	< 0.038 UJ	39.4 J	75.6 J
4,4'-DDD	72-54-8	µg/kg		1.27 J	< 0.0219 U	1.39 J	< 0.015 U	3.46 J	22.5 J	19.9 J	0.044 JN	531 J	982 J
4,4'-DDE	72-55-9	µg/kg		1.29 J	0.143 J	3.12	0.0138 J	7.48	21.7	6.40	0.0435 J	76.2	114
4,4'-DDT	50-29-3	µg/kg		73.7	0.546 J	0.392 J	0.0878 J	1.10 J	3.17 J	483 J	0.18 JN	10700 J	1910 J
DDx (b)	T_DDx (PDI)	µg/kg		84	1.03	5.45	0.109	14.1	60.8	532	0.299	11500	3410
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		24	15	53	59	1400	3600	1300	95	510	310
Acenaphthene	83-32-9	µg/kg		0.51 J	9.4 J	58	90	9900	12000	1800	79	2000	860
Acenaphthylene	208-96-8	µg/kg		1.5	33	32	130	120	150	130	200	600	130
Anthracene	120-12-7	µg/kg		1.4 J	33	98	100	3100	2600	660	110	4300	790
Benz(a)anthracene	56-55-3	µg/kg		7.5	75	170	120	2600	1700	560	130	4700	1400
Benzo(a)pyrene	50-32-8	µg/kg		6.8	91	110	110	730	430	350	120	3100	650
Benzo(b)fluoranthene	205-99-2	µg/kg		10	110	240	120	1400	810	490	150	4700	1300
Benzo(g,h,i)perylene	191-24-2	µg/kg		7.9	110	95	150	300	240	370	140	2000	370
Benzo(k)fluoranthene	207-08-9	µg/kg		4.0	36	64	37	440	240	160	46	1400	420
Chrysene	218-01-9	µg/kg		11	100	240	150	2200	1400	590	180	5000	1700
Dibenz(a,h)anthracene	53-70-3	µg/kg		< 1.4 U	8.9 J	19	13	96	52	43	17	590	93
Fluoranthene	206-44-0	µg/kg		16	200	440	400	12000	10000	2400	520	16000	4000
Fluorene	86-73-7	µg/kg		< 1.4 U	11 J	54	72	7500	8400	1100	88	2500	1300
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		6.2	100	74	110	290	200	240	110	1800	400
Naphthalene	91-20-3	µg/kg		35	89	140	340	1700	3900	4200	610	1100	500
Phenanthrene	85-01-8	µg/kg		6.1	150	170	400	17000	110000	3100	520	18000	6200
Pyrene	129-00-0	µg/kg		19	270	460	510	8800	6500	2200	700	14000	3400
Total PAHs (b)	T_PAH (PDI)	µg/kg		160	1400	2500	2900	70000	160000	20000	3800	82000	24000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		9.9	130	180	160	1300	760	520	180	4800	1100

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S140	SC-S140	SC-S144	SC-S144	SC-S144	SC-S144	SC-S144	SC-S144	SC-S146	SC-S146
		Sample ID	PDI-SC-S140-2TO4	PDI-SC-S140-4TO5.7	PDI-SC-S144-0TO2	PDI-SC-S144-10TO12.1	PDI-SC-S144-2TO4	PDI-SC-S144-4TO6	PDI-SC-S144-6TO8	PDI-SC-S144-8TO10	PDI-SC-S146-0TO2	PDI-SC-S146-2TO4
		Sample Date	7/25/2018	7/25/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/14/2018	8/14/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	2-4 ft	4-5.7 ft	0-2 ft	10-12.1 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	69.4	67.1	47.5	62.3	54.4	57.0	59.1	61.7	49.1	54.5
Total Solids@70C	TSOLID70	%	73	69	49	66	58	59	63	62	53	55
Total Solids (%)	%SOLID	%	71.7	68.8	49.1	61.8	55.4	57.1	59	60.6	53.1	56.1
Clay	GS-Clay	%	1.9	5.2	17.3	14.7	18.7	19.7	19.4	17.6	8.4	16.5
Gravel	GS-Gravel	%	0	0	0	0	0	0	0	0	0.2	0
Sand, Coarse	GS-Csand	%	0	0.1	0	0	0.1	0.1	0.1	0	0.1	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	86.82	26.13	6.606	30.17	9.402	8.319	11.54	11.63	30.06	22.52
Sand, Fine (#230) (d)	GS-Fsand	%	87.2	30.8	8.9 L	34.2	12.3	11.4	15.6	15.2	37.2	27.6
Sand, Medium	GS-Msand	%	6.0	1.1	0.1	0.3	0.2	0.1	0.2	0.2	0.9	0.3
Silt (#200) (d)	GS-Silt-200	%	5.176	67.56	75.89	54.72	71.59	71.78	68.65	70.46	60.33	60.57
Silt (#230) (d)	GS-Silt	%	4.8	62.9	73.6	50.7	68.7	68.7	64.6	66.9	53.2	55.5
Percent Fines (e)	GS-FINES	%	7.076	72.76	93.19	69.42	90.29	91.48	88.05	88.06	68.73	77.07
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	58 J	3900	32000	30000	39000	33000	37000	35000	49000	47000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S146	SC-S146	SC-S146	SC-S146	SC-S150	SC-S150	SC-S150	SC-S150	SC-S150	SC-S150
			Sample ID	PDI-SC-S146-4TO5	PDI-SC-S146-5TO7	PDI-SC-S146-7TO8	PDI-SC-S146-8TO9.1	PDI-SC-S150-0TO2	PDI-SC-S150-11.1TO12.5	PDI-SC-S150-2TO4	PDI-SC-S150-4TO6	PDI-SC-S150-4TO6D	PDI-SC-S150-6TO7.7
			Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018
			Sample Type Code	N	N	N	N	N	N	N	N	FD	N
			Depth	4-5 ft	5-7 ft	7-8 ft	8-9.1 ft	0-2 ft	11.1-12.5 ft	2-4 ft	4-6 ft	4- ft	6-7.7 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.54 J	0.016	0.0015 J	0.0019 J	0.22 J	0.0018 J	0.16	0.22	0.17	0.48 J
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	2.2 J	0.089	0.0012 J	0.00061 J	3.1 J	0.00070 J	1.5 J	2.5 J	0.97 J	4.6 J
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.99 J	0.044	0.00042 J+	0.00029 J+	1.2 J	0.00046 J+	0.72 J	1.1 J	0.47 J	1.9 J
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.0049	0.00032 JN	0.00035 J+	< 0.00012 U	0.0018 JN	< 0.000077 U	0.0015 JN	0.0026 JN	0.0022 J	0.0067
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	6.4 J	0.21	0.0017 J	0.00099 J	10 J	0.0014 J	5.4 J	6.5 J	2.6 J	11 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.020	0.00071 J	< 0.000086 U	< 0.00011 U	0.0057	< 0.000075 U	0.0058	0.014	0.011	0.028
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	1.7 J	0.071	0.00066 JN	0.00041 J	2.4 J	0.00050 J	1.4 J	2.0 J	0.74 J	3.1 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0084	0.00063 J	0.00018 J	< 0.00011 U	0.0024 JN	0.00026 J	0.0027 JN	0.0062	0.0057	0.015
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	0.086 J	0.0044	< 0.00068 U	< 0.00065 U	0.14 J	< 0.00059 U	0.080 J	0.069 J	0.034 J	0.15 J
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.0027 J	< 0.00013 U	< 0.000071 U	< 0.000082 U	< 0.00039 U	< 0.000067 U	< 0.00037 U	0.0017 JN	0.0015 J	0.0060
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	4.1 J	0.098	0.00096 J+	0.00079 J+	5.8 J	0.0011 J+	2.9 J	3.2 J	1.6 J	5.4 J
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.31 J	0.010	< 0.00012 U	< 0.00014 U	0.33 J	< 0.000081 U	0.16 J	0.28 J	0.11 J	0.42 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	1.7 J	0.031	0.00036 J+	0.00028 J+	2.9 J	0.00043 J+	0.90 J	1.2 J	0.67 J	2.0 J
2,3,7,8-TCDD		1746-01-6	µg/kg	0.0021	< 0.000092 U	< 0.000086 U	< 0.00010 U	0.00062 JN	< 0.000056 U	0.00043 JN	< 0.0011 UJ	0.00077 JN	< 0.046 UJ
2,3,7,8-TCDF		51207-31-9	µg/kg	2.3 J	0.042	0.00056 J+	0.00047 J+	4.4 J	0.00095 J+	1.0 J	1.8 J	1.3 J	3.6 J
OCDD		3268-87-9	µg/kg	8.1 J	0.23	0.018	0.019	2.5	0.011	1.8	2.2	1.8	4.4 J
OCDF		39001-02-0	µg/kg	4.3 J	0.14	0.0025 J	0.0015 J	3.2	0.0013 J	2.5	3.4 J	2.0 J	6.9 J
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	1.8	0.048	0.00056	0.00038	2.8	0.00054	1.2	1.6	0.75	2.7
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	1.8	0.048	0.0005	0.00038	2.8	0.00054	1.2	1.6	0.75	2.7
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	1.8	0.048	0.00045	0.00033	2.8	0.00051	1.2	1.6	0.75	2.7
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 34 UJ	< 27 UJ	< 26 UJ	< 26 UJ	< 220 UJ	< 2.6 UJ	< 190 UJ	< 200 UJ	< 210 UJ	< 190 UJ
Aroclor 1221		11104-28-2	µg/kg	< 34 UJ	< 27 UJ	< 26 UJ	< 26 UJ	< 220 UJ	< 2.6 U	< 190 UJ	< 200 UJ	< 210 UJ	< 190 UJ
Aroclor 1232		11141-16-5	µg/kg	< 34 UJ	< 27 UJ	< 26 UJ	< 26 UJ	< 220 UJ	< 2.6 UJ	< 190 UJ	< 200 UJ	< 210 UJ	< 190 UJ
Aroclor 1242		53469-21-9	µg/kg	< 34 U	< 27 U	< 26 U	< 26 U	< 220 U	< 2.6 UJ	< 190 U	< 200 U	< 210 U	< 190 U
Aroclor 1248		12672-29-6	µg/kg	280 J	< 27 UJ	< 26 UJ	< 26 UJ	< 220 UJ	< 2.6 UJ	< 190 UJ	< 200 UJ	< 210 UJ	< 190 UJ
Aroclor 1254		11097-69-1	µg/kg	< 34 U	< 27 U	< 26 U	< 26 U	< 220 U	< 2.6 U	< 190 U	< 200 U	< 210 U	< 190 U
Aroclor 1260		11096-82-5	µg/kg	< 34 U	< 27 U	< 26 U	< 26 U	< 220 U	< 2.6 U	< 190 U	< 200 U	< 210 U	< 190 U
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	280	< 27 UJ	< 26 UJ	< 26 UJ	< 220 UJ	< 2.6 UJ	< 190 UJ	< 200 UJ	< 210 UJ	< 190 UJ
Pesticides													
2,4-DDD		53-19-0	µg/kg	186 J	47.6 J	< 0.066 UJ	< 0.15 UJ	257 J	3.63 J	118 J	579 J	581	1880
2,4-DDE		3424-82-6	µg/kg	21.8 J	1.59 J	< 0.063 U	< 0.10 U	6.36 J	< 0.065 U	4.17 J	24.3 J	18.9 J	23.9 J
2,4-DDT		789-02-6	µg/kg	25.3 J	4.26 J	< 0.096 UJ	< 0.13 UJ	159 J	< 0.093 UJ	244 J	506 J	25.2 J	162
4,4'-DDD		72-54-8	µg/kg	611 J	138 J	0.759 J	0.528 J	473 J	5.11 J	308 J	1250 J	1210	3150
4,4'-DDE		72-55-9	µg/kg	131	6.92	< 0.080 U	< 0.13 U	40.5	< 0.083 U	33.9	128 J	74.3 J	94.3 J
4,4'-DDT		50-29-3	µg/kg	559 J	69.8 J	< 0.17 UJ	< 0.30 UJ	3800 J	< 0.16 UJ	938 J	15500 J	714 J	2720
DDx	(b)	T_DDx (PDI)	µg/kg	1530	268	0.844	0.678	4740	8.82	1650	18000	2620	8030
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	390	36	8.6	33	32	1.3	27 J	27	20	160
Acenaphthene		83-32-9	µg/kg	310	77	26	70	55	3.7	48 J	85	71	330
Acenaphthylene		208-96-8	µg/kg	110	41	16	47	96	1.5	26 J	31	21	140
Anthracene		120-12-7	µg/kg	570	78	32	210	120	7.6	89 J	220	200	530
Benz(a)anthracene		56-55-3	µg/kg	2500	230	47	260	600	9.0	290 J	420	450	1400
Benzo(a)pyrene		50-32-8	µg/kg	1500	230	39	220	410	5.7	230 J	350	310	1600
Benzo(b)fluoranthene		205-99-2	µg/kg	2700	240	33	210	1200	5.7	530 J	600	590	2200
Benzo(g,h,i)perylene		191-24-2	µg/kg	800	210	25	140	260	3.3	170 J	180	170	1100
Benzo(k)fluoranthene		207-08-9	µg/kg	960	76	15	85	340	2.4	150 J	200	180	810
Chrysene		218-01-9	µg/kg	2700	250	53	260	1300	9.1	560 J	640	640	2100
Dibenz(a,h)anthracene		53-70-3	µg/kg	210	17	5.5 J	40	110	0.84 J	68 J	85	76	210
Fluoranthene		206-44-0	µg/kg	4300	430	71	530	3300	36	990 J	960	950	3900
Fluorene		86-73-7	µg/kg	410	49	13	51	100	2.8	69 J	130	100	460
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	970	170	21	150	380	3.9	250 J	230	220	1400
Naphthalene		91-20-3	µg/kg	550	120	33	97	69	3.8	58 J	130	88	600
Phenanthrene		85-01-8	µg/kg	3700	340	90	410	380	17	300 J	190	180	710
Pyrene		129-00-0	µg/kg	4200	700	150	650	2600	45	780 J	820	810	4400
Total PAHs	(b)	T_PAH (PDI)	µg/kg	27000	3300	680	3500	11000	160	4600	5300	5100	22000
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	2300	310	55	320	740	8.4	410	560	510	2300

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S146	SC-S146	SC-S146	SC-S146	SC-S150	SC-S150	SC-S150	SC-S150	SC-S150	SC-S150
		Sample ID	PDI-SC-S146-4TO5	PDI-SC-S146-5TO7	PDI-SC-S146-7TO8	PDI-SC-S146-8TO9.1	PDI-SC-S150-0TO2	PDI-SC-S150-11.1TO12.5	PDI-SC-S150-2TO4	PDI-SC-S150-4TO6	PDI-SC-S150-4TO6D	PDI-SC-S150-6TO7.7
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018
		Sample Type Code	N	N	N	N	N	N	N	N	FD	N
		Depth	4-5 ft	5-7 ft	7-8 ft	8-9.1 ft	0-2 ft	11.1-12.5 ft	2-4 ft	4-6 ft	4- ft	6-7.7 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	56.9	72.4	73.9	74.8	46.3	73.8	50.4	48.0	48.3	51.2
Total Solids@70C	TSOLID70	%	63	73	75	79	51	75	57	58	57	54
Total Solids (%)	%SOLID	%	56.2	70	73.6	77.6	48	72	50.8	48.8	51	55.1
Clay	GS-Clay	%	16.5	4.6	1.8	6.0	11.8	5.6	14.1	13.0		17.5
Gravel	GS-Gravel	%	0	0	0	0	0	0	0	0		0.3
Sand, Coarse	GS-Csand	%	0.3	0	0	0.1	0	0.3	0	0		0.6
Sand, Fine (#200) (d)	GS-Fsand-200	%	21.77	69.36	82.36	43.22	19.59	19.42	22.02	11.75		18.15
Sand, Fine (#230) (d)	GS-Fsand	%	26.7	72.3	83.8	45.5	26.1	31.6	28.7	15.1		22.7
Sand, Medium	GS-Msand	%	0.5	2.8	8.9	9.0	0.3	3.0	0.2	0.2		0.9
Silt (#200) (d)	GS-Silt-200	%	60.92	23.13	6.933	41.87	68.40	71.67	63.57	75.04		62.44
Silt (#230) (d)	GS-Silt	%	56.0	20.2	5.5	39.6	61.9	59.5	56.9	71.7		57.9
Percent Fines (e)	GS-FINES	%	77.42	27.73	8.733	47.87	80.2	77.27	77.67	88.04		79.94
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	52000	8700	2300	3700	48000	820 J	43000	49000	49000	77000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S150	SC-S150	SC-S151	SC-S151	SC-S151	SC-S151	SC-S151	SC-S151	SC-S154	SC-S154
		Sample ID	PDI-SC-S150-7.7TO9.7	PDI-SC-S150-9.7TO11.1	PDI-SC-S151-0TO2	PDI-SC-S151-10TO12	PDI-SC-S151-2TO4	PDI-SC-S151-4TO6	PDI-SC-S151-6TO8	PDI-SC-S151-8TO10	PDI-SC-S154-0TO1	PDI-SC-S154-1TO3
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018	7/24/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	7.7-9.7 ft	9.7-11.1 ft	0-2 ft	10-12 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-1 ft	1-3 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.0030 J	0.0016 J	0.17	0.073	0.15	0.15	0.30	0.23 J	0.14	0.077
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.020	0.0016 J	0.29	0.43	0.20	0.18	3.0 J	2.8 J	0.058	0.053
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.011	0.00062 JN	0.19	0.076	0.076	0.065	1.2 J	1.1 J	0.019	0.018
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	< 0.00016 U	< 0.00020 U	0.0011 J	0.00092 J	0.0013 J	0.0012 JN	0.0034 J	0.0023 J	0.0017 J	0.00089 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.074	0.0032	1.0	0.57	0.67	0.67	8.2 J	7.8 J	0.13	0.12
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	< 0.00016 U	0.00018 J	0.0043 J	0.0064	0.0065	0.010	0.014	0.011	0.0057	0.0029 J
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.018	0.00091 J	0.19	0.13	0.15	0.16	2.1 J	2.0 J	0.026	0.027
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	< 0.00015 U	0.00029 J	0.0030 J	0.0022 J	0.0035 J	0.0038 J	0.0061 JN	0.0045	0.0041 J	0.0020 JN
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.0014 J	< 0.00057 U	0.023	0.0087	0.0077	0.0084	0.11 J	0.12 J	0.0019 J	0.0013 J
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	< 0.00020 U	< 0.000094 U	0.00050 J	0.0010 J	0.00069 J	0.0011 J	0.0021 J	< 0.00076 U	0.00090 JN	< 0.00011 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.084	0.0022 J	0.57	0.44 J	0.52	0.43	4.5 J	5.0 J	0.091	0.073
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0034	< 0.00019 U	0.017	0.020	0.028	0.017	0.28 J	0.29 J	0.0037 J	0.0034
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.044	0.0011 J	0.14	0.19 J	0.23	0.17	1.6 J	2.0 J	0.037	0.026
2,3,7,8-TCDD	1746-01-6	µg/kg	< 0.00013 U	< 0.000091 U	0.00032 JN	0.00045 JN	0.00038 JN	0.00036 JN	0.0011	0.0017	0.00040 JN	< 0.00017 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.10	0.0019 J	0.27	0.39 J	0.32	0.37 J	2.6 J	3.3 J	0.098	0.064
OCDD	3268-87-9	µg/kg	0.036	0.014	1.4	1.0	1.4	1.3	3.2	2.7	1.2	0.76
OCDF	39001-02-0	µg/kg	0.045	0.0034 J	0.49	0.41	0.33	0.22	4.5 J	3.1	0.13	0.098
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.036	0.0011	0.22	0.19	0.21	0.19	2	2.1	0.045	0.034
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.036	0.0011	0.22	0.19	0.21	0.19	2	2.1	0.044	0.034
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.036	0.0011	0.22	0.19	0.21	0.19	2	2.1	0.044	0.034
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 2.6 UJ	< 2.6 UJ	< 4.1 UJ	< 160 UJ	< 3.9 UJ	< 3.8 UJ	< 180 UJ	< 160 UJ	< 3.8 U	< 2.4 U
Aroclor 1221	11104-28-2	µg/kg	< 2.6 U	< 2.6 U	< 4.1 UJ	< 160 UJ	< 3.9 UJ	< 3.8 UJ	< 180 UJ	< 160 UJ	< 3.8 U	< 2.4 U
Aroclor 1232	11141-16-5	µg/kg	< 2.6 UJ	< 2.6 UJ	< 4.1 UJ	< 160 UJ	< 3.9 UJ	< 3.8 UJ	< 180 UJ	< 160 UJ	51 J	< 2.4 U
Aroclor 1242	53469-21-9	µg/kg	< 2.6 UJ	< 2.6 UJ	< 4.1 UJ	< 160 U	< 3.9 UJ	< 3.8 UJ	< 180 U	< 160 U	32 J	< 2.4 U
Aroclor 1248	12672-29-6	µg/kg	< 2.6 UJ	< 2.6 UJ	< 4.1 U	< 160 UJ	21	180 J	2000 J	< 160 UJ	< 3.8 U	< 2.4 U
Aroclor 1254	11097-69-1	µg/kg	< 2.6 U	< 2.6 U	< 4.1 U	< 160 U	< 3.9 U	< 3.8 U	< 180 U	< 160 U	< 3.8 U	12 J
Aroclor 1260	11096-82-5	µg/kg	< 2.6 U	< 2.6 U	< 4.1 U	< 160 U	< 3.9 U	< 3.8 U	< 180 U	< 160 U	20 J	< 2.4 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	< 2.6 UJ	< 2.6 UJ	< 4.1 UJ	< 160 UJ	21	180	2000	< 160 UJ	100	12
Pesticides												
2,4-DDD	53-19-0	µg/kg	125	8.53 J	31.6 J	13100 J	134 J	339 J	6940 J	34900 J	483	388
2,4-DDE	3424-82-6	µg/kg	1.11 J	0.187 J	1.41 J	233 J	11.1 J	14.8 J	160 J	490 J	51.4	38
2,4-DDT	789-02-6	µg/kg	9.37 J	0.718 J	15.4 J	1210 J	21.9 J	38.0 J	620 J	10300 J	240	1130
4,4'-DDD	72-54-8	µg/kg	292	12.8 J	69.7 J	25900 J	358 J	887 J	14300 J	60600 J	937	830
4,4'-DDE	72-55-9	µg/kg	2.56	0.316 J	12.5	471	54.3	58.7	334	933	533	457
4,4'-DDT	50-29-3	µg/kg	1120	6.05 J	123 J	8860 J	1350 J	1770 J	9830 J	101000 J	977	8000 J
DDx (b)	T_DDx (PDI)	µg/kg	1550	28.6	254	49800	1930	3110	32200	208000	3220	10800
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	10	81	18 J	250	430	190	100	350	< 180 U	9.8 J
Acenaphthene	83-32-9	µg/kg	26	82	25	270	53	99	280	850	< 180 U	< 61 U
Acenaphthylene	208-96-8	µg/kg	45	29	17 J	80	28	48	65	150	73 J	23 J
Anthracene	120-12-7	µg/kg	120	130	56	300	98	170	390	800	60 J	12 J
Benz(a)anthracene	56-55-3	µg/kg	420	130	180	330	180	230	740	900	230	43 J
Benzo(a)pyrene	50-32-8	µg/kg	370	99	160	450	160	170	510	990	170 J	68
Benzo(b)fluoranthene	205-99-2	µg/kg	320	86	320	480	250	240	900	1400	220 J	100 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	190	47	120	450	120	110	260	730	110 J	55 J
Benzo(k)fluoranthene	207-08-9	µg/kg	160	37	79	150	86	73	330	570	100 J	33 J
Chrysene	218-01-9	µg/kg	460	140	250	450	240	340	940	1300	390	110 J
Dibenz(a,h)anthracene	53-70-3	µg/kg	58	12	25	110	28	23	66	110	36 J	16 J
Fluoranthene	206-44-0	µg/kg	500	240	430	1200	440	590	2300	3100	330	120
Fluorene	86-73-7	µg/kg	19	66	49	230	90	160	380	840	22 J	8.8 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	170	52	150	440	130	120	390	1000	130 J	58 J
Naphthalene	91-20-3	µg/kg	41	230	35	1300	1500	190	860	1600	82 J	26 J
Phenanthrene	85-01-8	µg/kg	160	310	170	760	310	330	1500	1400	140 J	50 J
Pyrene	129-00-0	µg/kg	700	350	380	1500	420	660	1900	3400	350	170
Total PAHs (b)	T_PAH (PDI)	µg/kg	3800	2100	2500	8800	4600	3700	12000	19000	2500	930
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	520	140	250	690	250	250	780	1400	270	100

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S150	SC-S150	SC-S151	SC-S151	SC-S151	SC-S151	SC-S151	SC-S151	SC-S154	SC-S154
		Sample ID	PDI-SC-S150-7.7TO9.7	PDI-SC-S150-9.7TO11.1	PDI-SC-S151-0TO2	PDI-SC-S151-10TO12	PDI-SC-S151-2TO4	PDI-SC-S151-4TO6	PDI-SC-S151-6TO8	PDI-SC-S151-8TO10	PDI-SC-S154-0TO1	PDI-SC-S154-1TO3
		Sample Date	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	7/24/2018	7/24/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	7.7-9.7 ft	9.7-11.1 ft	0-2 ft	10-12 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-1 ft	1-3 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	76.2	76.4	48.0	60.6	50.8	52.7	55.1	60.7	51.8	78.8
Total Solids@70C	TSOLID70	%	76	76	49	62	53	53	55	61	52	77
Total Solids (%)	%SOLID	%	77.4	77	49.3	62.2	51.7	52.6	54.2	62.1	51.4	77.5
Clay	GS-Clay	%	3.7	3.5	16.7	14.9	19.2	21.9	17.7	17.5	13.2	4.9
Gravel	GS-Gravel	%	0	0	0	0	0	0	0.2	0.4	0.2	4.8
Sand, Coarse	GS-Csand	%	0.2	0.1	0	0.1	0.1	0	0.2	1.1	0.2	2.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	76.1	62.6	10.43	35.85	9.553	10.51	16.54	33.57	14.1	70.01
Sand, Fine (#230) (d)	GS-Fsand	%	76.6	65.7	14.5	38.3	12.5	14.0	21.2	37.3	16.7	71.8
Sand, Medium	GS-Msand	%	15.8	12.8	0.2	4.2	0.2	0.2	0.6	4.0	0.9	9.3
Silt (#200) (d)	GS-Silt-200	%	4.098	20.99	72.76	44.84	70.94	67.38	64.75	43.42	71.29	8.882
Silt (#230) (d)	GS-Silt	%	3.6	17.9	68.7	42.4	68.0	63.9	60.1	39.7	68.7	7.1
Percent Fines (e)	GS-FINES	%	7.798	24.49	89.46	59.74	90.14	89.28	82.45	60.92	84.49	13.782
Liquid Limit	GS-LL	None					73					
Plasticity Index	GS-PI	None					34					
Plasticity Limit	GS-PL	None					39					
Total Organic Carbon	TOC	mg/kg	2500	4100	52000	52000	57000	50000	51000	57000	28000	4200

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S154	SC-S154	SC-S155	SC-S155	SC-S155	SC-S157	SC-S157	SC-S157	SC-S157
			Sample ID	PDI-SC-S154-3TO4	PDI-SC-S154-4TO6	PDI-SC-S155-0TO2.1	PDI-SC-S155-2.1TO4.2	PDI-SC-S155-4.2TO5.3	PDI-SC-S157-0TO2	PDI-SC-S157-10TO12.4	PDI-SC-S157-12.4TO14	PDI-SC-S157-14TO15.9
			Sample Date	7/24/2018	7/24/2018	9/5/2018	9/5/2018	9/5/2018	8/17/2018	8/17/2018	8/17/2018	8/17/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	3-4 ft	4-6 ft	0-2.1 ft	2.1-4.2 ft	4.2-5.3 ft	0-2 ft	10-12.4 ft	12.4-14 ft	14-15.9 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.0021 J	0.0024 J	0.055	0.28	0.0023 J	0.041	0.0014 J	0.0013 JN	0.0012 JN
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	< 0.00022 U	< 0.000077 U	0.012 JN	0.11	0.00042 J+	0.015	< 0.000058 U	< 0.00017 UJ	< 0.00011 UJ
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	< 0.000075 U	0.000051 JN	0.0015 J+	0.024	< 0.00027 U	0.0012 JN	< 0.00031 U	< 0.00027 U	< 0.00012 U
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	< 0.000047 U	< 0.000034 U	0.00075 J	0.0019 J	0.00013 J+	0.00055 JN	< 0.00012 U	< 0.00016 U	< 0.00011 U
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	< 0.000055 U	< 0.000016 U	0.0047	0.081	0.00023 J	0.0045 J	< 0.000064 U	< 0.000065 U	< 0.000045 U
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.000090 J	0.00012 JN	0.0024 J	0.011	0.00017 J+	0.0021 J	< 0.00012 U	< 0.00016 U	< 0.00011 U
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	< 0.000054 U	< 0.000016 U	0.0013 J	0.019	0.00011 J	0.0022 J	< 0.000061 U	< 0.000061 U	0.00010 JN
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00032 J+	0.00037 J	0.0017 J	0.0036	0.00021 JN	0.0014 JN	< 0.00011 U	< 0.00014 U	0.00025 JN
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.000024 U	0.000059 J	0.0013 J+	0.0015 J+	< 0.00085 U	0.0016 JN	< 0.00075 U	< 0.00088 U	< 0.00043 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.000042 U	0.000054 J	0.00038 J	0.0010 J	0.000060 J	< 0.00022 U	< 0.000091 U	< 0.000098 U	< 0.000077 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.000080 J	0.000031 JN	0.0025 J	0.029	0.00029 J+	0.0033 J	0.00016 JN	0.00015 J+	< 0.000061 U
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	< 0.000031 U	< 0.000013 U	0.00042 J	0.0026 J	< 0.000023 U	0.00069 J	< 0.000047 U	< 0.000048 U	< 0.000034 U
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	< 0.000027 U	0.000029 J	0.0012 J	0.010	0.000087 J+	0.0012 J	< 0.000068 U	< 0.000062 U	< 0.000060 U
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000025 U	< 0.000019 U	0.00018 JN	0.00062 J	< 0.000016 U	0.00023 JN	< 0.000080 U	< 0.000085 U	< 0.000080 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.000079 JN	< 0.000042 U	0.0030	0.015	0.00016 J+	0.0014 J+	< 0.000046 U	< 0.00017 U	< 0.000038 U
OCDD		3268-87-9	µg/kg	0.020	0.021	0.48	2.7	0.019	0.50	0.013	0.012	0.014
OCDF		39001-02-0	µg/kg	< 0.00061 U	0.00013 J	0.045	0.44	0.0019 J+	0.032	< 0.00016 U	< 0.00026 U	< 0.00021 U
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.000099	0.00016	0.0034	0.024	0.00027	0.003	0.000068	0.00007	0.000091
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.000091	0.00015	0.0033	0.024	0.00025	0.0024	0.000063	0.000057	0.000044
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.00007	0.00014	0.0032	0.024	0.00021	0.0023	0.000018	0.0000081	0.0000042
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 2.6 U	< 2.6 UJ	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 U	< 2.6 U	< 2.6 U
Aroclor 1221		11104-28-2	µg/kg	< 2.6 UJ	< 2.6 U	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 U	< 2.6 U	< 2.6 U
Aroclor 1232		11141-16-5	µg/kg	< 2.6 UJ	< 2.6 U	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 U	< 2.6 U	< 2.6 U
Aroclor 1242		53469-21-9	µg/kg	< 2.6 U	< 2.6 U	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 UJ	< 2.6 UJ	< 2.6 UJ
Aroclor 1248		12672-29-6	µg/kg	< 2.6 U	< 2.6 UJ	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 UJ	< 2.6 UJ	< 2.6 UJ
Aroclor 1254		11097-69-1	µg/kg	< 2.6 U	< 2.6 U	< 3.5 U	< 2.7 U	< 2.6 U	< 4.0 UJ	< 2.6 UJ	< 2.6 UJ	< 2.6 UJ
Aroclor 1260		11096-82-5	µg/kg	< 2.6 U	< 2.6 U	1.6 J	19 J	< 2.6 U	1.2 J	< 2.6 UJ	< 2.6 UJ	< 2.6 UJ
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 2.6 UJ	< 2.6 UJ	1.6	19	< 2.6 U	1.2	< 2.6 UJ	< 2.6 UJ	< 2.6 UJ
Pesticides												
2,4-DDD		53-19-0	µg/kg	0.0258 J	< 0.18 UJ	4.48	18.3	0.633 J	1.67 J	< 0.15 U	< 0.023 U	< 0.015 U
2,4-DDE		3424-82-6	µg/kg	0.0118 J	< 0.059 U	0.295 J	1.78	0.0410 J	0.24 JN	< 0.14 UJ	< 0.015 U	< 0.014 U
2,4-DDT		789-02-6	µg/kg	0.0501 J	< 0.12 UJ	0.22 JN	1.18 J	< 0.034 U	< 0.12 UJ	< 0.090 UJ	< 0.023 U	< 0.021 UJ
4,4'-DDD		72-54-8	µg/kg	0.0437 J	< 0.14 UJ	9.48	57.6	1.47	2.61	< 0.091 U	0.029 JN	< 0.035 U
4,4'-DDE		72-55-9	µg/kg	0.0385 J	< 0.086 U	3.06	7.42	0.206 J	2.33 J	< 0.18 UJ	< 0.019 U	< 0.018 U
4,4'-DDT		50-29-3	µg/kg	0.19 J	< 0.23 UJ	0.844 J	2.86	0.210 J	< 0.31 UJ	< 0.25 UJ	< 0.040 U	< 0.035 UJ
DDx	(b)	T_DDx (PDI)	µg/kg	0.36	< 0.23 UJ	18.4	89.1	2.58	7.01	< 0.25 UJ	0.049	< 0.035 UJ
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	< 1.3 U	2.2	9.1 J	11 J	2.2	27	0.97 J	1.2 J	1.9
Acenaphthene		83-32-9	µg/kg	0.38 J	< 1.3 U	9.7 J	5.1 J	3.8	24	0.32 J	0.48 J	< 1.3 U
Acenaphthylene		208-96-8	µg/kg	0.51 J	< 1.3 U	5.3 J	< 13 U	1.9	13 J	< 1.2 U	< 1.3 U	< 1.3 U
Anthracene		120-12-7	µg/kg	0.19 J	< 1.3 U	15 J	13	4.6	25	0.30 J	0.49 J	0.21 J
Benz(a)anthracene		56-55-3	µg/kg	1.5	0.25 J	32	38	5.9	32	0.62 J	0.56 J	0.63 J
Benzo(a)pyrene		50-32-8	µg/kg	1.3	< 1.3 UJ	32	28	15	27	0.56 J	36	< 1.3 U
Benzo(b)fluoranthene		205-99-2	µg/kg	1.4 J	0.33 J	49	38	13	39	1.3	0.82 J	1.2 J
Benzo(g,h,i)perylene		191-24-2	µg/kg	0.71 J	< 1.3 U	26	21	17	31	1.2	0.90 J	1.4
Benzo(k)fluoranthene		207-08-9	µg/kg	0.58 J	< 1.3 U	15 J	9.2 J	3.7	12 J	0.43 J	0.48 J	0.47 J
Chrysene		218-01-9	µg/kg	1.2 J	< 1.3 U	58	66	6.5	48	0.99 J	0.82 J	1.0 J
Dibenz(a,h)anthracene		53-70-3	µg/kg	0.22 J	< 1.3 U	7.0 J	< 13 U	2.4	< 20 U	< 1.2 U	< 1.3 U	< 1.3 U
Fluoranthene		206-44-0	µg/kg	2.3	0.47 J	100	84	15	130	1.6	2.3	< 1.3 U
Fluorene		86-73-7	µg/kg	0.19 J	0.22 J	21	< 13 U	3.3	33	0.63 J	0.96 J	0.38 J
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	0.82 J	< 1.3 U	45	51	24	26	0.79 J	0.58 J	< 1.3 U
Naphthalene		91-20-3	µg/kg	< 1.3 U	1.5	14 J	12 J	8.2	50	0.67 J	0.86 J	1.3
Phenanthrene		85-01-8	µg/kg	< 1.3 U	< 1.3 U	61	27	18	130	2.1	2.6	1.7
Pyrene		129-00-0	µg/kg	2.4	0.36 J	120	140	32	120	1.4	1.9	0.93 J
Total PAHs	(b)	T_PAH (PDI)	µg/kg	14	6.6	620	560	180	780	15	52	12
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	1.9	0.71	52	47	22	47	1.4	37	0.84

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S154	SC-S154	SC-S155	SC-S155	SC-S155	SC-S157	SC-S157	SC-S157	SC-S157
		Sample ID	PDI-SC-S154-3TO4	PDI-SC-S154-4TO6	PDI-SC-S155-0TO2.1	PDI-SC-S155-2.1TO4.2	PDI-SC-S155-4.2TO5.3	PDI-SC-S157-0TO2	PDI-SC-S157-10TO12.4	PDI-SC-S157-12.4TO14	PDI-SC-S157-14TO15.9
		Sample Date	7/24/2018	7/24/2018	9/5/2018	9/5/2018	9/5/2018	8/17/2018	8/17/2018	8/17/2018	8/17/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	3-4 ft	4-6 ft	0-2.1 ft	2.1-4.2 ft	4.2-5.3 ft	0-2 ft	10-12.4 ft	12.4-14 ft	14-15.9 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	74.2	73.1	54.4	73.9	73.8	49.9	75.3	73.6	74.5
Total Solids@70C	TSOLID70	%	74	73	56	74	74	51	75	75	74
Total Solids (%)	%SOLID	%	75.6	73.4	54.6	73.7	74	47.3	72.6	75.6	74.3
Clay	GS-Clay	%	14.3	22.5	12.1	3.7	5.4	14.2	5.3 L	5.9	7.7
Gravel	GS-Gravel	%	0.9	0	2.6	0.3	3.4	0	0	0	0
Sand, Coarse	GS-Csand	%	0.3	0.6	0.5	0.4	1.1	0.8	0	0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	13.91	6.809	30.64	58.34	42.34	23.16	27.29	7.135	8.04
Sand, Fine (#230) (d)	GS-Fsand	%	18.0	8.3	33.6	59.2	43.7	26.8	36.8	13.3	20.5
Sand, Medium	GS-Msand	%	0.3	0.3	5.5	28.6	10.0	0.8	0	0.1	0
Silt (#200) (d)	GS-Silt-200	%	70.28	69.79	48.65	8.652	37.75	61.03	67.40	86.96	84.25
Silt (#230) (d)	GS-Silt	%	66.2	68.3	45.7	7.8	36.4	57.4	57.9	80.8	71.8
Percent Fines (e)	GS-FINES	%	84.58	92.29	60.75	12.352	43.15	75.23	72.7	92.86	91.95
Liquid Limit	GS-LL	None						76			
Plasticity Index	GS-PI	None						32			
Plasticity Limit	GS-PL	None						44			
Total Organic Carbon	TOC	mg/kg	740 J	440 J	29000	8900	1200 J	59000	8700	11000	11000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S157	SC-S157	SC-S157	SC-S157	SC-S163	SC-S163	SC-S163	SC-S163	SC-S163	SC-S163
			Sample ID	PDI-SC-S157-2TO3.7	PDI-SC-S157-3.7TO6	PDI-SC-S157-6TO8	PDI-SC-S157-8TO10	PDI-SC-S163-0TO2	PDI-SC-S163-10TO12.7	PDI-SC-S163-12.7TO13	PDI-SC-S163-2TO4	PDI-SC-S163-4TO6	PDI-SC-S163-6TO8
			Sample Date	8/17/2018	8/17/2018	8/17/2018	8/17/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	2-3.7 ft	3.7-6 ft	6-8 ft	8-10 ft	0-2 ft	10-12.7 ft	12.7-13 ft	2-4 ft	4-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.031	0.0025 JN	0.0018 J	0.0014 JN	0.21	0.58	0.0028 J	0.24	0.22	0.32
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.020	0.00045 J+	0.00023 JN	0.00033 J+	0.056	0.29 J	0.00034 JN	0.092	0.099	0.089
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.00070 JN	0.00045 JN	0.00068 J+	0.00045 J+	0.0031 J	0.029	< 0.00017 U	0.0037 J	0.0039 J	0.0061
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00036 J+	< 0.00018 U	< 0.00013 U	< 0.00015 U	0.0015 J	0.0053	0.00013 J	0.0019 J	0.0017 J	0.0030 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0017 J	< 0.00011 U	< 0.000086 U	< 0.000072 U	0.0035 J	0.10	< 0.00010 U	0.0046 J	0.0035 J	0.015
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0018 J	< 0.00018 U	< 0.00013 U	< 0.00014 U	0.0061	0.022	0.00016 JN	0.0088	0.0075	0.012
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0016 JN	< 0.000093 U	0.00015 JN	< 0.000069 U	0.0068	0.032	< 0.00010 U	0.011	0.011	0.011
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.00069 JN	0.00047 JN	0.00031 JN	0.00036 JN	0.0042 J	0.0088	0.00035 J	0.0041 J	0.0040 J	0.0065
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00081 U	0.0016 J+	0.0017 J+	0.0012 J+	< 0.00046 U	< 0.0018 U	< 0.000087 U	< 0.00048 U	< 0.00050 U	< 0.00066 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.00023 J	< 0.00012 U	< 0.00012 U	< 0.00013 U	0.00086 J	0.0025 J	< 0.000092 U	0.0012 J	0.00098 J	0.0016 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.0013 J	0.00030 J+	0.00020 JN	< 0.000076 U	0.0015 J	0.062	< 0.000046 U	0.0022 J	0.0014 J	0.0075
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.00036 JN	< 0.000068 U	< 0.000057 U	< 0.000053 U	0.0012 J	0.0068	< 0.000080 U	0.0014 J	0.0012 J	0.0019 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.00080 J	< 0.000075 U	< 0.000074 U	< 0.000074 U	0.00083 JN	0.027	< 0.000052 U	0.0016 J	0.0012 J	0.0036 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00012 JN	< 0.00010 U	< 0.00010 U	< 0.000097 U	0.00073 JN	0.0023	< 0.000084 U	0.0013	0.0013	0.0017
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0019 J+	< 0.000093 U	< 0.00022 U	< 0.00016 U	0.0010	0.037 J	0.00016 JN	0.0029	0.00087 J	0.0047
OCDD	3268-87-9	µg/kg		0.47	0.048 J	0.018	0.014 JN	3.2	7.6 J	0.024	4.3 J	3.7 J	4.9 J
OCDF	39001-02-0	µg/kg		0.019	0.00090 J	< 0.00024 U	< 0.00026 U	0.17	0.68	0.00091 JN	0.28	0.26	0.25
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0022	0.00032	0.00031	0.00025	0.008	0.048	0.00016	0.011	0.01	0.016
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0018	0.00025	0.00026	0.0002	0.0074	0.048	0.00013	0.011	0.01	0.016
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0017	0.00019	0.0002	0.00013	0.007	0.047	0.000083	0.011	0.01	0.016
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.6 U	< 2.7 U	< 2.7 U	< 2.7 U	< 3.8 U	< 34 U	< 2.7 U	< 35 U	< 3.5 U	< 3.4 U
Aroclor 1221	11104-28-2	µg/kg		< 2.6 U	< 2.7 U	< 2.7 U	< 2.7 U	< 3.8 U	< 34 U	< 2.7 UJ	< 35 U	< 3.5 U	< 3.4 UJ
Aroclor 1232	11141-16-5	µg/kg		< 2.6 U	< 2.7 U	< 2.7 UJ	< 2.7 U	8.9 J	40 J	< 2.7 U	35 J	15 J	< 3.4 U
Aroclor 1242	53469-21-9	µg/kg		< 2.6 UJ	< 2.7 UJ	< 2.7 U	< 2.7 UJ	< 3.8 U	< 34 U	< 2.7 U	< 35 U	< 3.5 U	< 3.4 U
Aroclor 1248	12672-29-6	µg/kg		< 2.6 UJ	< 2.7 UJ	< 2.7 U	< 2.7 UJ	< 3.8 U	< 34 U	< 2.7 U	< 35 U	< 3.5 U	78
Aroclor 1254	11097-69-1	µg/kg		< 2.6 UJ	< 2.7 UJ	< 2.7 U	< 2.7 UJ	8.6 J	160 J	< 2.7 U	54 J	36 J	< 3.4 U
Aroclor 1260	11096-82-5	µg/kg		1.6 J	< 2.7 UJ	< 2.7 U	< 2.7 UJ	< 3.8 U	< 34 U	< 2.7 UJ	< 35 U	< 3.5 U	< 3.4 UJ
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		1.6	< 2.7 UJ	< 2.7 UJ	< 2.7 UJ	18	200	< 2.7 UJ	89	51	78
Pesticides													
2,4-DDD	53-19-0	µg/kg		2.05 J	< 0.0494 U	< 0.018 U	< 0.096 U	1.02 J	25.1	< 0.012 U	2.31	1.46 J	2.80
2,4-DDE	3424-82-6	µg/kg		0.191 J	< 0.0040 U	0.012 JN	< 0.092 U	0.663 J	6.18 J	< 0.0109 U	1.02 J	0.747 J	1.05 J
2,4-DDT	789-02-6	µg/kg		< 0.064 UJ	0.0332 J	< 0.027 U	< 0.064 UJ	0.206 J	0.391 J	0.0908 J	0.0911 J	0.0989 J	0.085 JN
4,4'-DDD	72-54-8	µg/kg		2.59 J	< 0.0904 U	0.085 JN	0.12 JN	3.16	41.5	< 0.016 U	7.10	4.80	7.66
4,4'-DDE	72-55-9	µg/kg		0.882 J	< 0.0219 U	0.0434 J	< 0.12 U	8.92	38.6	0.0384 J	15.1	9.98	16.7
4,4'-DDT	50-29-3	µg/kg		0.662 J	2.07 J	0.0835 J	< 0.16 UJ	1.10 J	0.865 J	< 0.167 U	< 0.247 U	< 0.223 U	< 0.278 U
DDx (b)	T_DDx (PDI)	µg/kg		6.41	2.15	0.237	0.20	15.1	113	0.213	25.7	17.2	28.4
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		140	2.1	1.3	0.94 J	70	250	47	140	130	150
Acenaphthene	83-32-9	µg/kg		110	1.2 J	2.0	0.33 J	74	2300	60	110	140	110
Acenaphthylene	208-96-8	µg/kg		17	0.28 J	0.59 J	0.33 J	61	190	58	100	110	76
Anthracene	120-12-7	µg/kg		64	0.96 J	1.8	0.39 J	93	650	110	140	160	210
Benz(a)anthracene	56-55-3	µg/kg		60	1.1 J	2.1	1.0 J	100	500	140	110	160	180
Benzo(a)pyrene	50-32-8	µg/kg		38	0.81 J	2.1	0.78 J	110	420	190	110	130	170
Benzo(b)fluoranthene	205-99-2	µg/kg		48	1.2 J	2.6	1.4	200	520	220	160	180	170
Benzo(g,h,i)perylene	191-24-2	µg/kg		31	1.4	2.0	1.4	93	300	150	100	120	150
Benzo(k)fluoranthene	207-08-9	µg/kg		13	0.23 J	< 1.3 U	0.30 J	< 19 U	81	27	35	46	47
Chrysene	218-01-9	µg/kg		81	1.3	2.6	1.2 J	190	660	170	190	210	250
Dibenz(a,h)anthracene	53-70-3	µg/kg		< 6.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 19 U	33	22	13 J	16 J	13 J
Fluoranthene	206-44-0	µg/kg		250	4.2	6.4	1.7	560	1700	370	490	570	560
Fluorene	86-73-7	µg/kg		140	2.0	1.6	0.49 J	82	1500	46	140	140	130
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		29	0.93 J	2.2	1.1 J	86	330	160	95	110	160
Naphthalene	91-20-3	µg/kg		120	1.9	1.5 J	0.80 J	170	330	92	370	380	360
Phenanthrene	85-01-8	µg/kg		390	4.8	8.3	1.7	540	2800	340	540	610 J	650
Pyrene	129-00-0	µg/kg		230	3.8	6.8	1.7	550	1700	520	530	630	580
Total PAHs (b)	T_PAH (PDI)	µg/kg		1800	29	45	16	3000	14000	2700	3400	3800	4000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		55	1.8	3.4	1.8	160	590	260	160	190	230

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S157	SC-S157	SC-S157	SC-S157	SC-S163	SC-S163	SC-S163	SC-S163	SC-S163	SC-S163
		Sample ID	PDI-SC-S157-2TO3.7	PDI-SC-S157-3.7TO6	PDI-SC-S157-6TO8	PDI-SC-S157-8TO10	PDI-SC-S163-0TO2	PDI-SC-S163-10TO12.7	PDI-SC-S163-12.7TO13	PDI-SC-S163-2TO4	PDI-SC-S163-4TO6	PDI-SC-S163-6TO8
		Sample Date	8/17/2018	8/17/2018	8/17/2018	8/17/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018	7/27/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	2-3.7 ft	3.7-6 ft	6-8 ft	8-10 ft	0-2 ft	10-12.7 ft	12.7-13 ft	2-4 ft	4-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	74.6	72.8	70.9	73.2	52.2	58.1	71.8	52.4	55.7	56.0
Total Solids@70C	TSOLID70	%	75	73	73	75	53	60	75	55	58	57
Total Solids (%)	%SOLID	%	68.8	74	70.8	75.3	52.7	58.1	72.7	53.6	55.8	55.6
Clay	GS-Clay	%	3.7	1.9	3.8	4.4	12.2	20.8	7.7	14.3	13.7	18.2
Gravel	GS-Gravel	%	0	1.7	0	0	0	0.5	0	0.1	0.1	0
Sand, Coarse	GS-Csand	%	0.2	0.7	0.2	0	0.1	0.9	0.1	0	0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	72.1	29.13	44.98	34.11	13	5.3	13.8	9.3	11.9	7.0
Sand, Fine (#230) (d)	GS-Fsand	%	74.6	41.1	58.1	44.3	17.5	6.7	17.9	13.3	16.7	9.9
Sand, Medium	GS-Msand	%	1.8	0.5	0	0	0.5	0.2	0.1	0.2	0.2	0.1
Silt (#200) (d)	GS-Silt-200	%	22.29	66.06	51.11	61.48	74.3	72.2	78.4	76.2	74.1	74.7
Silt (#230) (d)	GS-Silt	%	19.8	54.1	38.0	51.3	69.8	70.8	74.3	72.2	69.3	71.8
Percent Fines (e)	GS-FINES	%	25.99	67.96	54.91	65.88	86.5	93	86.1	90.5	87.8	92.9
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	15000	1200 J	1400 J	6200	25000	32000	8500	34000	30000	34000

Notes:

a. Qualifiers:
- J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
- +/- = Indicates the result may be biased high/low
- JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U = Not detected at detection limit shown.
- UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S163	SC-S172	SC-S172	SC-S172	SC-S172	SC-S172	SC-S176	SC-S176	SC-S176	SC-S176
			Sample ID	PDI-SC-S163-8TO10	PDI-SC-S172-0TO2	PDI-SC-S172-2TO4	PDI-SC-S172-2TO4D	PDI-SC-S172-4TO6	PDI-SC-S172-6TO8.1	PDI-SC-S176-0TO2	PDI-SC-S176-2TO4	PDI-SC-S176-4TO5.5	PDI-SC-S176-5.5TO7.5
			Sample Date	7/27/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018
			Sample Type Code	N	N	N	FD	N	N	N	N	N	N
			Depth	8-10 ft	0-2 ft	2-4 ft	2- ft	4-6 ft	6-8.1 ft	0-2 ft	2-4 ft	4-5.5 ft	5.5-7.5 ft
Chemical		**CAS_RN**	**Units**										
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.45	0.46 J	0.47 J	0.37	0.044	0.037	0.064	0.073	0.016	0.0028 J
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.27	0.059	0.078	0.062	0.023	0.025	0.050	0.075	0.028	0.0043
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.0084	< 0.0029 U	0.0047 JN	0.0039 J	0.00084 J	0.00095 J	< 0.00042 U	< 0.00061 UJ	< 0.00019 U	0.00044 J+
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.0040 J	0.0029 J	0.0031 JN	0.0025 J	0.00048 J+	0.00045 J+	0.00057 JN	0.00073 J	0.00022 J	0.00011 JN
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.014	0.0057 J	0.0071	0.0061	0.0013 J	0.0012 J	0.0013 JN	< 0.00091 U	< 0.00020 U	0.00025 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.019	0.017	0.020	0.015	0.0019 J	0.0019 J	0.0027 J	0.0039 J	0.00092 J	0.00018 JN
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.028	0.0029 J	0.0059	0.0047	0.0018 J	0.0023 J	0.0042	0.0053	0.0016 J	< 0.000056 U
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0080	0.0084	0.0080	0.0061	0.0010 J	0.00099 J	0.0012 J	0.0015 J	0.00049 J	0.00015 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.0010 U	0.00097 J	< 0.00043 U	< 0.00029 U	< 0.00010 U	< 0.000088 U	< 0.00062 U	< 0.00055 U	0.00066 J+	< 0.00058 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.0019 JN	< 0.00050 U	0.0012 JN	0.0013 J	0.00027 J	0.00031 J	0.00041 J	0.00061 J	0.00017 J	0.000032 JN
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.0063	0.0016 JN	0.0021 J	0.0025 J	0.00031 J	0.00035 JN	0.00062 J	< 0.00053 U	0.00019 JN	0.000088 J+
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.0035 J	0.0017 J	0.0021 J	0.0016 J	0.00049 J	0.00048 J	0.00085 J	0.0012 J	0.00046 J	0.000080 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0043 J	0.0013 JN	0.0024 J	0.0021 J	0.00043 J	0.00028 JN	0.00057 J	0.0012 J	< 0.00013 U	0.000052 JN
2,3,7,8-TCDD		1746-01-6	µg/kg	0.0011	0.00046 JN	0.0011 JN	0.00052 JN	0.00026 J	0.00014 JN	0.00018 JN	0.00026 JN	< 0.000023 U	< 0.000015 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.0040	0.0046 J	0.0028	0.0026	0.00052 J	0.00055 J	0.00051 J	0.0012	0.00063 J	0.00010 JN
OCDD		3268-87-9	µg/kg	6.3 J	3.7	4.2 J	3.3	0.60	0.60	0.92	1.1	0.24	0.040
OCDF		39001-02-0	µg/kg	0.42	0.20	0.26	0.21	0.045	0.044	0.14	0.18	0.035	0.0061 J
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.022	0.012	0.015	0.012	0.0023	0.0022	0.0034	0.0045	0.0012	0.00026
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.021	0.011	0.014	0.012	0.0023	0.002	0.0031	0.0043	0.0012	0.00017
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.02	0.011	0.013	0.011	0.0023	0.0019	0.003	0.0042	0.0012	0.00014
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016		12674-11-2	µg/kg	< 3.6 U	< 9.6 U	< 3.7 U	< 3.8 UJ	< 2.8 U	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1221		11104-28-2	µg/kg	< 3.6 UJ	< 9.6 U	< 3.7 U	< 3.8 UJ	< 2.8 U	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1232		11141-16-5	µg/kg	< 3.6 U	< 9.6 U	< 3.7 U	< 3.8 UJ	< 2.8 U	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1242		53469-21-9	µg/kg	< 3.6 U	< 9.6 U	< 3.7 U	< 3.8 UJ	< 2.8 U	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1248		12672-29-6	µg/kg	40	< 9.6 U	< 3.7 U	< 3.8 UJ	< 2.8 U	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1254		11097-69-1	µg/kg	< 3.6 U	150 J	160 J	140 J	29 J	< 2.9 U	< 3.1 U	< 3.3 U	< 3.0 U	< 2.6 U
Aroclor 1260		11096-82-5	µg/kg	< 3.6 UJ	< 9.6 UJ	< 3.7 U	< 3.8 UJ	< 2.8 U	7.7	17	33 J	9.7	0.97 J
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	40	150	160	140	29	7.7	17	33	9.7	0.97
Pesticides													
2,4-DDD		53-19-0	µg/kg	2.47	2.68	3.28	3.76	3.87	1.32 J	1.06 J	3.54	0.140 J	0.0738 J
2,4-DDE		3424-82-6	µg/kg	0.732 J	0.286 J	0.574 J	0.603 J	0.275 J	0.336 J	0.575 J	0.762 J	0.0374 J	0.0312 J
2,4-DDT		789-02-6	µg/kg	0.062 JN	< 0.224 U	3.28	3.03	< 0.225 U	0.256 J	< 0.025 UJ	< 0.081 UJ	< 0.020 UJ	< 0.021 UJ
4,4'-DDD		72-54-8	µg/kg	5.80	4.71	9.80	10.1	10.9	2.65	2.72	6.40	0.256 J	0.155 J
4,4'-DDE		72-55-9	µg/kg	8.48	4.60	9.94	10.3	2.72	1.37 J	3.98	4.28 J	0.274 J	0.0984 J
4,4'-DDT		50-29-3	µg/kg	< 0.161 U	0.595 J	11.3	9.71	4.26	0.890 J	0.138 J	0.510 J	0.11 JN	0.084 JN
DDx	(b)	T_DDx (PDI)	µg/kg	17.6	13	38.2	37.5	22.1	6.82	8.49	15.5	0.827	0.453
Semivolatile Organics													
2-Methylnaphthalene		91-57-6	µg/kg	180	44 J	110	130	190	150	100	140	43	15
Acenaphthene		83-32-9	µg/kg	150	120 J	130	110	210	250	64	140	28	13
Acenaphthylene		208-96-8	µg/kg	190	110 J	180	110	140	130	73	110	46	16
Anthracene		120-12-7	µg/kg	300	130 J	290	200	270	270	95	160	51	17
Benz(a)anthracene		56-55-3	µg/kg	250	200 J	1000 J	320 J	450	400	150	300	100	13
Benzo(a)pyrene		50-32-8	µg/kg	250	210 J	750 J	240 J	360	410	120	230	87	16
Benzo(b)fluoranthene		205-99-2	µg/kg	290	290 J	890 J	340 J	400	440	170	310	110	17 J
Benzo(g,h,i)perylene		191-24-2	µg/kg	230	170 J	470 J	250 J	250	390	140	270	110	15
Benzo(k)fluoranthene		207-08-9	µg/kg	120	150 J	280 J	110 J	120	120	48	96	35	5.9 J
Chrysene		218-01-9	µg/kg	340	320 J	980 J	380 J	400	380	180	360	130	15
Dibenz(a,h)anthracene		53-70-3	µg/kg	21	45 J	110 J	38 J	52	43	18 J	27 J	11 J	2.7 J
Fluoranthene		206-44-0	µg/kg	820	590 J	1600 J	830 J	1000	1400	430	850	290	50
Fluorene		86-73-7	µg/kg	270	56 J	120	110	140	140	62	120	37	9.6
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	210	160 J	450 J	220 J	220	310	140	190	77	15
Naphthalene		91-20-3	µg/kg	460	220 J	310	440	620	550	250	280	100	64
Phenanthrene		85-01-8	µg/kg	980	440 J	900	710	880	1200	450	840	300	64
Pyrene		129-00-0	µg/kg	920	730 J	2200 J	970 J	1400	1800	560	1100	390	70
Total PAHs	(b)	T_PAH (PDI)	µg/kg	6000	4000	11000	5500	7100	8400	3100	5500	1900	420
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	350	320	1100	370	520	570	180	340	130	23

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S163	SC-S172	SC-S172	SC-S172	SC-S172	SC-S172	SC-S176	SC-S176	SC-S176	SC-S176
		Sample ID	PDI-SC-S163-8TO10	PDI-SC-S172-0TO2	PDI-SC-S172-2TO4	PDI-SC-S172-2TO4D	PDI-SC-S172-4TO6	PDI-SC-S172-6TO8.1	PDI-SC-S176-0TO2	PDI-SC-S176-2TO4	PDI-SC-S176-4TO5.5	PDI-SC-S176-5.5TO7.5
		Sample Date	7/27/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	FD	N	N	N	N	N	N
		Depth	8-10 ft	0-2 ft	2-4 ft	2- ft	4-6 ft	6-8.1 ft	0-2 ft	2-4 ft	4-5.5 ft	5.5-7.5 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	55.3	41.4	52.6	51.7	68.9	67.9	61.1	59.2	66.0	73.6
Total Solids@70C	TSOLID70	%	57	43	54	50	72	72	61	60	68	75
Total Solids (%)	%SOLID	%	54.6	42.3	53.8	51.5	67.3	69.7	55.4	57.1	66.3	73
Clay	GS-Clay	%	13.4	26.0	19.7		3.7	9.5	11.6	14.2	7.1	2.0
Gravel	GS-Gravel	%	0.5	0.6	0		0.2	0.9	0	0	0	0
Sand, Coarse	GS-Csand	%	0.4	0.3	0.3		0.1	0.8	0	0	0.3	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	4.9	10.16	20.01		61.23	38.77	34.81	19	35.82	80.87
Sand, Fine (#230) (d)	GS-Fsand	%	6.6	11.4	23.6		64.7	40.9	40.3	23.3	40.7	83.6
Sand, Medium	GS-Msand	%	0.2	0.6	0.5		6.7	10.9	0.4	0.2	0.2	3.7
Silt (#200) (d)	GS-Silt-200	%	80.6	62.33	59.48		28.06	39.12	53.08	66.69	56.57	13.32
Silt (#230) (d)	GS-Silt	%	78.9	61.1	55.9		24.6	37.0	47.6	62.4	51.7	10.6
Percent Fines (e)	GS-FINES	%	94	88.33	79.18		31.76	48.62	64.68	80.89	63.67	15.32
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	38000	44000	35000	38000	24000	23000	20000	28000	12000	3300

Notes:

a. Qualifiers:
- J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
- +/- = Indicates the result may be biased high/low
- JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U = Not detected at detection limit shown.
- UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S176	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178
			Sample ID	PDI-SC-S176-7.5TO9.6	PDI-SC-S178-0TO2	PDI-SC-S178-10.7TO12.7	PDI-SC-S178-12.7TO14	PDI-SC-S178-2TO3.7	PDI-SC-S178-3.7TO4.7	PDI-SC-S178-4.7TO6.7	PDI-SC-S178-6.7TO8.7	PDI-SC-S178-8.7TO10.7
			Sample Date	8/8/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N
			Depth	7.5-9.6 ft	0-2 ft	10.7-12.7 ft	12.7-14 ft	2-3.7 ft	3.7-4.7 ft	4.7-6.7 ft	6.7-8.7 ft	8.7-10.7 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.00079 J+	0.47	0.00074 J	0.00097 J	0.24	0.13	0.0026 J	0.0018 J	0.0010 J
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.00077 J	0.12	< 0.000050 U	< 0.000057 U	0.14	0.079 J	0.00070 JN	< 0.00018 U	< 0.00012 U
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.00035 J+	0.0063	< 0.000063 U	< 0.000071 U	0.0044 J	0.0031 J	< 0.00011 U	< 0.00020 U	< 0.00013 U
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00010 JN	0.0037 J	< 0.000056 U	0.00020 J+	0.0023 J	0.0014 J	< 0.000065 U	< 0.00015 U	< 0.000076 U
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.00010 J	0.010	< 0.000066 U	< 0.000090 U	0.0055	0.0034 J	< 0.000078 U	< 0.000043 U	< 0.000028 U
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.000061 J	0.022	< 0.000053 U	< 0.000051 U	0.010	0.0059	0.00016 JN	0.00010 JN	0.000048 JN
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	< 0.000034 U	0.0070	< 0.000058 U	< 0.000074 U	0.0091	0.0073	< 0.000083 U	< 0.000044 U	< 0.000030 U
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00012 JN	0.0091	< 0.000051 U	< 0.000048 U	0.0047 J	0.0032 J	0.00016 JN	0.00020 J	0.00011 JN
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.00059 U	< 0.00052 U	< 0.000038 U	< 0.000050 U	< 0.00059 U	< 0.00049 U	< 0.000038 U	< 0.000023 U	< 0.000015 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.000023 U	0.0020 JN	< 0.000065 U	< 0.000077 U	0.0014 J	0.00075 J	< 0.000056 U	< 0.000041 U	< 0.000034 U
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	< 0.000043 U	0.0025 JN	< 0.000031 U	< 0.000038 U	0.0015 J	0.00088 J	< 0.000048 U	< 0.000027 U	< 0.000019 U
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	< 0.000030 U	0.0024 J	< 0.000040 U	< 0.000051 U	0.0020 J	0.0012 J	< 0.000055 U	< 0.000030 U	< 0.000021 U
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	< 0.000019 U	0.0026 J	< 0.000032 U	< 0.000038 U	0.0015 J	0.00092 J	< 0.000052 U	< 0.000029 U	< 0.000021 U
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000015 U	0.0020	< 0.000056 U	< 0.000055 U	0.00073 JN	0.00042 JN	< 0.000031 U	0.00012 JN	0.00016 JN
2,3,7,8-TCDF		51207-31-9	µg/kg	0.000046 J+	0.0039	< 0.000026 U	< 0.000026 U	0.0013	0.00074 J	< 0.000028 U	< 0.000011 U	< 0.0000095 U
OCDD		3268-87-9	µg/kg	0.0081 J+	4.8 J	0.0078	0.0093	3.3	2.2	0.035	0.025	0.011
OCDF		39001-02-0	µg/kg	0.00064 J+	0.42	< 0.00010 U	< 0.000080 U	0.28	0.17	0.0025 J	0.00087 J	0.00031 J
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.000094	0.018	0.000042	0.000071	0.011	0.0066	0.0001	0.0002	0.00021
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.000072	0.017	0.000042	0.000071	0.011	0.0064	0.000065	0.00011	0.000093
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.000042	0.016	0.0000097	0.000032	0.01	0.0062	0.000037	0.000046	0.000013
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 U	< 2.9 U	< 3.8 U	< 3.2 U	< 3.0 U	< 2.9 U	< 2.9 U
Aroclor 1221		11104-28-2	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 UJ	< 2.9 UJ	< 3.8 U	< 3.2 U	< 3.0 U	< 2.9 U	< 2.9 UJ
Aroclor 1232		11141-16-5	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 U	< 2.9 U	< 3.8 U	< 3.2 U	< 3.0 U	< 2.9 U	< 2.9 U
Aroclor 1242		53469-21-9	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 U	< 2.9 U	< 3.8 U	< 3.2 U	< 3.0 U	< 2.9 U	< 2.9 U
Aroclor 1248		12672-29-6	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 UJ	< 2.9 UJ	< 3.8 U	< 3.2 U	< 3.0 U	< 2.9 U	< 2.9 UJ
Aroclor 1254		11097-69-1	µg/kg	< 2.8 UJ	320 J	< 2.9 U	< 2.9 U	110 J	35 J	< 3.0 U	< 2.9 U	< 2.9 U
Aroclor 1260		11096-82-5	µg/kg	< 2.8 UJ	< 4.0 U	< 2.9 UJ	< 2.9 UJ	< 3.8 U	< 3.2 U	0.92 J	< 2.9 U	< 2.9 UJ
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	< 2.8 UJ	320	< 2.9 UJ	< 2.9 UJ	110	35	0.92	< 2.9 U	< 2.9 UJ
Pesticides												
2,4-DDD		53-19-0	µg/kg	< 0.038 U	1.70 J	< 0.043 U	< 0.050 U	4.57	1.15 J	< 0.063 U	< 0.052 U	< 0.018 UJ
2,4-DDE		3424-82-6	µg/kg	< 0.023 U	1.01 J	< 0.027 U	< 0.038 U	1.86 J	0.416 J	< 0.021 U	< 0.035 U	< 0.013 U
2,4-DDT		789-02-6	µg/kg	< 0.026 UJ	2.41	< 0.048 U	< 0.046 U	7.21	0.263 J	< 0.025 U	< 0.047 U	< 0.023 U
4,4'-DDD		72-54-8	µg/kg	< 0.025 U	3.61	< 0.043 U	< 0.042 U	10.7	2.71 J	< 0.131 U	< 0.043 U	< 0.022 UJ
4,4'-DDE		72-55-9	µg/kg	0.0873 J	11.4	< 0.031 U	< 0.056 U	9.56	4.40	0.210 J	< 0.0779 U	< 0.016 U
4,4'-DDT		50-29-3	µg/kg	0.259 J	7.77	< 0.080 U	< 0.195 U	64.1	0.944 J	< 0.041 U	< 0.193 U	< 0.055 U
DDx	(b)	T_DDx (PDI)	µg/kg	0.365	27.9	< 0.08 U	< 0.195 U	98	9.88	0.276	< 0.193 U	< 0.055 U
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	17	82	< 1.4 U	< 1.5 U	91	53	3.0 J	< 1.4 U	1.6
Acenaphthene		83-32-9	µg/kg	10	130	< 1.4 U	< 1.5 U	74	39	1.9 J	< 1.4 U	0.72 J
Acenaphthylene		208-96-8	µg/kg	13	64	< 1.4 U	< 1.5 U	83	42	4.9 J	< 1.4 U	< 1.4 U
Anthracene		120-12-7	µg/kg	17	180	< 1.4 U	0.34 J	130	57	3.4 J	0.35 J	0.37 J
Benz(a)anthracene		56-55-3	µg/kg	11	460	0.84 J	1.3 J	290	110	10	0.98 J	0.94 J
Benzo(a)pyrene		50-32-8	µg/kg	13	350	< 1.4 U	< 1.5 U	230	83	5.0 J	1.4	< 7.1 U
Benzo(b)fluoranthene		205-99-2	µg/kg	14 J	520	1.6	1.8	300	110	7.7	1.5	3.4 J
Benzo(g,h,i)perylene		191-24-2	µg/kg	11	320	0.48 J	0.59 J	250	95	4.1 J	0.58 J	2.1 J
Benzo(k)fluoranthene		207-08-9	µg/kg	5.5 J	150	0.27 J	0.32 J	91	31	3.2 J	0.29 J	< 7.1 U
Chrysene		218-01-9	µg/kg	14	490	1.3 J	1.7	310	130	8.9	1.4	1.2 J
Dibenz(a,h)anthracene		53-70-3	µg/kg	< 7.0 U	77	< 1.4 U	0.27 J	44	11 J	1.4 J	< 1.4 U	< 7.1 U
Fluoranthene		206-44-0	µg/kg	39	960	1.0 J	1.9	640	270	16	1.6	1.3 J
Fluorene		86-73-7	µg/kg	9.8	120	0.72 J	0.70 J	78	37	2.6 J	0.71 J	1.2 J
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	11	280	0.45 J	0.70 J	210	62	4.3 J	0.57 J	1.5 J
Naphthalene		91-20-3	µg/kg	65	140	0.75 J	0.78 J	190	100	5.7 J	0.79 J	1.0 J
Phenanthrene		85-01-8	µg/kg	52	910	< 1.4 U	1.6	550	270	15	1.5	1.9
Pyrene		129-00-0	µg/kg	56	1100	1.4	2.3	810	350	19	1.9	1.6
Total PAHs	(b)	T_PAH (PDI)	µg/kg	360	6300	10	16	4400	1900	120	15	23
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	20	550	0.99	1.4	360	120	8.6	2.4	4.1

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S176	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178	SC-S178
		Sample ID	PDI-SC-S176-7.5TO9.6	PDI-SC-S178-0TO2	PDI-SC-S178-10.7TO12.7	PDI-SC-S178-12.7TO14	PDI-SC-S178-2TO3.7	PDI-SC-S178-3.7TO4.7	PDI-SC-S178-4.7TO6.7	PDI-SC-S178-6.7TO8.7	PDI-SC-S178-8.7TO10.7
		Sample Date	8/8/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N
		Depth	7.5-9.6 ft	0-2 ft	10.7-12.7 ft	12.7-14 ft	2-3.7 ft	3.7-4.7 ft	4.7-6.7 ft	6.7-8.7 ft	8.7-10.7 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	70.2	48.5	67.7	66.7	51.2	59.5	65.2	67.3	67.2
Total Solids@70C	TSOLID70	%	70	51	70	69	54	62	68	69	71
Total Solids (%)	%SOLID	%	71.3	49.6	67.6	67.6	50.1	57.7	63.1	66.9	63.2
Clay	GS-Clay	%	9.3	25.3	15.9	17.0	24.0	17.4	18.4	16.9	15.7
Gravel	GS-Gravel	%	0	0	0	0	0	0	1.3	0	0.7
Sand, Coarse	GS-Csand	%	0.4	0.1	0.3	0.1	0	0	0.5	1.2	0.2
Sand, Fine (#200) (d)	GS-Fsand-200	%	27.93	7.719	9.218	7.131	4.282	5.107	7.634	10.89	11.37
Sand, Fine (#230) (d)	GS-Fsand	%	33.2	8.9	13.2	9.9	5.2	6.8	10.5	14.4	14.6
Sand, Medium	GS-Msand	%	4.3	2.2	0	0.1	0.2	0.3	0.1	0.1	0.1
Silt (#200) (d)	GS-Silt-200	%	58.06	64.68	74.58	75.76	71.51	77.19	72.06	70.90	71.92
Silt (#230) (d)	GS-Silt	%	52.8	63.5	70.6	73.0	70.6	75.5	69.2	67.4	68.7
Percent Fines (e)	GS-FINES	%	67.36	89.98	90.48	92.76	95.51	94.59	90.46	87.8	87.62
Liquid Limit	GS-LL	None		69							
Plasticity Index	GS-PI	None		28							
Plasticity Limit	GS-PL	None		41							
Total Organic Carbon	TOC	mg/kg	11000	34000	14000	15000	46000	30000	17000	15000	15000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S185	SC-S185	SC-S185	SC-S185	SC-S188	SC-S189	SC-S189	SC-S189	SC-S191	SC-S191
		Sample ID	PDI-SC-S185-0TO2	PDI-SC-S185-2TO4	PDI-SC-S185-4TO5.5	PDI-SC-S185-5.5TO6.5	PDI-SC-S188-0TO1.5	PDI-SC-S189-0TO2	PDI-SC-S189-2TO4	PDI-SC-S189-4TO5.7	PDI-SC-S191-0TO2	PDI-SC-S191-2TO4
		Sample Date	7/26/2018	7/26/2018	7/26/2018	7/26/2018	8/8/2018	7/25/2018	7/25/2018	7/25/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	2-4 ft	4-5.5 ft	5.5-6.5 ft	0-1.5 ft	0-2 ft	2-4 ft	4-5.7 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.017	0.0051	0.0030 J	0.0021 J	0.28	0.18	0.017	0.024	0.35	0.63
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.0023 J	0.0021 J	0.0016 J	0.00075 J	0.038	0.028	0.0057	0.015	0.059	0.094
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.00015 J	0.00013 J	0.00014 J	0.00010 J	0.0062 J	0.0025 J	0.00030 J	0.00092 J	0.0063	0.0092
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	< 0.00013 U	< 0.00017 U	< 0.00011 U	< 0.000036 U	0.0023 J	0.0012 J	0.00036 J+	0.00050 J+	0.0028 J	0.0048
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	< 0.00015 U	0.00018 JN	0.00014 J	< 0.000054 U	0.0052 J	0.0050	0.00038 J	0.00074 J	0.0065	0.0092
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.00038 JN	0.00026 JN	0.00015 JN	0.00014 J+	0.014	0.0064	0.00076 J	0.0017 J	0.016	0.022
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	< 0.00015 U	0.00018 JN	0.00013 J	< 0.000056 U	0.0026 J	0.0035 J	0.00090 J	0.0023 J	0.0028 JN	0.0049
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00027 J	0.00030 J	0.00017 J	0.00019 J	0.0065 J	0.0034 J	0.00053 J	0.0010 J	0.0063	0.0082
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.000071 U	< 0.000048 U	0.000089 J	0.000072 J	0.0015 J+	0.00018 J	< 0.000069 U	0.00022 JN	< 0.00079 U	< 0.0012 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.000090 J	< 0.000071 U	< 0.000044 U	0.000046 JN	0.0015 J	0.00068 JN	0.00012 JN	0.00030 J	0.0014 JN	0.0016 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	< 0.000041 U	< 0.000047 U	< 0.000036 U	0.000061 JN	0.0016 J	0.0031 J	0.00013 JN	0.00037 J	< 0.00050 U	0.0028 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	< 0.000089 U	< 0.000057 U	0.000085 JN	< 0.000041 U	0.0014 JN	0.00096 J	0.00019 J	0.00053 J	0.0016 J	0.0021 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	< 0.000044 U	< 0.000049 U	< 0.000038 U	0.000070 J	0.0017 J	0.0021 J	0.00013 JN	0.00028 JN	0.0014 J	0.0033 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00011 JN	0.00020 JN	< 0.000029 U	0.00017 JN	0.00095 J	0.00061 J	< 0.00011 U	0.00019 JN	0.00077 JN	0.0013
2,3,7,8-TCDF	51207-31-9	µg/kg	0.000067 JN	0.000063 JN	0.000049 J	< 0.00012 U	0.013	0.0065	0.00029 J	0.00043 J	0.0073	0.0067
OCDD	3268-87-9	µg/kg	0.15	0.066	0.038	0.032	2.9	2.2	0.25	0.40	3.5	7.5 J
OCDF	39001-02-0	µg/kg	0.0047 J	0.0043 J	0.0032 J	0.0012 J	0.17	0.078	0.013	0.025	0.19	0.40
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.00052	0.00043	0.00016	0.00032	0.012	0.0075	0.00087	0.0019	0.012	0.02
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.00041	0.00022	0.00014	0.00019	0.012	0.0072	0.00071	0.0017	0.01	0.019
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.00036	0.00012	0.00012	0.0001	0.012	0.0068	0.00065	0.0016	0.0097	0.018
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 2.5 UJ	< 2.4 UJ	< 2.6 UJ	< 2.7 UJ	< 130 U	39 J	< 2.9 UJ	< 2.8 UJ	< 4.8 UJ	< 170 U
Aroclor 1221	11104-28-2	µg/kg	< 2.5 U	< 2.4 U	< 2.6 U	< 2.7 U	< 130 U	< 2.9 UJ	< 2.9 UJ	< 2.8 UJ	< 4.8 UJ	< 170 U
Aroclor 1232	11141-16-5	µg/kg	< 2.5 U	< 2.4 U	< 2.6 U	< 2.7 U	< 130 U	< 2.9 UJ	< 2.9 UJ	< 2.8 UJ	< 4.8 UJ	< 170 U
Aroclor 1242	53469-21-9	µg/kg	< 2.5 U	< 2.4 U	< 2.6 U	< 2.7 U	< 130 U	< 2.9 UJ	< 2.9 UJ	< 2.8 UJ	< 4.8 UJ	< 170 U
Aroclor 1248	12672-29-6	µg/kg	< 2.5 UJ	< 2.4 UJ	< 2.6 UJ	< 2.7 UJ	< 130 U	< 2.9 UJ	< 2.9 UJ	< 2.8 UJ	< 4.8 UJ	< 170 U
Aroclor 1254	11097-69-1	µg/kg	2.0 J	< 2.4 U	< 2.6 U	< 2.7 U	160	30 J	< 2.9 UJ	< 2.8 UJ	290 J	1300 J
Aroclor 1260	11096-82-5	µg/kg	< 2.5 U	2.5 J	2.1 J	1.7 J	< 130 U	< 2.9 UJ	3.7 J	2.4 J	< 4.8 UJ	< 170 UJ
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	2	2.5	2.1	1.7	160	69	3.7	2.4	290	1300
Pesticides												
2,4-DDD	53-19-0	µg/kg	0.425 J	0.162 J	0.143 J	< 0.21 UJ	0.618 J	6.28	0.514 J	0.474 J	1.54 J	6.68 J
2,4-DDE	3424-82-6	µg/kg	0.0365 J	0.0582 J	0.0867 J	< 0.069 U	0.266 J	0.627 J	0.114 J	0.151 J	0.264 J	0.837 J
2,4-DDT	789-02-6	µg/kg	0.111 J	0.092 JN	0.0775 J	< 0.14 UJ	0.623 J	0.12 JN	0.025 JN	0.0245 J	1.31 J	11.8 J
4,4'-DDD	72-54-8	µg/kg	4.47	0.549 J	0.447 J	< 0.16 UJ	1.42 J	12.7	2.24 J	1.9 J	3.87 J	18.2 J
4,4'-DDE	72-55-9	µg/kg	0.556 J	0.213 J	0.228 J	< 0.10 U	7.43	5.28	1.49	2.57	7.21	18.4
4,4'-DDT	50-29-3	µg/kg	0.605 J	0.284 J	0.262 J	< 0.27 UJ	1.41 J	1.64	0.0853 J	0.0509 J	4.20 J	43.4 J
DDx (b)	T_DDx (PDI)	µg/kg	6.2	1.36	1.24	< 0.27 UJ	11.8	26.6	4.47	5.17	18.4	99.3
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	3.9 J	1.5 J	1.8 J	2.1 J	300	86	42	47	64	47
Acenaphthene	83-32-9	µg/kg	3.3 J	< 12 U	200	1.2 J	1000	98	59	38	420	310
Acenaphthylene	208-96-8	µg/kg	3.4 J	2.4 J	13	< 6.6 U	100	49	26	36	73	81
Anthracene	120-12-7	µg/kg	5.9 J	6.7 J	420	3.5 J	1500	72	47	44	430	240
Benz(a)anthracene	56-55-3	µg/kg	13	7.1 J	250	2.1 J	3600	180	76	70	1000	1300
Benzo(a)pyrene	50-32-8	µg/kg	11 J	6.1 J	68	< 6.6 U	3000	73	49	55	970	1100
Benzo(b)fluoranthene	205-99-2	µg/kg	19	8.2 J	200	1.7 J	4600 J	130	67	67	1500 J	1800 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	9.5 J	5.6 J	29	2.1 J	2000	54	46	55	750	880
Benzo(k)fluoranthene	207-08-9	µg/kg	8.3 J	2.6 J	58	1.3 J	1500	40	20	22	480	640
Chrysene	218-01-9	µg/kg	19	7.6 J	250	2.0 J	3600	180	74	78	1100	1400
Dibenz(a,h)anthracene	53-70-3	µg/kg	4.4 J	3.7 J	12	< 6.6 U	690	9.0 J	4.9 J	6.0 J	240	280
Fluoranthene	206-44-0	µg/kg	36	16	1700	6.8	9100	430	200	200	3000	3200
Fluorene	86-73-7	µg/kg	4.5 J	1.4 J	190	0.95 J	1100	57	40	31	380	270
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	12	6.0 J	50	1.8 J	2800	46	34	39	960	1100
Naphthalene	91-20-3	µg/kg	8.6 J	5.7 J	4.3 J	3.6 J	280	240	120	120	200	75
Phenanthrene	85-01-8	µg/kg	23	14	2200	5.6 J	7500	380	220	210	2400	2200
Pyrene	129-00-0	µg/kg	43	25	1100	6.7	7800	470	220	260	2700	2900
Total PAHs (b)	T_PAH (PDI)	µg/kg	230	130	6700	48	50000	2600	1300	1400	17000	18000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	20	12	130	3.9	4800	120	72	79	1600	1800

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S185	SC-S185	SC-S185	SC-S185	SC-S188	SC-S189	SC-S189	SC-S189	SC-S191	SC-S191
		Sample ID	PDI-SC-S185-0TO2	PDI-SC-S185-2TO4	PDI-SC-S185-4TO5.5	PDI-SC-S185-5.5TO6.5	PDI-SC-S188-0TO1.5	PDI-SC-S189-0TO2	PDI-SC-S189-2TO4	PDI-SC-S189-4TO5.7	PDI-SC-S191-0TO2	PDI-SC-S191-2TO4
		Sample Date	7/26/2018	7/26/2018	7/26/2018	7/26/2018	8/8/2018	7/25/2018	7/25/2018	7/25/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	2-4 ft	4-5.5 ft	5.5-6.5 ft	0-1.5 ft	0-2 ft	2-4 ft	4-5.7 ft	0-2 ft	2-4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	79.0	79.4	75.6	71.4	37.9	65.9	68.2	69.0	40.7	55.4
Total Solids@70C	TSOLID70	%	81	80	79	71	58	71	72	71	42	56
Total Solids (%)	%SOLID	%	75.7	78.6	75.8	69.9	38.1	66.9	68.9	67.5	45.2	58.4
Clay	GS-Clay	%	1.6	4.9	6.5	9.5	3.9	3.7	1.0	3.8	21.8	18.9
Gravel	GS-Gravel	%	3.7	6.4	0	0	78.6	4.4	0	0	0	0.2
Sand, Coarse	GS-Csand	%	2.9	3.0	1.3	0.2	0.4	0.6	0.4	0	0.1	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	54.36	34.56	29.79	15.4	3.912	56.71	72.04	52.19	11.55	26.41
Sand, Fine (#230) (d)	GS-Fsand	%	54.9	35.6	31.4	20.2	4.8	61.9	76.9	58.2	12.3	28.0
Sand, Medium	GS-Msand	%	30.6	28.0	24.9	4.7	0.3	1.9	0.5	1.3	3.2	5.3
Silt (#200) (d)	GS-Silt-200	%	6.833	23.13	37.40	70.19	12.98	32.78	26.05	42.70	63.34	48.98
Silt (#230) (d)	GS-Silt	%	6.3 L	22.1	35.8	65.4	12.1	27.6	21.2	36.7	62.6	47.4
Percent Fines (e)	GS-FINES	%	8.433	28.03	43.9	79.69	16.88	36.48	27.05	46.5	85.14	67.88
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	1100 J	2500	3900	8000	57000	8200	4200	6900	41000	27000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S191	SC-S191	SC-S192	SC-S192	SC-S192	SC-S198	SC-S198	SC-S198	SC-S198	SC-S198
		Sample ID	PDI-SC-S191-4TO6	PDI-SC-S191-6TO8.1	PDI-SC-S192-0TO1.5	PDI-SC-S192-1.5TO3	PDI-SC-S192-3TO4.2	PDI-SC-S198-0TO2	PDI-SC-S198-10TO11.8	PDI-SC-S198-2TO4	PDI-SC-S198-2TO4D	PDI-SC-S198-4TO6
		Sample Date	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	N	N	N	N	N	FD	N
		Depth	4-6 ft	6-8.1 ft	0-1.5 ft	1.5-3 ft	3-4.2 ft	0-2 ft	10-11.8 ft	2-4 ft	2- ft	4-6 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.60	0.22	10 J	6.3 J	0.51	0.50	0.00071 J+	0.27	0.23	0.13
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.13	0.062	2.1 J	1.5 J	0.11	0.13	< 0.000088 U	0.12	0.11	0.048
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.013	0.0045	0.26 J	0.17 J	0.012	0.0078	< 0.00022 U	0.0054	0.0047 J	0.0028 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.0068	0.0015 JN	0.066 J	0.049 J	0.0027 J	0.0039 J	0.000095 JN	0.0028 J	0.0022 J	0.0011 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.012	0.0038	0.17 J	0.12 J	0.0080	0.011	< 0.000045 U	0.0063	0.0059	0.0029 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.023	0.0074	0.33 J	0.20 J	0.013	0.021	0.000045 JN	0.012	0.010	0.0053
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.0082	0.0024 JN	0.079 J	0.053 J	0.0038	0.0072	< 0.000044 U	0.0088	0.0078	0.0035 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0092	0.0046	0.12 J	0.089	0.0065	0.0092	< 0.000028 U	0.0050	0.0047 J	0.0023 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.00084 U	< 0.00032 U	< 0.011 UJ	< 0.0080 UJ	< 0.00061 U	0.00088 J+	< 0.00038 U	0.00080 J+	0.00090 JN	< 0.00060 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.0032 J	0.00080 JN	0.030 J	0.019	0.0012 J	0.0016 JN	< 0.000032 U	0.0012 JN	0.0010 JN	0.00043 JN
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.0028 JN	0.00050 JN	0.016 J	0.0097	0.0011 J	0.0038 J	< 0.000020 U	0.0017 JN	0.0017 J	0.00075 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0032 J	< 0.00061 U	0.043 J	0.026 J	0.0019 J	0.0024 J	< 0.000037 U	< 0.0010 U	0.0015 JN	0.00065 JN
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.0032 J	0.00094 J	0.019 J	0.011	0.00088 J	0.0029 J	< 0.000023 U	0.0014 J	0.0015 J	0.00052 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.0026	0.0011	0.0057 J	0.0036	0.00030 JN	0.0011	< 0.000035 U	0.00080 JN	0.00071 JN	0.00030 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0050	0.00076	0.032 J	0.018	0.0015	0.0043	< 0.000017 U	0.0015	0.0017	0.00078 J
OCDD	3268-87-9	µg/kg	6.3 J	2.4	110 J	69 J	5.8 J	5.4 J	0.0084 J+	3.5	3.0	1.6
OCDF	39001-02-0	µg/kg	0.53	0.34	7.6 J	5.0	0.42	0.54	< 0.00026 U	0.36	0.31	0.21
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.023	0.008	0.29	0.18	0.014	0.018	0.000043	0.011	0.01	0.0049
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.023	0.0071	0.29	0.18	0.014	0.017	0.000029	0.0099	0.0087	0.0043
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.023	0.0067	0.28	0.18	0.013	0.016	0.0000096	0.0093	0.0082	0.0041
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.6 U	< 2.8 U	< 7.2 U	< 5.2 UJ	< 2.4 U	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Aroclor 1221	11104-28-2	µg/kg	< 3.6 U	< 2.8 U	< 7.2 U	< 5.2 UJ	< 2.4 U	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Aroclor 1232	11141-16-5	µg/kg	< 3.6 U	< 2.8 U	< 7.2 U	< 5.2 UJ	< 2.4 U	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Aroclor 1242	53469-21-9	µg/kg	< 3.6 U	< 2.8 U	< 7.2 U	< 5.2 UJ	< 2.4 U	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Aroclor 1248	12672-29-6	µg/kg	< 3.6 U	< 2.8 U	< 7.2 U	< 5.2 UJ	< 2.4 U	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Aroclor 1254	11097-69-1	µg/kg	720 J	280 J	1800 J	1500 J	180 J	530	< 2.7 U	160	170	93
Aroclor 1260	11096-82-5	µg/kg	< 180 UJ	< 2.8 U	< 360 UJ	< 260 UJ	< 24 UJ	< 4.3 U	< 2.7 U	< 3.8 U	< 3.6 U	< 3.1 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	720	280	1800	1500	180	530	< 2.7 U	160	170	93
Pesticides												
2,4-DDD	53-19-0	µg/kg	4.73 J	4.55 J	4.28 J	2.06 J	0.506 J	0.841 J	0.0427 J	0.762 J	0.785 J	0.346 J
2,4-DDE	3424-82-6	µg/kg	1.26 J	0.268 J	0.884 J	0.504 J	0.0966 J	0.755 J	< 0.025 U	0.973 J	1.09 J	0.247 J
2,4-DDT	789-02-6	µg/kg	3.09 J	0.297 J	2.73 J	1.87 J	0.251 J	0.73 JN	0.039 JN	0.144 J	0.17 JN	0.269 J
4,4'-DDD	72-54-8	µg/kg	11.4 J	11.2 J	8.72 J	4.37 J	1.05 J	2.17 J	< 0.041 UJ	2.01 J	2.05 J	0.854 J
4,4'-DDE	72-55-9	µg/kg	17.5	3.20	16.2	8.81	1.51	10.2	< 0.0582 U	9.31	9.63	2.66
4,4'-DDT	50-29-3	µg/kg	10.9 J	0.803 J	6.15 J	6.28 J	0.852 J	2.60 J	< 0.16 UJ	0.425 J	0.41 JN	0.914 J
DDx (b)	T_DDx (PDI)	µg/kg	48.9	20.3	39	23.9	4.27	17.3	0.162	13.6	14.1	5.29
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	60	26	580	580	48	32	0.43 J	44	56	21
Acenaphthene	83-32-9	µg/kg	240	52	2200	1500	160	51	< 1.2 U	45	46	24
Acenaphthylene	208-96-8	µg/kg	69	46	470	330	33	28	< 1.2 U	32	32	16
Anthracene	120-12-7	µg/kg	200	72	3200	2400	230	87	< 1.2 U	76	48	35
Benz(a)anthracene	56-55-3	µg/kg	1200	340	7400	6300	670	180	0.21 J	100	110	52
Benzo(a)pyrene	50-32-8	µg/kg	1200	310	8400	5900	620	190	< 1.2 U	110	110	61
Benzo(b)fluoranthene	205-99-2	µg/kg	1800 J	470 J	12000 J	8500 J	900 J	310 J	< 1.2 U	180 J	170 J	91 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	1000	290	6000	4200	460	180	< 1.2 U	110	120	59
Benzo(k)fluoranthene	207-08-9	µg/kg	720	160	4700	3200	320	120	< 1.2 U	70	69	38
Chrysene	218-01-9	µg/kg	1400	390	8600	7200	730	220	< 1.2 U	140	150	68
Dibenz(a,h)anthracene	53-70-3	µg/kg	320	76	1800	1300	130	57	< 1.2 U	15 J	16 J	7.9
Fluoranthene	206-44-0	µg/kg	3100	500	22000	16000	1600	510	< 1.2 U	380	330	170
Fluorene	86-73-7	µg/kg	280	33	2400	1800	200	27	< 1.2 U	46	58	19
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	1300	340	7800	5500	610	220	< 1.2 U	110	130	58
Naphthalene	91-20-3	µg/kg	180	100	540	450	< 12 U	51	< 1.2 U	97	130	35
Phenanthrene	85-01-8	µg/kg	1900	430	16000	12000	1200	310	< 1.2 U	250	260	110
Pyrene	129-00-0	µg/kg	3000	890	20000	14000	1500	620	0.45 J	530	460	240
Total PAHs (b)	T_PAH (PDI)	µg/kg	18000	4500	120000	91000	9400	3200	2.3	2300	2300	1100
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	2000	500	13000	9300	970	320	0.62	160	170	89

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S191	SC-S191	SC-S192	SC-S192	SC-S192	SC-S198	SC-S198	SC-S198	SC-S198	SC-S198
		Sample ID	PDI-SC-S191-4TO6	PDI-SC-S191-6TO8.1	PDI-SC-S192-0TO1.5	PDI-SC-S192-1.5TO3	PDI-SC-S192-3TO4.2	PDI-SC-S198-0TO2	PDI-SC-S198-10TO11.8	PDI-SC-S198-2TO4	PDI-SC-S198-2TO4D	PDI-SC-S198-4TO6
		Sample Date	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018	8/8/2018
		Sample Type Code	N	N	N	N	N	N	N	N	FD	N
		Depth	4-6 ft	6-8.1 ft	0-1.5 ft	1.5-3 ft	3-4.2 ft	0-2 ft	10-11.8 ft	2-4 ft	2- ft	4-6 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	55.6	67.4	27.6	37.8	80.1	45.2	74.2	52.6	52.6	62.2
Total Solids@70C	TSOLID70	%	56	71	26	37	80	46	74	55	53	63
Total Solids (%)	%SOLID	%	55	67.7	28.8	43.5	76.9	48.1	74.8	53.7	53.5	61.3
Clay	GS-Clay	%	27.2	4.5	8.2	6.1	1.5	32.8	5.4	23.9		14.7
Gravel	GS-Gravel	%	0	0.1	0.1	0.1	39.1	0	0	0		0
Sand, Coarse	GS-Csand	%	0.2	0.2	0.4	0.5	2.1	0.2	0	0		0.3
Sand, Fine (#200) (d)	GS-Fsand-200	%	9.39	68.87	16.22	29.54	35.86	6.013	55.96	7.598		22.48
Sand, Fine (#230) (d)	GS-Fsand	%	10.6	73.4	19.7	33.6	37.0	7.1	61.0	11.1		28.3
Sand, Medium	GS-Msand	%	1.3	1.9	0.7	2.8	17.4	0.3	0.2	0.3		0.2
Silt (#200) (d)	GS-Silt-200	%	62.00	24.52	74.37	60.95	3.836	60.78	38.33	68.20		62.31
Silt (#230) (d)	GS-Silt	%	60.8	20.0	70.9	56.9	2.7	59.7	33.3	64.7		56.5
Percent Fines (e)	GS-FINES	%	89.2	29.02	82.57	67.05	5.336	93.58	43.73	92.1		77.01
Liquid Limit	GS-LL	None						81				
Plasticity Index	GS-PI	None						38				
Plasticity Limit	GS-PL	None						43				
Total Organic Carbon	TOC	mg/kg	35000	12000	100000	84000	5800	35000	4500	34000	33000	16000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S198	SC-S198	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S213
			Sample ID	PDI-SC-S198-6TO8	PDI-SC-S198-8TO10	PDI-SC-S203-0TO2	PDI-SC-S203-10TO12	PDI-SC-S203-12TO13.8	PDI-SC-S203-2TO4	PDI-SC-S203-4TO6	PDI-SC-S203-6TO8	PDI-SC-S203-8TO10	PDI-SC-S213-0TO2
			Sample Date	8/8/2018	8/8/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/9/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	6-8 ft	8-10 ft	0-2 ft	10-12 ft	12-13.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.010	0.0016 J	1.0	0.0015 J	0.0011 J	1.3	0.057	0.0017 J	0.0016 J	0.48
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.0034 J	0.00032 J+	0.45	0.00027 JN	0.00025 JN	0.58 J	0.029	0.00053 JN	0.00024 JN	0.14
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.00055 J+	< 0.00032 U	0.025	< 0.00014 U	< 0.000073 U	0.043 J	0.0020 J	< 0.00012 U	< 0.000089 U	0.010
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00027 J	0.00013 J	0.0046 J	< 0.00011 U	< 0.000092 U	0.0070	0.00054 J+	< 0.000098 U	< 0.000071 U	0.0039 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	< 0.000094 U	0.000063 J	0.048	< 0.000060 U	< 0.000057 U	0.055 J	0.0029 J	< 0.00020 U	< 0.000074 U	0.023
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.00047 J	0.000073 JN	0.037	< 0.000075 U	< 0.000063 U	0.044	0.0020 J	< 0.000096 U	< 0.000071 U	0.018
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.00025 JN	0.000051 J	0.011	< 0.000063 U	< 0.000061 U	0.014 J	0.0012 J	< 0.00017 U	< 0.000076 U	0.0053 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.00036 J	0.00017 JN	0.0085	< 0.000068 U	< 0.000059 U	0.010	0.0011 J	< 0.000090 U	< 0.000065 U	0.0061 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	0.00078 J+	< 0.00057 U	< 0.0021 U	0.000083 J	0.000079 J	< 0.0025 U	< 0.00021 U	< 0.000088 U	0.00012 J	0.00091 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.000095 J	< 0.000020 U	0.0021 J	< 0.000038 U	< 0.000031 U	< 0.0011 U	< 0.00011 U	< 0.00011 U	< 0.000037 U	0.0016 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.00015 J+	0.000059 J+	0.0034 J	< 0.000020 U	< 0.000024 U	0.0034 J	0.00032 J	< 0.000074 U	< 0.000019 U	0.0021 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	< 0.000084 U	< 0.000031 U	0.0055 J	< 0.000047 U	< 0.000045 U	0.0044 JN	< 0.00032 U	< 0.00011 U	< 0.000055 U	< 0.0013 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	< 0.000035 U	< 0.000018 U	0.0057	< 0.000020 U	< 0.000024 U	0.0057	0.00037 J	< 0.000070 U	< 0.000019 U	0.0035 J
2,3,7,8-TCDD	1746-01-6	µg/kg	< 0.000046 U	< 0.000063 U	0.0013	< 0.000020 U	< 0.000013 U	0.0025	< 0.000022 U	< 0.00010 U	< 0.000033 U	< 0.00035 U
2,3,7,8-TCDF	51207-31-9	µg/kg	0.00011 J+	< 0.000016 U	0.0066	< 0.0000095 U	< 0.000010 U	0.0045	0.00049 J	< 0.000055 U	< 0.000011 U	0.0037
OCDD	3268-87-9	µg/kg	0.14	0.022 J+	10 J	0.021	0.017	13 J	0.63	0.022	0.021	4.2
OCDF	39001-02-0	µg/kg	0.012	0.0011 J+	2.1	0.0012 J	0.0013 J	3.0	0.12	0.0023 J	0.0018 J	0.54
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.00053	0.00011	0.036	0.000052	0.000042	0.043	0.0021	0.000085	0.000056	0.017
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.00051	0.000084	0.036	0.000049	0.00004	0.042	0.0021	0.000079	0.000053	0.017
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.00048	0.000052	0.036	0.00003	0.000024	0.042	0.002	0.000024	0.000035	0.017
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg	< 2.8 U	< 3.0 U	< 450 U	< 2.9 U	< 2.7 U	< 380 U	< 2.8 U	< 2.9 U	< 2.9 U	< 5.8 U
Aroclor 1221	11104-28-2	µg/kg	< 2.8 U	< 3.0 U	< 450 U	< 2.9 UJ	< 2.7 U	< 380 UJ	< 2.8 U	< 2.9 U	< 2.9 UJ	< 5.8 U
Aroclor 1232	11141-16-5	µg/kg	< 2.8 U	< 3.0 U	< 450 U	< 2.9 U	< 2.7 U	< 380 U	< 2.8 U	< 2.9 U	< 2.9 U	< 5.8 U
Aroclor 1242	53469-21-9	µg/kg	< 2.8 U	< 3.0 U	< 450 U	< 2.9 U	< 2.7 U	< 380 U	< 2.8 U	< 2.9 U	< 2.9 U	< 5.8 U
Aroclor 1248	12672-29-6	µg/kg	< 2.8 U	< 3.0 U	< 450 U	< 2.9 U	< 2.7 U	< 380 U	< 2.8 U	< 2.9 U	< 2.9 U	< 5.8 U
Aroclor 1254	11097-69-1	µg/kg	11	< 3.0 U	< 450 U	< 2.9 UJ	< 2.7 U	< 380 UJ	< 2.8 U	< 2.9 U	< 2.9 UJ	< 5.8 U
Aroclor 1260	11096-82-5	µg/kg	< 2.8 U	< 3.0 U	3100 J	< 2.9 U	< 2.7 U	4900 J	170 J	3.1 J	2.9 J	83
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	11	< 3 U	3100	< 2.9 UJ	< 2.7 U	4900	170	3.1	2.9	83
Pesticides													
2,4-DDD	53-19-0	µg/kg	0.082 JN	0.031 JN	1.60 J	0.0425 J	< 0.014 U	6.02	0.677 J	0.037 JN	0.111 J	0.518 J
2,4-DDE	3424-82-6	µg/kg	0.0488 J	< 0.017 U	1.25 J	0.022 JN	< 0.017 U	2.93	< 0.147 U	< 0.013 U	0.0506 J	0.234 J
2,4-DDT	789-02-6	µg/kg	< 0.029 UJ	< 0.026 UJ	0.597 J	< 0.022 U	< 0.013 U	1.27 J	< 0.069 U	< 0.024 U	0.14 JN	0.29 JN
4,4'-DDD	72-54-8	µg/kg	0.152 J	< 0.0458 UJ	3.87	< 0.021 U	< 0.0490 U	16.3	1.73	0.0759 J	0.105 J	1.32 J
4,4'-DDE	72-55-9	µg/kg	0.305 J	< 0.0576 U	8.99 J	0.0401 J	< 0.0402 U	24.8	1.47	0.0717 J	0.102 J	3.81
4,4'-DDT	50-29-3	µg/kg	< 0.284 UJ	< 0.12 UJ	1.50 J	0.141 J	< 0.051 U	5.25	< 0.16 U	0.103 J	0.369 J	0.690 J
DDx (b)	T_DDx (PDI)	µg/kg	0.73	0.091	17.8	0.257	< 0.051 U	56.6	3.96	0.30	0.878	6.86
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg	1.5	0.33 J	100	0.92 J	0.59 J	160	13	1.1 J	0.96 J	16 J
Acenaphthene	83-32-9	µg/kg	1.3 J	< 1.5 U	260	0.44 J	< 5.9 U	420	51	1.7 J	0.73 J	24 J
Acenaphthylene	208-96-8	µg/kg	1.2 J	< 1.5 U	71	< 1.4 U	< 5.9 U	85	13	< 6.5 U	< 1.4 U	24 J
Anthracene	120-12-7	µg/kg	2.1	0.36 J	310	0.43 J	< 5.9 U	260	29	1.1 J	0.87 J	56 J
Benz(a)anthracene	56-55-3	µg/kg	3.4	0.66 J	480	1.4	1.5 J	550	120	3.1 J	2.0	150
Benzo(a)pyrene	50-32-8	µg/kg	3.2	< 1.5 U	330	0.60 J	< 5.9 U	530	66	< 6.5 U	1.2 J	140
Benzo(b)fluoranthene	205-99-2	µg/kg	4.7 J	1.5 J	550	2.9	2.7 J	720	83	3.9 J	3.5	290
Benzo(g,h,i)perylene	191-24-2	µg/kg	3.4	< 1.5 U	340	1.0 J	< 5.9 U	350	54	1.8 J	1.0 J	< 140 U
Benzo(k)fluoranthene	207-08-9	µg/kg	1.6	0.34 J	170	0.82 J	0.74 J	210	25	0.94 J	0.95 J	120 J
Chrysene	218-01-9	µg/kg	4.2	0.72 J	630	1.2 J	< 5.9 U	860	120	3.0 J	2.0	250
Dibenz(a,h)anthracene	53-70-3	µg/kg	0.52 J	< 1.5 U	73	< 1.4 U	< 5.9 U	94	10	< 6.5 U	< 1.4 U	< 140 U
Fluoranthene	206-44-0	µg/kg	11	2.0	1100	1.2 J	1.7 J	1400	250	6.0 J	2.9	480
Fluorene	86-73-7	µg/kg	1.1 J	< 1.5 U	180	0.63 J	< 5.9 U	200	11	0.86 J	0.96 J	31 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2.6	< 1.5 U	360	1.0 J	< 5.9 U	470	56	2.4 J	1.1 J	150
Naphthalene	91-20-3	µg/kg	2.9	< 1.5 U	160	0.69 J	1.2 J	210	24	2.1 J	0.87 J	54 J
Phenanthrene	85-01-8	µg/kg	8.0	< 1.5 U	1100	2.4	2.1 J	1900	330	9.8	4.7	180
Pyrene	129-00-0	µg/kg	13	1.9	1300	1.7	2.2 J	1500	300	7.5	3.4	510
Total PAHs (b)	T_PAH (PDI)	µg/kg	66	9.3	7500	19	19	9900	1600	52	29	2500
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	4.8	0.97	540	1.8	3.4	800	100	4.2	2.6	270

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S198	SC-S198	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S203	SC-S213
		Sample ID	PDI-SC-S198-6TO8	PDI-SC-S198-8TO10	PDI-SC-S203-0TO2	PDI-SC-S203-10TO12	PDI-SC-S203-12TO13.8	PDI-SC-S203-2TO4	PDI-SC-S203-4TO6	PDI-SC-S203-6TO8	PDI-SC-S203-8TO10	PDI-SC-S213-0TO2
		Sample Date	8/8/2018	8/8/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/9/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	6-8 ft	8-10 ft	0-2 ft	10-12 ft	12-13.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	68.3	65.9	43.1	68.1	70.2	51.9	69.2	67.6	67.8	34.1
Total Solids@70C	TSOLID70	%	68	67	46	70	73	54	73	67	69	34
Total Solids (%)	%SOLID	%	68.7	67.7	42.9	66.5	70.7	52.9	70	67	64.5	34.9
Clay	GS-Clay	%	7.9	6.1	26.9	10.0	10.7	24.6	9.9	14.1	12.9	28.3
Gravel	GS-Gravel	%	0	0	0.8	0	0	0	1.2	0	0	0
Sand, Coarse	GS-Csand	%	0	0	0.2	0	0	0.4	0	0.1	0	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	34.23	54.74	15.09	25.86	26.49	23.66	33.53	32.78	21.65	6.014
Sand, Fine (#230) (d)	GS-Fsand	%	41.6	62.7	16.3	32.4	33.1	26.3	37.3	33.3	29.1	7.1
Sand, Medium	GS-Msand	%	0.1	0.1	4.5	0.2	0.1	6.2	5.5	0.6	0.2	0.2
Silt (#200) (d)	GS-Silt-200	%	57.86	39.15	52.40	63.93	62.70	45.13	49.86	52.41	65.24	65.48
Silt (#230) (d)	GS-Silt	%	50.5	31.2	51.2	57.4	56.1	42.5	46.1	51.9	57.8	64.4
Percent Fines (e)	GS-FINES	%	65.76	45.25	79.3	73.93	73.4	69.73	59.76	66.51	78.14	93.78
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	8100	14000	35000 J	9200	8400	29000	10000	11000	9600	44000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S213	SC-S213	SC-S213	SC-S213	SC-S213	SC-S213	SC-S218	SC-S218	SC-S218	SC-S218
			Sample ID	PDI-SC-S213-10TO11.8	PDI-SC-S213-11.8TO12.8	PDI-SC-S213-2TO4	PDI-SC-S213-4TO6	PDI-SC-S213-6TO8	PDI-SC-S213-8TO10	PDI-SC-S218-0TO2	PDI-SC-S218-2TO4.5	PDI-SC-S218-4.5TO6	PDI-SC-S218-6TO8
			Sample Date	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	10-11.8 ft	11.8-12.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4.5 ft	4.5-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.20	0.15	0.48	0.57	0.47 J	0.29	0.32 J	0.26	0.020	0.0026 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.16	0.23	0.17	0.17	0.12	0.15	0.045 JN	0.050	0.022	0.00078 JN
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0050	0.0043 J	0.018	0.012	0.0080	0.0083	< 0.0021 U	0.0025 J	0.00040 J	< 0.00011 U
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0013 JN	0.0010 JN	0.0036 J	0.0042 J	0.0037 J	0.0025 J	0.00080 J+	0.0020 J	0.00023 JN	< 0.000089 U
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0070	0.011	0.045	0.031	0.017	0.021	0.0023 J	0.0039 J	0.00052 J	< 0.00011 U
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.010	0.0089	0.019	0.028	0.020	0.013	0.0062 JN	0.010	0.00092 J	< 0.000082 U
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.015	0.032	0.0081	0.0091	0.012	0.0098	0.0019 J	0.0032 J	0.00082 J	< 0.000099 U
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0047 J	0.0046	0.0057 J	0.0093	0.011	0.0066	0.0038 J	0.0044	0.00048 J	< 0.000079 U
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00091 U	< 0.00082 U	0.0012 J+	< 0.0010 U	< 0.0011 U	< 0.0011 U	< 0.00030 U	< 0.00028 U	< 0.000087 U	< 0.000061 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0015 J	0.0014 J	0.0015 J	0.0024 J	0.0025 J	0.0015 J	0.00078 JN	0.00099 JN	0.00015 J	< 0.000085 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		< 0.00099 U	0.0027 J	0.0018 J	0.0021 J	0.0030 J	0.0017 JN	0.00069 J	0.0012 J	< 0.000089 U	< 0.000060 U
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0037 J	0.0039 J	0.0031 J	0.0026 J	0.0031 J	0.0033 J	0.00082 J	0.0013 J	0.00028 JN	< 0.000064 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0021 J	0.0022 J	0.0040 J	0.0038 J	0.0029 J	0.0025 J	0.00083 J	0.0014 J	0.00019 J	< 0.000063 U
2,3,7,8-TCDD	1746-01-6	µg/kg		0.0011	0.00056 JN	0.00061 JN	0.0012	0.0013 JN	0.00078 J	0.0021	0.0021	0.000097 JN	< 0.000073 U
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0014	0.0012 J	0.0026	0.0080	0.0050 J	0.0013 JN	0.0011	0.0016	0.00021 J	< 0.000056 U
OCDD	3268-87-9	µg/kg		3.0	2.9	4.1	6.3 J	6.2 J	3.7 J	5.1 J	3.2 J	0.33	0.040
OCDF	39001-02-0	µg/kg		0.29	0.20	0.49	0.57	0.38	0.36	0.45	0.23	0.027	0.0028 J
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.012	0.014	0.02	0.024	0.02	0.015	0.01	0.01	0.0012	0.000089
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.012	0.013	0.02	0.024	0.02	0.015	0.0098	0.0098	0.0011	0.000081
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.012	0.013	0.02	0.024	0.02	0.014	0.0094	0.0094	0.001	0.000039
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 3.9 UJ	< 3.7 UJ	< 5.2 U	< 4.5 UJ	< 4.0 UJ	< 3.4 UJ	36	45 J	2.0 J	< 2.2 U
Aroclor 1221	11104-28-2	µg/kg		< 3.9 U	< 3.7 U	< 5.2 U	< 4.5 U	< 4.0 U	< 3.4 U	< 3.5 U	< 3.2 U	< 2.2 U	< 2.2 U
Aroclor 1232	11141-16-5	µg/kg		< 3.9 U	< 3.7 U	< 5.2 U	< 4.5 U	< 4.0 U	< 3.4 U	< 3.5 U	< 3.2 U	< 2.2 U	< 2.2 U
Aroclor 1242	53469-21-9	µg/kg		< 3.9 U	< 3.7 U	< 5.2 U	< 4.5 U	< 4.0 U	< 3.4 U	< 3.5 U	< 3.2 U	< 2.2 U	< 2.2 U
Aroclor 1248	12672-29-6	µg/kg		< 3.9 U	< 3.7 U	< 5.2 U	< 4.5 U	< 4.0 U	< 3.4 U	< 3.5 U	< 3.2 U	< 2.2 U	0.77 J
Aroclor 1254	11097-69-1	µg/kg		< 3.9 U	< 3.7 U	< 5.2 U	230 J	180 J	170 J	< 3.5 U	< 3.2 U	< 2.2 U	< 2.2 U
Aroclor 1260	11096-82-5	µg/kg		240 J	86	320 J	< 4.5 U	< 4.0 U	140	11	31	1.2 J	0.46 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		240	86	320	230	180	310	47	76	3.2	1.2
Pesticides													
2,4-DDD	53-19-0	µg/kg		2.49 J	2.30 J	0.513 J	0.783 J	1.54 J	1.66 J	2.55	4.27	0.0922 J	0.043 JN
2,4-DDE	3424-82-6	µg/kg		1.02 J	0.562 J	0.269 J	0.476 J	0.663 J	1.20 J	1.14 J	2.83	0.0419 J	0.022 JN
2,4-DDT	789-02-6	µg/kg		0.186 J	< 0.041 UJ	0.32 JN	0.229 J	0.185 J	0.11 J	0.115 J	0.192 J	< 0.019 UJ	< 0.028 UJ
4,4'-DDD	72-54-8	µg/kg		6.83 J	4.57 J	1.05 J	2.05 J	4.80 J	6.35 J	6.84	11.4	0.261 J	0.14 JN
4,4'-DDE	72-55-9	µg/kg		10.2	4.66	3.57	6.15	9.28	13.4	19.5	38.6	0.662 J	0.353 J
4,4'-DDT	50-29-3	µg/kg		0.402 J	< 0.258 UJ	1.20 J	0.771 J	0.949 J	0.510 J	0.907 J	0.361 J	0.0718 J	< 0.059 UJ
DDx (b)	T_DDx (PDI)	µg/kg		21.1	12.2	6.92	10.5	17.4	23.2	31.1	57.7	1.14	0.588
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		140	150	21 J	71 J	110	60	57	98	1.9	0.93 J
Acenaphthene	83-32-9	µg/kg		99	89	37 J	88 J	120	150	44	60	1.1	1.2 J
Acenaphthylene	208-96-8	µg/kg		96	110	28 J	71 J	60	63	43	68	1.9	0.89 J
Anthracene	120-12-7	µg/kg		190	150	66 J	140	170	120	68	130	2.0	1.3 J
Benz(a)anthracene	56-55-3	µg/kg		200	200	170	280	230	280	180	310	6.7	1.7 J
Benzo(a)pyrene	50-32-8	µg/kg		180	200	170	270	220	220	140	210	3.8	1.5 J
Benzo(b)fluoranthene	205-99-2	µg/kg		250	260	370	430	300	490	200	320	5.2	2.0 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		210	300	190	260	220	260	150	210	5.0	2.4 J
Benzo(k)fluoranthene	207-08-9	µg/kg		83	84	110 J	180	100	130	59	100	1.7	0.60 J
Chrysene	218-01-9	µg/kg		280	260	270	400	300	330	210	370	6.2	2.2 J
Dibenz(a,h)anthracene	53-70-3	µg/kg		21 J	29 J	39 J	46 J	29 J	34 J	29	38	0.56 J	0.33 J
Fluoranthene	206-44-0	µg/kg		730	780	510	880	810	1000	360	550	6.9	3.1 J
Fluorene	86-73-7	µg/kg		120	110	33 J	83 J	120	160	41	55	1.0 J	0.49 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		170	250	170	260	200	260	140	160	3.2	1.5 J
Naphthalene	91-20-3	µg/kg		280	310	53 J	190	220	130	100	160	2.9	1.8 J
Phenanthrene	85-01-8	µg/kg		670	690	240	590	700	870	300	510	8.2	4.1 J
Pyrene	129-00-0	µg/kg		860	940	530	980	960	1100	440	810	16	5.5 J
Total PAHs (b)	T_PAH (PDI)	µg/kg		4600	4900	3000	5200	4900	5700	2600	4200	74	32
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		260	300	280	420	320	360	220	330	5.9	2.4

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S213	SC-S213	SC-S213	SC-S213	SC-S213	SC-S213	SC-S218	SC-S218	SC-S218	SC-S218
		Sample ID	PDI-SC-S213-10TO11.8	PDI-SC-S213-11.8TO12.8	PDI-SC-S213-2TO4	PDI-SC-S213-4TO6	PDI-SC-S213-6TO8	PDI-SC-S213-8TO10	PDI-SC-S218-0TO2	PDI-SC-S218-2TO4.5	PDI-SC-S218-4.5TO6	PDI-SC-S218-6TO8
		Sample Date	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/2/2018	8/2/2018	8/2/2018	8/2/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	10-11.8 ft	11.8-12.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft	2-4.5 ft	4.5-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	51.7	53.1	38.1	43.0	49.9	56.2	56.1	61.9	88.7	89.1
Total Solids@70C	TSOLID70	%	52	53	39	43	50	56	60	65	91	91
Total Solids (%)	%SOLID	%	52.6	53.9	38.5	42.7	50.3	55.4	59.4	63.1	89.4	88.3
Clay	GS-Clay	%	21.4	12.7	26.5	32.1	12.6	22.1	9.0	10.5	1.5	1.4
Gravel	GS-Gravel	%	0	0	0	0	0	0	0.2	0	0	0
Sand, Coarse	GS-Csand	%	0.2	0.1	0	0.1	0.1	0.3	0	0	0.1	0.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	2.24	2.99	5.601	7.806	5.116	8.761	25.81	25.91	77.29	82.13
Sand, Fine (#230) (d)	GS-Fsand	%	2.9	3.9	6.7	9.1	6.1	11.6	31.7	31.9	77.9	82.3
Sand, Medium	GS-Msand	%	0.1	0.2	0.3	0.3	0.3	0.1	0.5	0.9	9.9	13.4
Silt (#200) (d)	GS-Silt-200	%	75.95	84.00	67.69	59.69	81.88	68.73	64.48	62.68	11.30	2.964
Silt (#230) (d)	GS-Silt	%	75.3	83.1	66.6	58.4	80.9	65.9	58.6	56.7	10.7	2.8
Percent Fines (e)	GS-FINES	%	97.35	96.7	94.19	91.79	94.48	90.83	73.48	73.18	12.8	4.364
Liquid Limit	GS-LL	None										53
Plasticity Index	GS-PI	None										13
Plasticity Limit	GS-PL	None										40
Total Organic Carbon	TOC	mg/kg	56000	65000	50000	45000	54000	27000	29000	28000	770 J	410 J

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
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DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S218	SC-S219	SC-S219	SC-S219	SC-S221	SC-S221	SC-S221	SC-S221	SC-S222	SC-S222
			Sample ID	PDI-SC-S218-8TO9.6	PDI-SC-S219-0TO2	PDI-SC-S219-2TO4	PDI-SC-S219-4TO5.2	PDI-SC-S221-0TO2	PDI-SC-S221-2TO4	PDI-SC-S221-4TO6	PDI-SC-S221-6TO8.1	PDI-SC-S222-0TO2	PDI-SC-S222-11.2TO13.2
			Sample Date	8/2/2018	8/7/2018	8/7/2018	8/7/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/7/2018	8/7/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	8-9.6 ft	0-2 ft	2-4 ft	4-5.2 ft	0-2 ft	2-4 ft	4-6 ft	6-8.1 ft	0-2 ft	11.2-13.2 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.0024 J	0.33	0.0020 J	0.0014 J	0.15	0.20	0.18	0.092	28	0.0014 J+
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.00063 J	0.091	< 0.00017 U	0.00033 J+	0.029	0.036	0.035	0.022	5.7	0.00031 JN
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		< 0.000083 U	0.0062	< 0.00019 U	< 0.00015 U	0.0017 JN	0.0023 J	0.0020 J	0.0013 J+	0.29 J	0.00027 J+
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00026 J+	0.0024 J	< 0.00012 U	< 0.000099 U	0.0015 J	0.0017 J	0.0015 J	0.00085 J+	0.045 J	< 0.000077 U
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		< 0.000074 U	0.017	< 0.00017 U	< 0.000024 U	0.0025 J	0.0026 J	0.0025 J	< 0.00068 U	0.12 J	< 0.000053 U
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		< 0.000063 U	0.012	< 0.00011 U	0.000063 JN	0.0050 J	0.0066	0.0059	0.0048	0.27 J	< 0.000060 U
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		< 0.000070 U	0.0054	< 0.00016 U	< 0.000025 U	0.0013 J	0.0015 J	0.0013 JN	< 0.00058 U	0.061 J	< 0.000054 U
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.00012 J	0.0042	< 0.00011 U	0.00013 J+	0.0041 J	0.0047 J	0.0041 J	0.0029 J	0.25 J	0.00015 JN
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.000046 U	0.00062 J+	0.00052 JN	< 0.00018 U	< 0.00030 U	< 0.00031 U	0.00035 J	< 0.00032 U	< 0.029 UJ	0.00021 JN
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		< 0.00013 U	0.0015 J	< 0.00017 U	< 0.000020 U	0.00076 JN	< 0.00025 U	0.00096 J	0.00051 JN	0.090 J	< 0.000045 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		< 0.000073 U	0.0013 J	< 0.00011 U	0.000037 J+	0.00053 JN	0.00058 JN	0.00091 J	0.00040 JN	0.064	< 0.000026 U
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.000049 U	0.0021 J	< 0.00014 U	< 0.000021 U	0.00098 JN	0.0010 J	0.00090 J	0.00062 JN	< 0.027 UJ	< 0.000045 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		< 0.000077 U	0.0028 J	< 0.00011 U	< 0.000014 U	0.00079 J	0.00081 J	0.00085 J	0.00052 J	0.021	< 0.000027 U
2,3,7,8-TCDD	1746-01-6	µg/kg		< 0.000062 U	0.00050 JN	< 0.000094 U	0.000038 JN	0.00066 J	0.0013	0.0011	0.00052 J	0.39 J	< 0.000022 U
2,3,7,8-TCDF	51207-31-9	µg/kg		< 0.000048 U	0.0029	< 0.000062 U	< 0.000036 U	0.00089 J	0.0016	0.0011	0.0017	0.038 J	0.000038 JN
OCDD	3268-87-9	µg/kg		0.034	3.8 J	0.021	0.020	1.4	2.2	2.1	1.0	440 J	0.016 J+
OCDF	39001-02-0	µg/kg		0.0026 J	0.29	0.0011 J	0.0020 J	0.099	0.20	0.22	0.053	65	0.0010 J
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.00014	0.013	0.00016	0.000092	0.0056	0.0068	0.007	0.0038	1.1	0.000087
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.00014	0.013	0.00011	0.000057	0.005	0.0067	0.0069	0.0034	1.1	0.000044
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.000079	0.013	0.000027	0.000038	0.0047	0.0066	0.0068	0.0032	1.1	0.000022
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.3 U	< 3.2 U	< 2.7 UJ	< 2.7 UJ	< 4.5 UJ	20 J	23 J	12 J	4700	< 3.0 U
Aroclor 1221	11104-28-2	µg/kg		< 2.3 U	< 3.2 UJ	< 2.7 UJ	< 2.7 UJ	< 4.5 UJ	< 3.9 UJ	< 3.5 UJ	< 3.5 UJ	< 250 U	< 3.0 UJ
Aroclor 1232	11141-16-5	µg/kg		< 2.3 U	< 3.2 U	< 2.7 UJ	< 2.7 UJ	< 4.5 U	< 3.9 U	< 3.5 U	< 3.5 U	< 250 U	< 3.0 U
Aroclor 1242	53469-21-9	µg/kg		< 2.3 U	< 3.2 U	< 2.7 UJ	< 2.7 UJ	< 4.5 U	< 3.9 U	< 3.5 U	< 3.5 U	< 250 U	< 3.0 U
Aroclor 1248	12672-29-6	µg/kg		< 2.3 U	< 3.2 U	< 2.7 UJ	< 2.7 UJ	< 4.5 U	< 3.9 U	< 3.5 U	< 3.5 U	< 250 U	< 3.0 U
Aroclor 1254	11097-69-1	µg/kg		< 2.3 U	< 3.2 U	< 2.7 UJ	1.6 J	< 4.5 U	< 3.9 U	< 3.5 U	< 3.5 U	< 250 U	< 3.0 U
Aroclor 1260	11096-82-5	µg/kg		< 2.3 UJ	35 J	< 2.7 UJ	< 2.7 UJ	4.9	7.9 J	10	9.3	430 J	< 3.0 U
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		< 2.3 UJ	35	< 2.7 UJ	1.6	4.9	28	33	21	5100	< 3 UJ
Pesticides													
2,4-DDD	53-19-0	µg/kg		0.047 JN	2.30	< 0.028 U	0.194 J	0.441 J	1.76 J	1.07 J	0.690 J	350 J	0.0375 J
2,4-DDE	3424-82-6	µg/kg		0.032 JN	0.623 J	< 0.015 U	0.0984 J	0.121 J	0.700 J	0.422 J	0.227 J	185 J	0.0152 J
2,4-DDT	789-02-6	µg/kg		< 0.026 UJ	0.141 J	< 0.029 UJ	< 0.041 UJ	< 0.034 U	< 0.039 U	< 0.038 U	0.0924 J	6.28 J	< 0.023 U
4,4'-DDD	72-54-8	µg/kg		0.142 J	7.56	0.057 JN	0.534 J	1.40 J	4.76	3.14	3.01	293 J	0.0500 J
4,4'-DDE	72-55-9	µg/kg		0.434 J	5.30	0.0614 J	3.61 J	3.67	14.5 J	9.43 J	6.28	2470	0.0669 J
4,4'-DDT	50-29-3	µg/kg		< 0.060 UJ	0.466 J	0.162 J	0.190 J	0.243 J	0.331 J	0.221 J	0.218 J	9.76 J	0.149 J
DDx (b)	T_DDx (PDI)	µg/kg		0.685	16.4	0.295	4.65	5.89	22.1	14.3	10.5	3310	0.33
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		0.90 J	190	3.1	1.7 J	< 110 U	< 100 U	7.7 J	10 J	1100	1.7 J
Acenaphthene	83-32-9	µg/kg		0.90 J	350	1.0 J	7.6	< 110 U	< 100 U	6.8 J	9.8 J	990	< 14 U
Acenaphthylene	208-96-8	µg/kg		0.94 J	90	1.0 J	2.7 J	< 110 U	14 J	6.1 J	8.2 J	760	< 14 U
Anthracene	120-12-7	µg/kg		0.77 J	410	0.26 J	0.64 J	< 110 U	< 100 U	5.8 J	2.9 J	1700	< 14 U
Benz(a)anthracene	56-55-3	µg/kg		1.8 J	360	< 1.2 U	2.1 J	46 J	61 J	44	35	520	< 14 U
Benzo(a)pyrene	50-32-8	µg/kg		1.6 J	260	< 1.2 U	< 3.8 U	35 J	52 J	36 J	28	540	< 14 U
Benzo(b)fluoranthene	205-99-2	µg/kg		2.0 J	380	< 1.2 U	2.8 J	80 J	100	62	51	550	3.1 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		2.3 J	230	< 1.2 U	1.3 J	45 J	50 J	32 J	26	420	< 14 U
Benzo(k)fluoranthene	207-08-9	µg/kg		0.62 J	110	< 1.2 U	0.77 J	27 J	47 J	23 J	15 J	250	< 14 U
Chrysene	218-01-9	µg/kg		2.5 J	430	< 1.2 U	2.0 J	78 J	77 J	60	44	900	< 14 U
Dibenz(a,h)anthracene	53-70-3	µg/kg		0.42 J	41 J	< 1.2 U	< 3.8 U	< 110 U	< 100 UJ	< 43 U	3.0 J	< 230 U	< 14 U
Fluoranthene	206-44-0	µg/kg		3.0 J	910	0.83 J	2.4 J	150	210	170	91	1700	< 14 U
Fluorene	86-73-7	µg/kg		0.32 J	150	0.36 J	0.93 J	15 J	22 J	22 J	15 J	3200	< 14 U
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		1.4 J	230	< 1.2 U	1.6 J	32 J	48 J	29 J	25	350	< 14 U
Naphthalene	91-20-3	µg/kg		1.8 J	610	2.2	3.1 J	< 110 U	< 100 U	8.4 J	< 18 U	600	3.6 J
Phenanthrene	85-01-8	µg/kg		2.7 J	1700	1.3	3.8	100 J	150	140	94	7400	4.1 J
Pyrene	129-00-0	µg/kg		5.3 J	1300	1.9	3.2 J	100 J	180	160	94	2400	3.4 J
Total PAHs (b)	T_PAH (PDI)	µg/kg		29	7800	13	39	820	1100	830	560	23000	30
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		2.5	400	< 1.2 U	2.6	110	120	71	42	800	7.3

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S218	SC-S219	SC-S219	SC-S219	SC-S221	SC-S221	SC-S221	SC-S221	SC-S222	SC-S222
		Sample ID	PDI-SC-S218-8TO9.6	PDI-SC-S219-0TO2	PDI-SC-S219-2TO4	PDI-SC-S219-4TO5.2	PDI-SC-S221-0TO2	PDI-SC-S221-2TO4	PDI-SC-S221-4TO6	PDI-SC-S221-6TO8.1	PDI-SC-S222-0TO2	PDI-SC-S222-11.2TO13.2
		Sample Date	8/2/2018	8/7/2018	8/7/2018	8/7/2018	8/3/2018	8/3/2018	8/3/2018	8/3/2018	8/7/2018	8/7/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	8-9.6 ft	0-2 ft	2-4 ft	4-5.2 ft	0-2 ft	2-4 ft	4-6 ft	6-8.1 ft	0-2 ft	11.2-13.2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	79.6	60.9	74.3	71.9	43.8	49.7	55.0	55.2	39.8	66.0
Total Solids@70C	TSOLID70	%	81	68	75	73	47	50	56	57	41	67
Total Solids (%)	%SOLID	%	79.7	56.8	73.5	73.4	45	49.3	55.8	53.9	42	67.3
Clay	GS-Clay	%	1.6	7.2	0	7.1	19.7	19.9	19.2	20.3	7.7	7.4
Gravel	GS-Gravel	%	0	8.9	0.3	0	0	0	0	0	0	0
Sand, Coarse	GS-Csand	%	0.3	2.7	0.1	0	0	0.1	0	0	0.4	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	81.49	30.35	93.13	38.3					25.21	3.192
Sand, Fine (#230) (d)	GS-Fsand	%	81.7	31.2	93.6	43.9	7.5	8.8	14.1	15.6	30.7	5.0
Sand, Medium	GS-Msand	%	12.7	21.7	1.0	2.0	0.2	0.1	0.1	0.1	1.0	0.1
Silt (#200) (d)	GS-Silt-200	%	3.903	29.14	5.469	52.59					65.68	89.30
Silt (#230) (d)	GS-Silt	%	3.7	28.3	5.0	47.0	72.6	71.1	66.5	64.1	60.2	87.5
Percent Fines (e)	GS-FINES	%	5.503	36.34	5.469	59.69	94.4	93.3	89.4	88	73.38	96.7
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	770 J	20000	1700 J	7300	36000	35000	27000	30000	300000	20000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S226	SC-S226
			Sample ID	PDI-SC-S222-13.2TO15.2	PDI-SC-S222-2TO4	PDI-SC-S222-4TO5	PDI-SC-S222-5TO7.2	PDI-SC-S222-5TO7.2D	PDI-SC-S222-7.2TO9.2	PDI-SC-S222-9.2TO11.2	PDI-SC-S226-0TO2	PDI-SC-S226-10TO12
			Sample Date	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/6/2018	8/6/2018
			Sample Type Code	N	N	N	N	FD	N	N	N	N
			Depth	13.2-15.2 ft	2-4 ft	4-5 ft	5-7.2 ft	5- ft	7.2-9.2 ft	9.2-11.2 ft	0-2 ft	10-12 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.0017 J+	3.5 J	2.8 J	0.035 J	0.033	0.0031 J	0.0025 J	0.11	0.21
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.00031 J+	0.74 J	1.2 J	0.0089 J	0.0084	0.00051 J	0.00035 J+	0.018 JN	0.032
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.00017 J+	0.044 J	0.069 J	< 0.00066 UJ	0.00050 J+	0.00018 JN	0.00020 JN	0.0013 J	0.0019 J
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.00013 JN	0.012	0.0065	0.00027 J+	0.00024 J+	0.00014 J+	< 0.000058 U	0.0010 JN	0.0020 J
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	< 0.000034 U	0.029	0.033 J	< 0.00021 U	< 0.00011 U	< 0.000047 U	< 0.000044 U	< 0.00072 U	0.0034 J
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.000091 J	0.078	0.082	0.00078 JN	0.00080 J	0.00013 J	< 0.000054 U	0.0043 J	0.017
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	< 0.000034 U	0.026	0.048 J	0.00036 J	< 0.00011 U	< 0.000044 U	< 0.000044 U	< 0.00067 U	0.0021 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.00018 J	0.034	0.023	0.00054 J	0.00065 J	0.00022 JN	< 0.000051 U	0.0029 J	0.0060
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.00017 U	< 0.0024 U	< 0.017 UJ	< 0.00016 U	< 0.00016 U	0.00023 J+	0.00018 JN	< 0.00034 U	< 0.00029 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	< 0.000031 U	0.0099	0.0081	< 0.000088 U	0.00014 JN	< 0.000037 U	< 0.000041 U	0.00065 J	0.0015 J
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	< 0.000020 U	0.0049	< 0.0040 UJ	< 0.000075 U	0.000061 JN	< 0.000028 U	< 0.000027 U	0.00040 J	0.00089 J
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	< 0.000029 U	0.0072	0.016 J	< 0.00017 U	0.00012 J	< 0.000037 U	< 0.000036 U	< 0.00054 U	0.0013 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	< 0.000022 U	0.0058	0.0094 J	< 0.000077 U	< 0.000056 U	< 0.000029 U	< 0.000028 U	0.00058 J	0.0015 J
2,3,7,8-TCDD		1746-01-6	µg/kg	< 0.000016 U	0.036	0.0067	0.00030 JN	0.00027 JN	< 0.000024 U	< 0.000021 U	0.00036 JN	0.00056 JN
2,3,7,8-TCDF		51207-31-9	µg/kg	0.000026 JN	0.0077 JN	0.0082 J	0.00021 J	0.00020 J	0.000031 J	< 0.000013 U	0.00091 J	0.0034
OCDD		3268-87-9	µg/kg	0.019 J+	53 J	30 J	0.63	0.59	0.040	0.030	1.1	2.1
OCDF		39001-02-0	µg/kg	0.0014 J	7.1 J	5.1 J	0.087	0.081	0.0033 J	0.0024 J	0.079	0.11
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.000086	0.13	0.091	0.0012	0.0012	0.00014	0.000079	0.0038	0.0092
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.000071	0.13	0.091	0.00094	0.00096	0.00012	0.000059	0.0035	0.0089
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.000055	0.13	0.091	0.00079	0.00082	0.0001	0.000038	0.0033	0.0086
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 3.2 U	1200	< 280 U	< 2.5 U	< 2.4 U	< 3.4 UJ	1.4 J	< 4.4 UJ	< 3.5 UJ
Aroclor 1221		11104-28-2	µg/kg	< 3.2 UJ	< 350 U	< 280 U	< 2.5 UJ	< 2.4 UJ	< 3.4 UJ	< 3.0 U	< 4.4 UJ	< 3.5 UJ
Aroclor 1232		11141-16-5	µg/kg	< 3.2 U	< 350 U	< 280 U	37 J	26 J	< 3.4 UJ	< 3.0 U	< 4.4 UJ	< 3.5 UJ
Aroclor 1242		53469-21-9	µg/kg	1.5 J	< 350 U	< 280 U	< 2.5 U	< 2.4 U	< 3.4 UJ	< 3.0 U	< 4.4 UJ	< 3.5 UJ
Aroclor 1248		12672-29-6	µg/kg	< 3.2 U	< 350 U	< 280 U	27	19	< 3.4 UJ	< 3.0 U	< 4.4 UJ	< 3.5 UJ
Aroclor 1254		11097-69-1	µg/kg	< 3.2 U	< 350 U	< 280 U	< 2.5 U	< 2.4 U	< 3.4 UJ	< 3.0 U	< 4.4 UJ	< 3.5 UJ
Aroclor 1260		11096-82-5	µg/kg	< 3.2 U	300 J	180 J	< 2.5 U	< 2.4 U	< 3.4 UJ	< 3.0 UJ	< 4.4 UJ	3.8 J
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	1.5	1500	180	64	45	< 3.4 UJ	1.4	< 4.4 UJ	3.8
Pesticides												
2,4-DDD		53-19-0	µg/kg	0.0449 J	70.0 J	106 J	0.670 J	1.46 J	< 0.040 U	0.057 JN	0.399 J	0.351 J
2,4-DDE		3424-82-6	µg/kg	0.023 JN	25.8 J	37.6 J	0.418 J	0.661 J	0.0832 J	0.0419 J	0.142 J	0.160 J
2,4-DDT		789-02-6	µg/kg	< 0.023 U	1.8 JN	2.4 JN	< 0.038 UJ	0.040 JN	< 0.051 U	< 0.020 UJ	0.116 J	0.125 J
4,4'-DDD		72-54-8	µg/kg	0.0809 J	99.2 J	286 J	1.49	4.42	< 0.051 U	0.0679 J	1.24 J	0.903 J
4,4'-DDE		72-55-9	µg/kg	0.277 J	514 J	2080	10.8 J	23.8 J	0.184 J	0.296 J	3.61	3.96
4,4'-DDT		50-29-3	µg/kg	0.075 JN	< 4.5 UJ	7.08 J	< 0.069 UJ	0.102 J	0.332 J	0.141 J	0.333 J	0.433 J
DDx	(b)	T_DDx (PDI)	µg/kg	0.512	713	2520	13.4	30.5	0.625	0.614	5.84	5.93
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	< 15 U	400	300	5.6	4.9	1.0 J	1.5 J	< 100 U	26 J
Acenaphthene		83-32-9	µg/kg	< 15 U	380	530	11	11	20	< 15 U	< 100 U	22 J
Acenaphthylene		208-96-8	µg/kg	< 15 U	150 J	270	4.6	3.2 J	< 8.2 U	< 15 U	39 J	43 J
Anthracene		120-12-7	µg/kg	< 15 U	430	610	7.3	4.2	1.2 J	< 15 U	14 J	38 J
Benz(a)anthracene		56-55-3	µg/kg	2.8 J	430	550	9.4	4.6	2.7 J	3.3 J	40 J	77 J
Benzo(a)pyrene		50-32-8	µg/kg	< 15 U	390	500	10	4.9	< 8.2 U	< 15 U	34 J	60 J
Benzo(b)fluoranthene		205-99-2	µg/kg	3.0 J	540	650	12	5.6	3.7 J	4.0 J	63 J	90
Benzo(g,h,i)perylene		191-24-2	µg/kg	< 15 U	350	620	13	6.8	1.6 J	< 15 U	26 J	49 J
Benzo(k)fluoranthene		207-08-9	µg/kg	< 15 U	160 J	180	4.4	2.5 J	1.3 J	< 15 U	19 J	43 J
Chrysene		218-01-9	µg/kg	< 15 U	950	1100	18 J	7.9 J	2.9 J	< 15 U	59 J	110
Dibenz(a,h)anthracene		53-70-3	µg/kg	< 15 U	52 J	89 J	1.4 J	< 3.5 U	< 8.2 U	< 15 U	< 100 U	12 J
Fluoranthene		206-44-0	µg/kg	< 15 U	1400	1700	26 J	14 J	3.8 J	< 15 U	140	190
Fluorene		86-73-7	µg/kg	1.8 J	330	140	4.3	3.2 J	1.3 J	< 15 U	13 J	33 J
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	< 15 U	300	360	8.3	4.2	2.1 J	< 15 U	33 J	45 J
Naphthalene		91-20-3	µg/kg	3.2 J	310	390	7.0	6.4	3.0 J	4.2 J	35 J	91
Phenanthrene		85-01-8	µg/kg	5.9 J	2100	3000	41	36	6.3 J	5.8 J	80 J	160
Pyrene		129-00-0	µg/kg	5.1 J	1900	2500	44 J	22 J	7.2 J	4.9 J	130	220
Total PAHs	(b)	T_PAH (PDI)	µg/kg	37	11000	13000	230	140	66	39	830	1300
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	8.1	570	750	14	8.1	5	8.2	98	94

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S222	SC-S226	SC-S226
		Sample ID	PDI-SC-S222-13.2TO15.2	PDI-SC-S222-2TO4	PDI-SC-S222-4TO5	PDI-SC-S222-5TO7.2	PDI-SC-S222-5TO7.2D	PDI-SC-S222-7.2TO9.2	PDI-SC-S222-9.2TO11.2	PDI-SC-S226-0TO2	PDI-SC-S226-10TO12
		Sample Date	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/7/2018	8/6/2018	8/6/2018
		Sample Type Code	N	N	N	N	FD	N	N	N	N
		Depth	13.2-15.2 ft	2-4 ft	4-5 ft	5-7.2 ft	5- ft	7.2-9.2 ft	9.2-11.2 ft	0-2 ft	10-12 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	63.0	56.4	64.5	79.8	79.9	58.3	64.3	44.3	57.2
Total Solids@70C	TSOLID70	%	65	57	61	79	79	58	67	45	58
Total Solids (%)	%SOLID	%	63.5	58.9	60	77.4	80.2	59	65.7	48.6	57.3
Clay	GS-Clay	%	11.8	9.1	6.2	0		10.4	7.9	15.6	13.6
Gravel	GS-Gravel	%	0	0	0.6	0		0	0	0	0
Sand, Coarse	GS-Csand	%	0.1	0.1	0.3	0		0.2	0.3	0	0.5
Sand, Fine (#200) (d)	GS-Fsand-200	%	7.426	20.61	34.71	68.21		11.05	9.089	7.48	4.725
Sand, Fine (#230) (d)	GS-Fsand	%	9.7	26.9	37.6	68.5		13.5	13.5	10.2	7.3
Sand, Medium	GS-Msand	%	0.2	1.0	6.3	27.5		0.8	0.2	0.2	0.2
Silt (#200) (d)	GS-Silt-200	%	80.47	69.18	51.78	4.287		77.54	82.51	76.71	81.07
Silt (#230) (d)	GS-Silt	%	78.2	62.9	48.9	4.0		75.1	78.1	74.0	78.5
Percent Fines (e)	GS-FINES	%	92.27	78.28	57.98	4.287		87.94	90.41	92.31	94.67
Liquid Limit	GS-LL	None									
Plasticity Index	GS-PI	None									
Plasticity Limit	GS-PL	None									
Total Organic Carbon	TOC	mg/kg	22000	60000	74000	1100 J	1200 J	35000	22000	45000	40000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S226	SC-S226	SC-S226	SC-S226	SC-S226	SC-S226	SC-S228	SC-S229	SC-S229	SC-S229
			Sample ID	PDI-SC-S226-12TO14	PDI-SC-S226-14TO15.8	PDI-SC-S226-2TO4	PDI-SC-S226-4TO6	PDI-SC-S226-6TO8	PDI-SC-S226-8TO10	PDI-SC-S228-0TO2.3	PDI-SC-S229-0TO2	PDI-SC-S229-2TO4	PDI-SC-S229-4TO6
			Sample Date	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/9/2018	8/9/2018	8/9/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	12-14 ft	14-15.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2.3 ft	0-2 ft	2-4 ft	4-6 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.16	0.33	0.11	0.068	0.30	0.18	0.023	0.41	0.13	0.019
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.022	0.049	0.020	0.012	0.045	0.031	0.0033	0.078	0.041	0.0071
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0015 J	0.0029 J	0.0012 J	0.00084 J	0.0026 J	0.0018 J	< 0.00029 U	0.0060	0.0021 J	0.00053 J
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0017 J	0.0028 J	0.0010 J	0.00079 J	0.0022 J	0.0018 J	0.00039 J+	0.0042 J	0.0018 J	0.00038 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0031 J	0.0053	0.0018 J	< 0.00036 U	0.0035 J	0.0024 J	0.00045 J	0.012	0.0027 J	0.00045 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.012	0.017	0.0039 J	0.0030 J	0.010	0.015	0.00099 J	0.019	0.0045	0.00077 JN
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0018 J	0.0033 J	0.00094 J	< 0.00036 U	0.0022 J	0.0015 J	< 0.00016 U	0.0065	0.0036 J	0.00067 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0045	0.0073	0.0027 J	0.0019 J	0.0051	0.0056	0.00076 J	0.0099	0.0030 J	0.00045 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00030 U	0.00032 JN	< 0.00019 U	< 0.00020 U	0.00044 J+	< 0.00036 U	< 0.00011 U	< 0.00082 U	0.00038 J	< 0.00018 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0012 J	0.0018 J	0.00055 J	0.00044 J	0.0011 J	0.0012 J	< 0.000070 U	0.0023 J	< 0.00042 U	< 0.00021 U
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.00083 J	0.0021 J	0.00039 J	< 0.00014 U	0.00093 J	0.00064 JN	0.00017 J	0.0021 J	< 0.00036 U	< 0.00015 U
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0012 J	0.0022 J	0.00045 J	< 0.00030 U	0.0011 J	0.00076 J	0.00020 J	0.0029 J	0.0011 J	< 0.00018 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0013 J	0.0039 J	0.00049 JN	0.00029 JN	0.0012 J	0.0010 J	< 0.000061 U	0.0027 J	0.00057 JN	< 0.00015 U
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00068 J	0.0010	0.00070 J	0.00038 JN	0.0014	0.00097	0.00014 JN	0.0011 JN	0.00034 JN	< 0.00014 U
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0021 JN	0.0050	0.00083 J	0.00065 JN	0.0026	0.0097	0.00045 J	0.0047	0.00061 J	< 0.00011 U
OCDD	3268-87-9	µg/kg		1.5	3.1	1.3	0.77	3.3	1.9	0.25	4.4	2.3	0.38
OCDF	39001-02-0	µg/kg		0.071	0.18	0.15	0.059	0.22	0.12	0.0096	0.23	0.12	0.021
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0073	0.013	0.0043	0.0026	0.01	0.0089	0.00084	0.017	0.0049	0.00076
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0073	0.013	0.0042	0.0023	0.01	0.0089	0.00074	0.017	0.0044	0.00069
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0072	0.013	0.0042	0.0021	0.01	0.0089	0.00067	0.017	0.0042	0.00058
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 3.5 UJ	< 3.4 U	< 3.9 UJ	< 3.3 UJ	< 3.8 U	< 3.7 UJ	< 5.0 U	< 4.5 UJ	< 3.2 UJ	< 2.6 UJ
Aroclor 1221	11104-28-2	µg/kg		< 3.5 UJ	< 3.4 U	< 3.9 UJ	< 3.3 UJ	< 3.8 U	< 3.7 UJ	< 5.0 U	< 4.5 U	< 3.2 U	< 2.6 U
Aroclor 1232	11141-16-5	µg/kg		< 3.5 UJ	< 3.4 U	< 3.9 UJ	< 3.3 UJ	< 3.8 U	< 3.7 UJ	< 5.0 U	< 4.5 U	< 3.2 U	< 2.6 U
Aroclor 1242	53469-21-9	µg/kg		5.6 J	< 3.4 U	10 J	2.3 J	< 3.8 U	< 3.7 UJ	< 5.0 U	< 4.5 U	< 3.2 U	< 2.6 U
Aroclor 1248	12672-29-6	µg/kg		< 3.5 UJ	< 3.4 U	< 3.9 UJ	< 3.3 UJ	35 J	6.9 J	< 5.0 U	< 4.5 U	< 3.2 U	< 2.6 U
Aroclor 1254	11097-69-1	µg/kg		< 3.5 UJ	< 3.4 U	< 3.9 UJ	< 3.3 UJ	< 3.8 U	< 3.7 UJ	< 5.0 U	130 J	< 3.2 U	< 2.6 U
Aroclor 1260	11096-82-5	µg/kg		6.3 J	13 J	3.9 J	2.3 J	6.7 J	3.9 J	16 J	< 4.5 U	24	2.4 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		12	13	14	4.6	42	11	16	130	24	2.4
Pesticides													
2,4-DDD	53-19-0	µg/kg		0.567 J	0.659 J	0.505 J	0.677 J	1.45 J	0.430 J	0.334 J	0.673 J	1.64 J	0.0570 J
2,4-DDE	3424-82-6	µg/kg		0.214 J	0.410 J	0.258 J	0.221 J	0.783 J	0.222 J	0.0446 J	0.448 J	0.345 J	0.0218 J
2,4-DDT	789-02-6	µg/kg		0.0796 J	0.131 J	0.125 J	0.116 J	0.10 JN	0.0610 J	0.148 J	0.199 J	< 0.054 UJ	< 0.025 UJ
4,4'-DDD	72-54-8	µg/kg		1.93	2.01	1.39 J	2.40	3.53	1.17 J	0.845 J	1.88 J	5.16 J	0.179 J
4,4'-DDE	72-55-9	µg/kg		5.52	8.21	5.00	5.13	13.0	4.70	0.399 J	6.89	3.80	0.159 J
4,4'-DDT	50-29-3	µg/kg		0.248 J	0.423 J	0.313 J	0.307 J	0.393 J	0.235 J	0.561 J	0.444 J	0.41 JN	0.097 JN
DDx (b)	T_DDx (PDI)	µg/kg		8.56	11.8	7.59	8.85	19.3	6.82	2.33	10.5	11.4	0.526
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		26 J	47 J	12 J	8.5 J	36 J	49 J	< 120 UJ	35 J	34	3.1
Acenaphthene	83-32-9	µg/kg		28 J	61 J	15 J	17 J	30 J	28 J	< 120 UJ	47 J	21	1.5
Acenaphthylene	208-96-8	µg/kg		49 J	77 J	< 96 U	28 J	49 J	77 J	< 120 UJ	38 J	26	2.4
Anthracene	120-12-7	µg/kg		53 J	120	18 J	16 J	44 J	38 J	16 J	63 J	39	3.0
Benz(a)anthracene	56-55-3	µg/kg		85 J	150	39 J	27 J	83 J	60 J	19 J	150	97	4.7
Benzo(a)pyrene	50-32-8	µg/kg		63 J	110	35 J	35 J	61 J	51 J	38 J	150	79	4.7
Benzo(b)fluoranthene	205-99-2	µg/kg		100	170	50 J	37 J	92	75 J	< 120 UJ	290	120	6.7
Benzo(g,h,i)perylene	191-24-2	µg/kg		51 J	72 J	29 J	24 J	54 J	41 J	20 J	150	94	6.9
Benzo(k)fluoranthene	207-08-9	µg/kg		51 J	56 J	17 J	15 J	44 J	36 J	< 120 UJ	76 J	47	2.3
Chrysene	218-01-9	µg/kg		120	180	62 J	38 J	100	110	56 J	230	130	6.2
Dibenz(a,h)anthracene	53-70-3	µg/kg		14 J	17 J	< 96 U	< 81 U	< 91 U	< 89 U	< 120 UJ	< 110 U	11 J	0.99 J
Fluoranthene	206-44-0	µg/kg		240	500	110	79 J	250	220	< 120 UJ	430	210	12
Fluorene	86-73-7	µg/kg		37 J	70 J	18 J	12 J	53 J	40 J	< 120 UJ	41 J	23	2.0
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		56 J	65 J	34 J	25 J	49 J	42 J	< 120 UJ	150	92	6.4
Naphthalene	91-20-3	µg/kg		79 J	130	42 J	32 J	68 J	170	< 120 UJ	110	65	6.8
Phenanthrene	85-01-8	µg/kg		200	400	81 J	67 J	170	200	46 J	250	180	12
Pyrene	129-00-0	µg/kg		250	480	120	83	250	270	67 J	550	310	19
Total PAHs (b)	T_PAH (PDI)	µg/kg		1500	2700	780	580	1500	1600	380	2800	1600	100
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		100	170	96	85	130	110	100	260	120	7.5

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S226	SC-S226	SC-S226	SC-S226	SC-S226	SC-S226	SC-S228	SC-S229	SC-S229	SC-S229
		Sample ID	PDI-SC-S226-12TO14	PDI-SC-S226-14TO15.8	PDI-SC-S226-2TO4	PDI-SC-S226-4TO6	PDI-SC-S226-6TO8	PDI-SC-S226-8TO10	PDI-SC-S228-0TO2.3	PDI-SC-S229-0TO2	PDI-SC-S229-2TO4	PDI-SC-S229-4TO6
		Sample Date	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/9/2018	8/9/2018	8/9/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	12-14 ft	14-15.8 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2.3 ft	0-2 ft	2-4 ft	4-6 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	56.6	55.9	51.1	57.4	52.2	52.7	80.3	44.1	63.0	74.4
Total Solids@70C	TSOLID70	%	57	57	53	57	53	54	85	44	64	75
Total Solids (%)	%SOLID	%	57.7	56	53.2	58.4	54.1	53.4	81	43.8	60.4	74.1
Clay	GS-Clay	%	15.5	14.4	17.6	14.3	15.4	16.0	1.5	23.9	9.9	1.8
Gravel	GS-Gravel	%	0	0	0	0	0	0	5.9	0	0	0.7
Sand, Coarse	GS-Csand	%	0.4	1.1	0	0	0.1	2.7	2.9	0.1	1.2	0.4
Sand, Fine (#200) (d)	GS-Fsand-200	%	6.273	7.235	8.392	13.59	9.145	6.559	51.11	10.88	46.58	70.02
Sand, Fine (#230) (d)	GS-Fsand	%	8.9	9.7	12.0	17.9	11.9	9.3	53.0	11.8	48.6	73.4
Sand, Medium	GS-Msand	%	0.1	0.5	0.2	0.1	0.2	0.1	27.4	2.0	9.1	6.1
Silt (#200) (d)	GS-Silt-200	%	77.82	76.86	73.80	72.10	75.15	74.54	11.18	63.11	33.21	20.87
Silt (#230) (d)	GS-Silt	%	75.2	74.4	70.2	67.8	72.4	71.8	9.3	62.2	31.2	17.5
Percent Fines (e)	GS-FINES	%	93.32	91.26	91.4	86.4	90.55	90.54	12.68	87.01	43.11	22.67
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	41000	42000	41000	33000	46000	49000	3800	46000	22000	3800

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
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c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

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CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S229	SC-S229	SC-S229	SC-S230	SC-S230	SC-S230	SC-S230	SC-S230	SC-S230	SC-S232
			Sample ID	PDI-SC-S229-6TO8	PDI-SC-S229-8TO9.9	PDI-SC-S229-9.9TO12.5	PDI-SC-S230-0TO2	PDI-SC-S230-10TO11.4	PDI-SC-S230-2TO4	PDI-SC-S230-4TO6	PDI-SC-S230-6TO8	PDI-SC-S230-8TO10	PDI-SC-S232-0TO2
			Sample Date	8/9/2018	8/9/2018	8/9/2018	8/10/2018	8/8/2018	8/10/2018	8/10/2018	8/10/2018	8/8/2018	8/16/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	6-8 ft	8-9.9 ft	9.9-12.5 ft	0-2 ft	10-11.4 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.00060 JN	< 0.00014 U	0.0011 J	0.32	0.50	0.55	0.34	0.43	0.46	0.38
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		< 0.00015 U	< 0.00011 U	< 0.00020 U	0.052	0.082	0.13	0.064	0.078	0.076	0.13
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		< 0.00017 U	< 0.00014 U	< 0.00023 U	0.0035 J	0.0058	0.0074	0.0042 J	0.0052	0.0053	0.0077
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		< 0.00029 U	< 0.00015 U	< 0.00025 U	0.0032 J	0.0037 J	0.0045 J	0.0030 J	0.0035 J	0.0037 J	0.0038 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		< 0.00024 U	< 0.00015 U	< 0.00023 U	0.0050 J	0.0060	0.010	0.0046 J	0.0049	0.0051	0.0057
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		< 0.00026 U	< 0.00015 U	< 0.00023 U	0.021	0.022	0.027	0.018	0.019	0.020	0.013
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		< 0.00023 U	< 0.00014 U	< 0.00023 U	0.0045 J	0.0078	0.011	0.0052	0.0075	0.0071	0.014
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		< 0.00025 U	< 0.00014 U	< 0.00022 U	0.0083	0.0088	0.0097	0.0077	0.0078	0.0085	0.0066
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00018 U	0.00020 JN	< 0.00019 U	0.00051 J+	< 0.00054 U	< 0.00090 U	0.00054 J+	< 0.00055 U	0.00046 J+	0.0012 J+
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		< 0.00026 U	< 0.00029 U	< 0.00034 U	0.0023 J	0.0020 J	0.0025 J	0.0018 J	0.0018 J	0.0018 J	0.0018 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		< 0.00019 U	< 0.00018 U	< 0.00020 U	0.00093 J	0.0022 J	0.0038 J	0.0017 J	0.0022 J	0.0021 J	0.0018 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		< 0.00017 U	< 0.00011 U	< 0.00019 U	0.0015 J	0.0019 J	0.0023 J	0.0015 J	0.0017 J	0.0018 J	0.0020 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		< 0.00024 U	< 0.00018 U	< 0.00021 U	0.0015 J	0.0023 J	0.0034 J	0.0016 J	0.0019 J	0.0019 J	0.0018 J
2,3,7,8-TCDD	1746-01-6	µg/kg		< 0.00016 U	< 0.00015 U	< 0.00016 U	0.0012	0.0013	0.0013	0.00093 J	0.0014	0.0012	0.0026
2,3,7,8-TCDF	51207-31-9	µg/kg		< 0.00010 U	< 0.000080 U	< 0.000097 U	0.0053	0.0028	0.0044	0.0023	0.0022 JN	0.0025	0.0013
OCDD	3268-87-9	µg/kg		0.0070	0.0033 J	0.011	3.9	7.4 J	6.9 J	4.1 J	5.9 J	6.7 J	5.8 J
OCDF	39001-02-0	µg/kg		< 0.00033 U	< 0.00026 U	< 0.00031 U	0.17	0.31	0.37	0.20	0.27	0.27	0.40
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.00014	0.00017	0.00018	0.014	0.018	0.021	0.013	0.016	0.016	0.017
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.00013	0.00015	0.00018	0.014	0.018	0.021	0.013	0.016	0.016	0.017
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0000021	0.00000099	0.000014	0.014	0.018	0.021	0.013	0.015	0.016	0.017
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.7 UJ	< 2.6 UJ	< 2.7 UJ	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	10
Aroclor 1221	11104-28-2	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	< 3.3 U
Aroclor 1232	11141-16-5	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	< 3.3 UJ
Aroclor 1242	53469-21-9	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	< 3.3 U
Aroclor 1248	12672-29-6	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	< 3.3 U
Aroclor 1254	11097-69-1	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	< 4.6 UJ	< 3.5 U	< 4.1 UJ	< 3.6 U	< 3.5 U	< 3.6 U	< 3.3 U
Aroclor 1260	11096-82-5	µg/kg		< 2.7 U	< 2.6 U	< 2.7 U	13 J	55	27 J	32	45 J	35	36
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		< 2.7 UJ	< 2.6 UJ	< 2.7 UJ	13	55	27	32	45	35	46
Pesticides													
2,4-DDD	53-19-0	µg/kg		< 0.022 UJ	< 0.029 U	< 0.082 U	0.516 J	1.34 J	1.16 J	0.659 J	0.650 J	0.890 J	2.66
2,4-DDE	3424-82-6	µg/kg		0.013 JN	0.0206 J	0.0790 J	0.179 J	0.383 J	0.416 J	0.214 J	0.284 J	0.284 J	1.25 J
2,4-DDT	789-02-6	µg/kg		< 0.021 UJ	< 0.028 U	< 0.037 U	0.078 JN	0.11 JN	0.158 J	0.118 J	0.084 JN	0.152 J	< 0.058 UJ
4,4'-DDD	72-54-8	µg/kg		< 0.021 UJ	< 0.029 U	< 0.038 U	1.69 J	4.56	3.10	2.27	2.11	2.86	9.60
4,4'-DDE	72-55-9	µg/kg		< 0.016 U	0.0287 J	< 0.063 U	3.92	8.45	6.43	4.35	5.26	6.74	15.7 J
4,4'-DDT	50-29-3	µg/kg		< 0.027 UJ	< 0.047 U	< 0.082 U	0.171 J	0.637 J	0.502 J	0.243 J	0.221 J	0.341 J	0.41 JN
DDx (b)	T_DDx (PDI)	µg/kg		0.0265	0.0728	0.12	6.55	15.5	11.8	7.85	8.61	11.3	29.6
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		0.56 J	0.46 J	< 1.4 U	55 J	73	92 J	75	64	64	150
Acenaphthene	83-32-9	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	86	89	91 J	68	90	61	150
Acenaphthylene	208-96-8	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	69	49	90 J	59	45	42 J	91
Anthracene	120-12-7	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	66	72	120	63	110	48	92
Benz(a)anthracene	56-55-3	µg/kg		0.45 J	0.30 J	0.21 J	74	170	200	90	150	120	140
Benzo(a)pyrene	50-32-8	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	77	130	190	92	130	86	160
Benzo(b)fluoranthene	205-99-2	µg/kg		1.1 J	0.76 J	< 1.4 U	100	180	260	140	170	120	170
Benzo(g,h,i)perylene	191-24-2	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	64	110	230	110	140	82	130
Benzo(k)fluoranthene	207-08-9	µg/kg		0.28 J	0.20 J	< 1.4 U	40 J	63	110	49	64	47	55 J
Chrysene	218-01-9	µg/kg		0.43 J	< 1.2 U	< 1.4 U	130	210	270	180	200	150	180
Dibenz(a,h)anthracene	53-70-3	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	< 57 U	21 J	< 96 U	< 46 U	17 J	14 J	< 85 U
Fluoranthene	206-44-0	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	360	400	620	330	400	270	550
Fluorene	86-73-7	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	67	78	83 J	57	77	42 J	110
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	55 J	100	160	78	140	75	110
Naphthalene	91-20-3	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	170	100	210	150	110	77	400
Phenanthrene	85-01-8	µg/kg		< 1.4 U	< 1.2 U	< 1.4 U	360	370	570	350	410	240	550
Pyrene	129-00-0	µg/kg		0.85 J	0.44 J	0.34 J	410	440	800	440	510	330	750
Total PAHs (b)	T_PAH (PDI)	µg/kg		5.1	3.4	2.7	2200	2700	4100	2400	2800	1900	3800
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		0.86	0.71	0.72	130	200	300	150	190	130	250

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S229	SC-S229	SC-S229	SC-S230	SC-S230	SC-S230	SC-S230	SC-S230	SC-S230	SC-S232
		Sample ID	PDI-SC-S229-6TO8	PDI-SC-S229-8TO9.9	PDI-SC-S229-9.9TO12.5	PDI-SC-S230-0TO2	PDI-SC-S230-10TO11.4	PDI-SC-S230-2TO4	PDI-SC-S230-4TO6	PDI-SC-S230-6TO8	PDI-SC-S230-8TO10	PDI-SC-S232-0TO2
		Sample Date	8/9/2018	8/9/2018	8/9/2018	8/10/2018	8/8/2018	8/10/2018	8/10/2018	8/10/2018	8/8/2018	8/16/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	6-8 ft	8-9.9 ft	9.9-12.5 ft	0-2 ft	10-11.4 ft	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	72.1	76.0	72.5	41.5	56.0	48.9	53.5	54.3	56.2	58.8
Total Solids@70C	TSOLID70	%	72	77	75	44	56	50	55	56	56	59
Total Solids (%)	%SOLID	%	72	74.7	66	43.3	56.4	47.7	53.8	55.1	55.8	55.7
Clay	GS-Clay	%	6.5	4.5	3.8	21.3	11.9	19.5	15.1	14.0	17.1	10.0
Gravel	GS-Gravel	%	0	0	0	0	0	0	0	0	2.4	0
Sand, Coarse	GS-Csand	%	0	0.3	0	0	0.5	1.0	0.3	0.2	0.5	0
Sand, Fine (#200) (d)	GS-Fsand-200	%	37.67	42.02	51.45	3.911	6.673	3.971	8.201	4.911	6.059	15.67
Sand, Fine (#230) (d)	GS-Fsand	%	44.3	46.8	55.6	11.0 L	9.9	5.1	10.0	6.9	9.3	20.1
Sand, Medium	GS-Msand	%	0.4	14.8	9.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2
Silt (#200) (d)	GS-Silt-200	%	55.42	38.47	35.54	74.58	80.72	75.32	76.09	80.78	73.74	74.12
Silt (#230) (d)	GS-Silt	%	48.8	33.7	31.4	67.5	77.5	74.2	74.3	78.8	70.5	69.7
Percent Fines (e)	GS-FINES	%	61.92	42.97	39.34	95.88	92.62	94.82	91.19	94.78	90.84	84.12
Liquid Limit	GS-LL	None										53
Plasticity Index	GS-PI	None										9
Plasticity Limit	GS-PL	None										44
Total Organic Carbon	TOC	mg/kg	6100	4300	4300	77000	68000	71000	61000	55000	58000	53000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S232	SC-S232	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238
		Sample ID	PDI-SC-S232-2TO4	PDI-SC-S232-4TO6.2	PDI-SC-S238-0TO2	PDI-SC-S238-10TO12.4	PDI-SC-S238-12.4TO13.4	PDI-SC-S238-2TO4	PDI-SC-S238-2TO4D	PDI-SC-S238-4TO6	PDI-SC-S238-6TO8	PDI-SC-S238-8TO10
		Sample Date	8/16/2018	8/16/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018
		Sample Type Code	N	N	N	N	N	N	FD	N	N	N
		Depth	2-4 ft	4-6.2 ft	0-2 ft	10-12.4 ft	12.4-13.4 ft	2-4 ft	2- ft	4-6 ft	6-8 ft	8-10 ft
Chemical	**CAS_RN**	**Units**										
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.12	0.017	0.29	0.48 J	0.56 J	0.39 J	0.38 J	0.51 J	0.31	0.56 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.10	0.010	0.068	0.11	0.19	0.099 J	0.099	0.43	0.058	0.10
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.0040 J+	0.00096 J+	0.0043 J	0.0062	0.0096	0.0064	0.0066	0.0077	0.0041	0.0071
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.0010 J	0.00027 J+	0.0027 J	0.0037 JN	0.0048	0.0036 J	0.0031 J	0.0041 J	0.0025 J	0.0053 JN
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.0038 J	0.00052 J+	0.0055	0.0093	0.012	0.0075 J	0.0097	0.012	0.0051	0.013
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0059	0.00092 J	0.016	0.021	0.021	0.017 J	0.017	0.022	0.014	0.022
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.011	0.0015 J	0.0063	0.0097	0.014	0.014 J	0.014	0.013	0.0066	0.011
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0019 J	0.00057 J	0.0075	0.012	0.011	0.018	0.0085	0.012	0.0070	0.012
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.00084 U	< 0.00068 U	< 0.00075 U	< 0.00097 U	< 0.0012 U	0.00078 J	< 0.00093 U	< 0.0012 U	< 0.00071 U	< 0.0011 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00077 J	0.00018 J	0.0019 J	0.0022 JN	0.0025 J	0.0024 J	< 0.00073 U	0.0024 J	0.0016 J	0.0029 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.0012 J	0.00022 J+	0.0015 JN	0.0027 J	0.0021 J	0.0028 J	0.0027 J	0.0039 J	0.0016 J	0.0036 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.0014 J	0.00030 JN	0.0020 J	0.0032 J	0.0041 J	0.0032 J	0.0028 J	0.0031 J	0.0018 J	0.0028 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.0012 J	0.00032 J	0.0018 J	0.0027 J	0.0022 J	< 0.0014 UJ	0.0021 J	0.0032 J	0.0016 J	0.0028 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.0010	0.00012 JN	0.0015	0.0032	0.0013 JN	0.0013 JN	0.0017	0.0016	0.00091 JN	0.0016
2,3,7,8-TCDF	51207-31-9	µg/kg	0.0010	0.00068 J	0.0042	0.0029	0.0019	0.0024	0.0020	0.0036 JN	0.0024	0.0034 J
OCDD	3268-87-9	µg/kg	2.3	0.30	3.7	6.3 J	9.1 J	6.3 J	6.1 J	7.6 J	4.6 J	7.1 J
OCDF	39001-02-0	µg/kg	0.17	0.018	0.26	0.32	0.53	0.29	0.27	0.43	0.25	0.28
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.0078	0.0013	0.013	0.02	0.022	0.018	0.015	0.024	0.012	0.021
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.0078	0.0012	0.013	0.019	0.022	0.018	0.015	0.024	0.012	0.021
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.0077	0.0011	0.013	0.018	0.022	0.017	0.015	0.024	0.012	0.021
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016	12674-11-2	µg/kg	< 3.5 U	< 2.9 U	< 4.0 UJ	< 18 U	< 3.5 UJ	< 3.8 UJ	< 4.0 UJ	< 3.9 UJ	< 3.3 UJ	< 3.5 UJ
Aroclor 1221	11104-28-2	µg/kg	< 3.5 U	< 2.9 U	< 4.0 U	< 18 U	< 3.5 U	< 3.8 U	< 4.0 U	< 3.9 U	< 3.3 U	< 3.5 U
Aroclor 1232	11141-16-5	µg/kg	< 3.5 UJ	< 2.9 UJ	< 4.0 U	< 18 U	< 3.5 U	< 3.8 U	< 4.0 U	< 3.9 U	< 3.3 U	< 3.5 U
Aroclor 1242	53469-21-9	µg/kg	< 3.5 U	< 2.9 U	< 4.0 U	< 18 U	< 3.5 U	< 3.8 U	< 4.0 U	< 3.9 U	< 3.3 U	< 3.5 U
Aroclor 1248	12672-29-6	µg/kg	< 3.5 U	< 2.9 U	< 4.0 U	< 18 U	< 3.5 U	< 3.8 U	< 4.0 U	< 3.9 U	< 3.3 U	< 3.5 U
Aroclor 1254	11097-69-1	µg/kg	< 3.5 U	< 2.9 U	< 4.0 U	< 18 U	92 J	< 3.8 U	< 4.0 U	180 J	< 3.3 U	< 3.5 U
Aroclor 1260	11096-82-5	µg/kg	48 J	11	53	240 J	< 3.5 U	62	67	< 3.9 U	42	110 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	48	11	53	240	92	62	67	180	42	110
Pesticides												
2,4-DDD	53-19-0	µg/kg	1.97	2.20	0.837 J	1.14 J	0.737 J	1.64 J	1.40 J	1.64 J	0.30 JN	0.816 J
2,4-DDE	3424-82-6	µg/kg	0.472 J	0.211 J	0.298 J	0.846 J	0.648 J	0.497 J	0.482 J	0.700 J	0.15 JN	0.38 JN
2,4-DDT	789-02-6	µg/kg	< 0.047 UJ	0.15 JN	< 0.051 U	0.283 J	< 0.044 U	0.13 JN	0.179 J	0.26 JN	0.17 JN	0.199 J
4,4'-DDD	72-54-8	µg/kg	6.47	7.80	2.43	3.10	2.25	5.13	4.76	5.17	1.56 J	2.80
4,4'-DDE	72-55-9	µg/kg	7.56	2.18	5.11	9.67	7.25 J	7.70	7.13	9.07	3.00	5.46 J
4,4'-DDT	50-29-3	µg/kg	0.408 J	0.204 J	< 0.22 U	0.711 J	< 0.11 U	0.345 J	0.29 JN	0.952 J	< 0.10 U	0.451 J
DDx (b)	T_DDx (PDI)	µg/kg	16.9	12.7	8.79	15.8	10.9	15.4	14.2	17.8	5.23	10.1
Semivolatile Organics												
2-Methylnaphthalene	91-57-6	µg/kg	260 J	69	72	98	67	140	150	94	51	140
Acenaphthene	83-32-9	µg/kg	230 J	87	55	140	54	110	150	78	42	220
Acenaphthylene	208-96-8	µg/kg	110	37 J	60	68	48	97	120	66	46	63
Anthracene	120-12-7	µg/kg	110 J	26 J	110	160	77	150	210	180	56	150
Benz(a)anthracene	56-55-3	µg/kg	130	25 J	160	210	160	210	230	220	88	180
Benzo(a)pyrene	50-32-8	µg/kg	97 J	28 J	160	200	150	220	230	240	79	180
Benzo(b)fluoranthene	205-99-2	µg/kg	130	35 J	240	300	190	290	330	340	110	230
Benzo(g,h,i)perylene	191-24-2	µg/kg	110 J	30 J	150	190	180	230	240	240	77	170
Benzo(k)fluoranthene	207-08-9	µg/kg	41 J	14 J	86	120	80	99	130	110	29 J	85
Chrysene	218-01-9	µg/kg	180 J	43 J	210	270	240	270	280	290	120	220
Dibenz(a,h)anthracene	53-70-3	µg/kg	< 15 UJ	< 68 U	27 J	28 J	20 J	28 J	29 J	42 J	12 J	23 J
Fluoranthene	206-44-0	µg/kg	470 J	140	500	710	410	830	940	650	310	680
Fluorene	86-73-7	µg/kg	150 J	44 J	60	130	53	120	140	93	45	160
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	94	25 J	140	170	170	200	200	220	67	150
Naphthalene	91-20-3	µg/kg	1200 J	340	190	180	130	350	390	190	120	420
Phenanthrene	85-01-8	µg/kg	590 J	190	340	620	410	610	690	490	260	730
Pyrene	129-00-0	µg/kg	550 J	160	600	790	600	1000	1100	830	340	800
Total PAHs (b)	T_PAH (PDI)	µg/kg	4500	1300	3200	4400	3000	5000	5600	4400	1900	4600
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	140	71	240	300	220	320	340	360	120	260

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S232	SC-S232	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238	SC-S238
		Sample ID	PDI-SC-S232-2TO4	PDI-SC-S232-4TO6.2	PDI-SC-S238-0TO2	PDI-SC-S238-10TO12.4	PDI-SC-S238-12.4TO13.4	PDI-SC-S238-2TO4	PDI-SC-S238-2TO4D	PDI-SC-S238-4TO6	PDI-SC-S238-6TO8	PDI-SC-S238-8TO10
		Sample Date	8/16/2018	8/16/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018
		Sample Type Code	N	N	N	N	N	N	FD	N	N	N
		Depth	2-4 ft	4-6.2 ft	0-2 ft	10-12.4 ft	12.4-13.4 ft	2-4 ft	2- ft	4-6 ft	6-8 ft	8-10 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	55.8	65.9	47.9	56.7	56.7	50.8	50.1	50.8	59.7	55.9
Total Solids@70C	TSOLID70	%	58	68	48	57	57	51	51	52	58	57
Total Solids (%)	%SOLID	%	57.4	65.3	47.9	57.2	57.4	52.2	50.9	51.7	59.2	55.4
Clay	GS-Clay	%	13.2	7.9	17.0	16.7	22.3	16.1		21.4	14.0	9.5
Gravel	GS-Gravel	%	0	0	0	2.8	0.7	0		0.5	1.5	0.8
Sand, Coarse	GS-Csand	%	0.1	0	0	1.0	0.4	0		0.2	0.5	0.5
Sand, Fine (#200) (d)	GS-Fsand-200	%	21.17	40.17	7.716	4.497	6.124	2.838		3.636	3.86	6.66
Sand, Fine (#230) (d)	GS-Fsand	%	24.3	50.2	10.1	6.6	7.2	4.0		4.2	6.3	9.3
Sand, Medium	GS-Msand	%	0.8	0.3	0.3	0.2	0.9	0.2		0.2	0.1	0.2
Silt (#200) (d)	GS-Silt-200	%	64.72	51.62	74.88	75.10	69.57	80.96		74.06	80.13	82.43
Silt (#230) (d)	GS-Silt	%	61.6	41.6	72.5	73.0	68.5	79.8		73.5	77.7	79.8
Percent Fines (e)	GS-FINES	%	77.92	59.52	91.88	91.8	91.87	97.06		95.46	94.13	91.93
Liquid Limit	GS-LL	None								93		
Plasticity Index	GS-PI	None								44		
Plasticity Limit	GS-PL	None								49		
Total Organic Carbon	TOC	mg/kg	79000	29000	59000	44000	49000	71000	71000	70000	37000	50000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S245	SC-S245	SC-S248	SC-S248	SC-S248	SC-S251	SC-S254	SC-S254	SC-S254	SC-S254
			Sample ID	PDI-SC-S245-0TO2	PDI-SC-S245-2TO3.8	PDI-SC-S248-0TO2	PDI-SC-S248-2TO4	PDI-SC-S248-4TO6.2	PDI-SC-S251-0TO2.5	PDI-SC-S254-0.3TO2	PDI-SC-S254-10TO12	PDI-SC-S254-12TO14	PDI-SC-S254-14TO15.4
			Sample Date	7/25/2018	7/25/2018	8/7/2018	8/7/2018	8/7/2018	7/27/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	0-2 ft	2-3.8 ft	0-2 ft	2-4 ft	4-6.2 ft	0-2.5 ft	0.3-2 ft	10-12 ft	12-14 ft	14-15.4 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.082	0.31	0.067	0.054	0.020	0.065	0.91 J	0.73 J	0.41	0.41 J
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.014	0.13	0.012 JN	0.012	0.0033 JN	0.0041	0.13	0.15 J	0.12	0.097
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.00096 J	0.0084	0.00089 J	0.00077 J	0.00039 J+	0.00027 JN	0.0097	0.0092 J	0.0098	0.0070
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.00064 J+	0.0023 J	0.00086 J	0.00059 JN	< 0.000084 U	0.00077 J	0.0066	0.0051 J	0.0033 J	0.0026 JN
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0029 J	0.0045	0.0011 J	0.00082 J	0.00039 J	0.00042 J	0.0090	0.0034 J	0.0053	0.0042
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0026 J	0.013	0.0026 J	0.0020 J	0.00081 J	0.0079	0.030	0.022	0.015	0.013
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0016 J	0.022	0.00068 J	0.00064 J	0.00025 J	0.00043 J	0.012	0.0090	0.0092	0.0071
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0018 J	0.0056	0.0020 J	0.0013 J	0.00073 J	0.0021 J	0.019	0.0067	0.0059	0.0054
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		0.00014 J	0.00096 J	0.00024 J+	< 0.00014 U	< 0.00015 U	< 0.000080 U	< 0.0011 U	< 0.0010 U	< 0.0010 U	< 0.00072 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		< 0.00019 U	0.0016 J	0.00039 J	< 0.000094 U	0.00014 JN	0.00028 J	0.0042 J	0.0032 J	0.0015 J	0.0015 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.00081 JN	0.0015 J	0.00029 J	0.00019 JN	0.00011 J	< 0.000070 U	0.0025 J	0.0012 JN	0.0011 J	0.0014 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.00097 J	0.0017 JN	0.00035 J	< 0.00022 U	0.00014 J	0.00018 J	0.0033 J	0.0028 J	0.0016 J	0.0021 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0017 JN	0.0016 J	0.00034 J	< 0.00012 U	0.00012 J	< 0.000073 U	0.0025 J	0.0014 J	0.0014 J	0.0012 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00027 JN	0.0022	0.00028 JN	0.00023 JN	0.00031 JN	< 0.00035 U	0.0026	0.0015	0.00091	0.00085 JN
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0017	0.00088 J	0.00059 J	0.00066 J	0.00044 J	0.00039 JN	0.0011	0.00088	0.00070 J	0.00067 J
OCDD	3268-87-9	µg/kg		0.71	6.2 J	0.64	0.60	0.27	0.47	14 J	14 J	8.7 J	8.6 J
OCDF	39001-02-0	µg/kg		0.032	0.41	0.049	0.051	0.017	0.013	0.49	0.74	0.60	0.47
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0033	0.016	0.0026	0.0017	0.0011	0.0025	0.031	0.024	0.015	0.014
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0027	0.016	0.0025	0.0015	0.00076	0.0025	0.031	0.023	0.015	0.014
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.0024	0.016	0.0023	0.0014	0.00061	0.0023	0.031	0.023	0.015	0.014
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 2.7 UJ	< 3.6 UJ	< 4.8 U	< 3.5 U	< 3.5 U	< 2.7 U	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1221	11104-28-2	µg/kg		< 2.7 U	< 3.6 UJ	< 4.8 UJ	< 3.5 UJ	< 3.5 UJ	< 2.7 UJ	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1232	11141-16-5	µg/kg		< 2.7 U	< 3.6 UJ	< 4.8 U	< 3.5 U	< 3.5 U	< 2.7 U	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1242	53469-21-9	µg/kg		< 2.7 U	< 3.6 UJ	2.2 J	< 3.5 U	< 3.5 U	< 2.7 U	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1248	12672-29-6	µg/kg		< 2.7 UJ	< 3.6 UJ	< 4.8 U	< 3.5 U	< 3.5 U	< 2.7 U	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1254	11097-69-1	µg/kg		230 J	< 3.6 UJ	3.3 J	< 3.5 U	< 3.5 U	5.0 J	< 3.7 U	< 3.4 U	< 3.3 UJ	< 3.2 U
Aroclor 1260	11096-82-5	µg/kg		< 2.7 U	12 J	< 4.8 U	13 J	1.9 J	< 2.7 UJ	160 J	41 J	19 J	8.5 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		230	12	5.5	13	1.9	5	160	41	19	8.5
Pesticides													
2,4-DDD	53-19-0	µg/kg		1.89	2.42	0.300 J	3.27 J	0.353 J	0.145 J	1.63 J	1.05 J	2.25 J	1.64 J
2,4-DDE	3424-82-6	µg/kg		0.114 J	0.307 J	0.0759 J	0.123 J	0.0899 J	0.0515 J	0.546 J	0.486 J	0.495 J	0.341 J
2,4-DDT	789-02-6	µg/kg		0.121 J	0.076 JN	0.128 J	0.502 J	0.113 J	< 0.0392 U	0.128 J	0.076 JN	0.174 J	0.0736 J
4,4'-DDD	72-54-8	µg/kg		3.58	8.49	0.987 J	15.7	1.20 J	0.400 J	6.01	3.92	7.55	5.47
4,4'-DDE	72-55-9	µg/kg		2.54	4	2.10 J	3.56	1.58 J	0.500 J	9.19	6.70	6.67	4.46
4,4'-DDT	50-29-3	µg/kg		< 0.338 U	< 0.233 U	0.370 J	2.00	0.25 JN	< 0.124 U	0.26 JN	0.269 J	0.29 JN	0.158 J
DDx (b)	T_DDx (PDI)	µg/kg		8.41	15.4	3.96	25.2	3.59	1.16	17.8	12.5	17.4	12.1
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		25	170	16 J	70 J	98	16	110	120	150	130
Acenaphthene	83-32-9	µg/kg		150	110	30	99	160	640	82	61	140	87
Acenaphthylene	208-96-8	µg/kg		25	120	24	21	84	8.6	44	43	77	76
Anthracene	120-12-7	µg/kg		73	85	36	82	200	20	89	74	95	100
Benz(a)anthracene	56-55-3	µg/kg		220	80	55	88	280	19	180	140	130	170
Benzo(a)pyrene	50-32-8	µg/kg		140	64	25	49	240	19	120	110	96	120
Benzo(b)fluoranthene	205-99-2	µg/kg		240	96	42	74	250	29	170	160	120	150
Benzo(g,h,i)perylene	191-24-2	µg/kg		110	66	21 J	38	250	15	120	120	120	130
Benzo(k)fluoranthene	207-08-9	µg/kg		75	32 J	17 J	30	90	7.7	49	44	35	44
Chrysene	218-01-9	µg/kg		250	140	61	86	270	30	200	170	140	180
Dibenz(a,h)anthracene	53-70-3	µg/kg		21	8.3 J	4.7 J	6.6 J	37	3.5 J	19	20	13 J	18
Fluoranthene	206-44-0	µg/kg		550	350	200	440	770	110	360	330	400	410
Fluorene	86-73-7	µg/kg		92	94	38	140	160	38	58	61	110	80
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		100	53	24	40	210	17	120	130	110	120
Naphthalene	91-20-3	µg/kg		82	380	25	180 J	220	160	84	140	310	240
Phenanthrene	85-01-8	µg/kg		410	450	150	450 J	710	460	350	330	470	430
Pyrene	129-00-0	µg/kg		510	410	160	330	900	130	410	380	500	500
Total PAHs (b)	T_PAH (PDI)	µg/kg		3100	2700	930	2200	4900	1700	2600	2400	3000	3000
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		220	96	42	76	350	29	190	170	150	180

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S245	SC-S245	SC-S248	SC-S248	SC-S248	SC-S251	SC-S254	SC-S254	SC-S254	SC-S254
		Sample ID	PDI-SC-S245-0TO2	PDI-SC-S245-2TO3.8	PDI-SC-S248-0TO2	PDI-SC-S248-2TO4	PDI-SC-S248-4TO6.2	PDI-SC-S251-0TO2.5	PDI-SC-S254-0.3TO2	PDI-SC-S254-10TO12	PDI-SC-S254-12TO14	PDI-SC-S254-14TO15.4
		Sample Date	7/25/2018	7/25/2018	8/7/2018	8/7/2018	8/7/2018	7/27/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	0-2 ft	2-3.8 ft	0-2 ft	2-4 ft	4-6.2 ft	0-2.5 ft	0.3-2 ft	10-12 ft	12-14 ft	14-15.4 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	72.9	55.2	39.7	55.1	56.6	72.9	53.1	57.9	59.3	60.6
Total Solids@70C	TSOLID70	%	76	58	41	58	58	84	54	60	60	62
Total Solids (%)	%SOLID	%	71	55.1	44.9	56.5	56.8	81.1	54.9	56.9	61.4	61.7
Clay	GS-Clay	%	3.6	11.2	3.1	10.0	13.7	3.1	15.4	12.2	9.3	10.3
Gravel	GS-Gravel	%	4.3	0.7	0	0	0	1.0	0	0	0	1.5
Sand, Coarse	GS-Csand	%	1.3	0.3	0	0.7	0	1.3	0	0.9	1.2	0.5
Sand, Fine (#200) (d)	GS-Fsand-200	%	49.63	8.34	12.84	29.52	13.06	51.0	24	22.16	26.4	21.65
Sand, Fine (#230) (d)	GS-Fsand	%	51.6	11.4	15.6	35.1	15.9	52.7	27.8	27.4	26.4	27.6
Sand, Medium	GS-Msand	%	23.3	1.1	0.4	2.4	0.8	30.2	0.2	0.3	0.3	0.3
Silt (#200) (d)	GS-Silt-200	%	17.86	78.45	83.65	57.47	72.43	13.5	60.39	64.43	62.8	65.74
Silt (#230) (d)	GS-Silt	%	15.9	75.4	80.9	51.9	69.6	11.8	56.6	59.2	62.8	59.8
Percent Fines (e)	GS-FINES	%	21.46	89.65	86.75	67.47	86.13	16.6	75.79	76.63	72.1	76.04
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	5000	57000	53000	31000 J	41000	3900	51000	36000	46000	44000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S254	SC-S254	SC-S254	SC-S254	SC-S255	SC-S255	SC-S255	SC-S256	SC-S256	SC-S256
			Sample ID	PDI-SC-S254-2TO4	PDI-SC-S254-4TO6	PDI-SC-S254-6TO8	PDI-SC-S254-8TO10	PDI-SC-S255-0TO2.1	PDI-SC-S255-0TO2.1D	PDI-SC-S255-2.1TO4.3	PDI-SC-S256-0TO2	PDI-SC-S256-2TO4	PDI-SC-S256-2TO4D
			Sample Date	8/6/2018	8/6/2018	8/6/2018	8/6/2018	9/5/2018	9/5/2018	9/5/2018	8/16/2018	8/16/2018	8/16/2018
			Sample Type Code	N	N	N	N	N	FD	N	N	N	FD
			Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2.1 ft	0- ft	2.1-4.3 ft	0-2 ft	2-4 ft	2- ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		1.1 J	0.51	0.46 J	1.5 J	0.023	0.022	0.24	0.083	0.27	0.23
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.18	0.089	0.12	0.19	0.0049	0.0044	0.050	0.015 JN	0.044	0.037 JN
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.012	0.0063	0.0094	0.012	0.00056 J+	0.00049 J+	0.0032 J	0.0013 J+	0.0028 J+	0.0029 J+
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0085	0.0038 J	0.0052	0.0095	0.00041 J+	0.00039 J+	0.0013 J	0.0011 J	0.0026 J	0.0024 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.015	0.0060	0.0066	0.011	0.00054 J	0.00053 J	0.0037 J	0.0013 J	0.0036 J	0.0034 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.043	0.019	0.021	0.047	0.00095 J	0.0012 J	0.0062	0.0035 J	0.011	0.010
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.012	0.0066	0.0090	0.0083	0.00030 J	0.00034 J	0.0013 J	0.00080 J	0.0019 J	0.0019 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.022	0.010	0.0099	0.032	0.00084 J	0.00079 J	0.0032 J	0.0022 J	0.0050	0.0042
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00088 U	< 0.00066 U	< 0.00064 U	< 0.0010 U	< 0.0010 U	< 0.00097 U	< 0.00085 U	< 0.00070 U	< 0.00074 U	< 0.00067 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0054	0.0027 J	0.0036 J	0.0082	0.00021 J	0.00017 JN	0.00068 J	0.00048 J	0.0012 J	0.0012 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.0028 J	0.0017 J	0.0020 J	0.0015 J	0.00036 J+	0.00037 J+	0.00043 J+	0.00029 J+	0.00058 JN	0.00065 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0034 J	0.0021 J	0.0020 J	0.0029 J	0.00018 J	0.00019 J	0.00061 J	0.00055 J	0.0014 J	0.0013 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0027 J	0.0015 J	0.0017 J	0.0016 J	0.00023 J+	0.00019 JN	0.00065 J	0.00038 J	0.00097 J	0.00091 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.0027	0.0017	0.0017	0.0032	0.000061 JN	0.000079 JN	0.00016 JN	< 0.00012 U	0.00025 JN	0.00026 JN
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0012	0.0012	0.00097 JN	0.00077 J	0.00048 J+	0.00048 J+	0.00051 J+	0.00076 J	0.00090	0.00080 J
OCDD	3268-87-9	µg/kg		15 J	7.8 J	8.0 J	18 J	0.20	0.20	2.6	0.65	2.3	1.9
OCDF	39001-02-0	µg/kg		0.70	0.50	0.42	0.78	0.018	0.017	0.38	0.049	0.14	0.13
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.037	0.018	0.02	0.046	0.0011	0.0011	0.0066	0.0029	0.0083	0.0075
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.037	0.018	0.02	0.046	0.0011	0.00082	0.0065	0.0029	0.0082	0.0073
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.037	0.018	0.02	0.046	0.001	0.00074	0.0064	0.0028	0.008	0.0072
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1221	11104-28-2	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1232	11141-16-5	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1242	53469-21-9	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1248	12672-29-6	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1254	11097-69-1	µg/kg		< 3.6 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.0 U	< 3.0 UJ	< 3.1 UJ	< 3.3 U	< 3.3 UJ	< 3.2 UJ
Aroclor 1260	11096-82-5	µg/kg		78 J	58 J	11 J	55 J	4.8 J	3.5 J	120 J	7.1	58 J	59 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		78	58	11	55	4.8	3.5	120	7.1	58	59
Pesticides													
2,4-DDD	53-19-0	µg/kg		1.66 J	1.29 J	0.688 J	1.46 J	0.078 JN	0.0717 J	0.303 J	0.091 JN	0.216 J	< 0.52 U
2,4-DDE	3424-82-6	µg/kg		0.483 J	0.390 J	0.240 J	0.494 J	< 0.025 U	0.012 JN	0.042 JN	< 0.020 U	< 0.0539 U	< 0.42 U
2,4-DDT	789-02-6	µg/kg		0.12 JN	0.065 JN	0.074 JN	0.0875 J	< 0.028 U	< 0.031 U	< 0.035 U	< 0.033 UJ	< 0.025 UJ	< 0.25 U
4,4'-DDD	72-54-8	µg/kg		6.49	4.75	2.42	4.22	0.316 J	0.267 J	0.935 J	0.439 J	0.822 J	< 0.25 U
4,4'-DDE	72-55-9	µg/kg		6.98	6.72	4.42	7.42	0.648 J	0.598 J	0.974 J	0.981 J	1.39 J	1.71
4,4'-DDT	50-29-3	µg/kg		1.16 J	0.263 J	0.233 J	0.274 J	0.25 JN	0.0961 J	0.094 JN	< 0.086 UJ	< 0.048 UJ	< 0.79 U
DDx (b)	T_DDx (PDI)	µg/kg		16.9	13.5	8.08	14	1.31	1.06	2.37	1.55	2.45	2.11
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		130	140	44	130	2.4 J	3.4 J	8.4 J	< 190 U	< 180 U	< 180 U
Acenaphthene	83-32-9	µg/kg		73	92	32	64	5.1 J	3.8 J	12 J	43 J	52 J	55 J
Acenaphthylene	208-96-8	µg/kg		44	43	31	45	15 J	8.9 J	17	< 190 U	< 180 U	< 180 U
Anthracene	120-12-7	µg/kg		82	83	43	90	11	13	26	39 J	72 J	62 J
Benz(a)anthracene	56-55-3	µg/kg		210	180	150	180	71	51	110	72 J	89 J	79 J
Benzo(a)pyrene	50-32-8	µg/kg		160	120	87	120	110	71	140	99 J	130 J	130 J
Benzo(b)fluoranthene	205-99-2	µg/kg		230	180	140	180	110	78	160	100 J	150 J	140 J
Benzo(g,h,i)perylene	191-24-2	µg/kg		170	130	85	110	100	64	120	120 J	140 J	130 J
Benzo(k)fluoranthene	207-08-9	µg/kg		68	51	39	51	32	22	34	47 J	56 J	50 J
Chrysene	218-01-9	µg/kg		220	190	150	190	94	71	150	120 J	170 J	150 J
Dibenz(a,h)anthracene	53-70-3	µg/kg		24	19	15 J	20	20	15	25	< 190 U	< 180 U	< 180 U
Fluoranthene	206-44-0	µg/kg		480	380	290	400	200	160	320	300	390	360
Fluorene	86-73-7	µg/kg		71	68	34	74	11	13	22	20 J	35 J	33 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		160	100	88	93	150	100	200	110 J	120 J	110 J
Naphthalene	91-20-3	µg/kg		100	110	55	92	7.8	8.2	18	< 190 U	35 J	34 J
Phenanthrene	85-01-8	µg/kg		430	380	190	390	79	95	150	180 J	260	240
Pyrene	129-00-0	µg/kg		550	460	320	450	270	200	400	350	450	410
Total PAHs (b)	T_PAH (PDI)	µg/kg		3200	2700	1800	2700	1300	980	1900	1800	2300	2200
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		240	190	140	190	160	110	210	220	260	250

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S254	SC-S254	SC-S254	SC-S254	SC-S255	SC-S255	SC-S255	SC-S256	SC-S256	SC-S256
		Sample ID	PDI-SC-S254-2TO4	PDI-SC-S254-4TO6	PDI-SC-S254-6TO8	PDI-SC-S254-8TO10	PDI-SC-S255-0TO2.1	PDI-SC-S255-0TO2.1D	PDI-SC-S255-2.1TO4.3	PDI-SC-S256-0TO2	PDI-SC-S256-2TO4	PDI-SC-S256-2TO4D
		Sample Date	8/6/2018	8/6/2018	8/6/2018	8/6/2018	9/5/2018	9/5/2018	9/5/2018	8/16/2018	8/16/2018	8/16/2018
		Sample Type Code	N	N	N	N	N	FD	N	N	N	FD
		Depth	2-4 ft	4-6 ft	6-8 ft	8-10 ft	0-2.1 ft	0- ft	2.1-4.3 ft	0-2 ft	2-4 ft	2- ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	52.4	57.1	56.5	57.4	66.2	65.6	63.7	59.7	59.7	61.4
Total Solids@70C	TSOLID70	%	54	57	56	58	67	66	65	61	61	61
Total Solids (%)	%SOLID	%	54.2	57.4	54.3	57.6	63.9	64.6	64.8	58.5	59.9	61.8
Clay	GS-Clay	%	16.1	17.4	15.3	12.0	5.4		4.3	5.5	6.5	
Gravel	GS-Gravel	%	0	0	0	0	0		0.1	0	0.1	
Sand, Coarse	GS-Csand	%	0.7	0	1.7	1.0	0.3		0.6	0.2	0	
Sand, Fine (#200) (d)	GS-Fsand-200	%	16	20.01	15.4	17.37	25.5		23.26	5.624	8.445	
Sand, Fine (#230) (d)	GS-Fsand	%	18.9	23.5	15.4	21.6	34.4		35.8	10.7	13.2	
Sand, Medium	GS-Msand	%	0.2	0.1	0.1	0.3	1.5		3.2	0.2	0.2	
Silt (#200) (d)	GS-Silt-200	%	66.89	62.48	67.5	69.42	67.29		68.63	88.47	84.75	
Silt (#230) (d)	GS-Silt	%	64.0	59.0	67.5	65.2	58.4		56.1	83.4	80.0	
Percent Fines (e)	GS-FINES	%	82.99	79.88	82.8	81.42	72.69		72.93	93.97	91.25	
Liquid Limit	GS-LL	None										
Plasticity Index	GS-PI	None										
Plasticity Limit	GS-PL	None										
Total Organic Carbon	TOC	mg/kg	52000	42000	42000	48000	21000	25000	33000	35000	45000	50000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S256	SC-S256	SC-S256	SC-S256	SC-S257	SC-S257	SC-S257	SC-S257	SC-S257	SC-S257
			Sample ID	PDI-SC-S256-4TO6	PDI-SC-S256-6TO8	PDI-SC-S256-8TO9.7	PDI-SC-S256-9.7TO10.7	PDI-SC-S257-0TO2	PDI-SC-S257-10TO12	PDI-SC-S257-12TO14.2	PDI-SC-S257-2TO4	PDI-SC-S257-4TO6	PDI-SC-S257-6TO8
			Sample Date	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018
			Sample Type Code	N	N	N	N	N	N	N	N	N	N
			Depth	4-6 ft	6-8 ft	8-9.7 ft	9.7-10.7 ft	0-2 ft	10-12 ft	12-14.2 ft	2-4 ft	4-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**											
Dioxins and Furans													
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg		0.21	0.21	0.22	0.21	0.082	0.19 J	0.27 J	0.62	1.3 J	0.43
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg		0.035 JN	0.040	0.048	0.063	0.015	0.088 J	0.12	0.077	0.17	0.11 J
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg		0.0027 J+	0.0040 J+	0.0035 J+	0.0046	< 0.00068 U	0.0052	0.0064	0.0060	0.013 J	0.0074
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg		0.0024 J	0.0024 J	0.0022 J	0.0019 J	0.00059 J+	0.0014 J	0.0018 J	0.0034 JN	0.010	0.0034 J
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg		0.0037 J	0.0037 J	0.0042	0.0049	0.0015 J	0.0035 J	0.0061	0.0065	0.0067	0.0049
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg		0.0095	0.011	0.012	0.013	0.0031 JN	0.0064	0.011	0.018	0.048	0.015
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg		0.0021 J	0.0035 J	0.0046	0.0073	0.00088 J	0.011 J	0.0083	0.0059	0.011 JN	0.0058
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg		0.0043	0.0044	0.0051	0.0047	0.0024 J	0.0035 J	0.0041 J	0.013	0.041	0.0055
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg		< 0.00070 U	< 0.00070 U	< 0.00081 U	< 0.00085 U	< 0.00011 U	< 0.00070 U	< 0.00090 U	< 0.00054 U	< 0.0019 U	< 0.00060 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg		0.0011 J	0.0020 J	0.0014 J	0.0013 J	0.00050 J	< 0.00030 U	0.0014 J	0.0028 J	0.011	0.0014 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg		0.00071 J	0.00091 JN	0.00097 J	0.0012 J	0.00039 J	0.0010 J	0.0010 J	0.0011 J	0.0015 J	0.00079 J
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg		0.0015 J	0.0021 J	0.0019 J	0.0013 J	0.00031 JN	< 0.00080 U	0.0021 J	0.0017 JN	0.0029 J	< 0.00094 U
2,3,4,7,8-PeCDF	57117-31-4	µg/kg		0.0011 J	0.0017 J	0.0015 J	0.0014 J	0.00043 J	0.00079 JN	0.0014 J	0.0011 J	< 0.00097 U	0.0010 J
2,3,7,8-TCDD	1746-01-6	µg/kg		0.00028 JN	0.00099	0.00083	0.00066 JN	0.00022 JN	0.00085	0.0028	0.0012	0.0053	0.00067 J
2,3,7,8-TCDF	51207-31-9	µg/kg		0.0011	0.0041	0.0031	0.0019	0.00088 J	0.00047 J	0.00064 JN	0.00087	0.0016	0.00062 J
OCDD	3268-87-9	µg/kg		1.8	2.2	2.6	3.4 J	0.86	4.5 J	4.6 J	7.9 J	17 J	8.6 J
OCDF	39001-02-0	µg/kg		0.13	0.16	0.17	0.18	0.060	0.29	0.45	0.33	0.83	0.61
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg		0.0073	0.0099	0.0096	0.0098	0.0031	0.0082	0.014	0.019	0.049	0.014
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg		0.0071	0.0099	0.0096	0.0094	0.0027	0.0079	0.014	0.018	0.049	0.014
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg		0.007	0.0099	0.0096	0.0091	0.0025	0.0078	0.013	0.018	0.049	0.014
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	12674-11-2	µg/kg		7.6 J	22 J	19	4.9 J	< 3.5 U	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1221	11104-28-2	µg/kg		< 3.1 UJ	< 3.1 UJ	< 3.2 U	< 3.2 UJ	< 3.5 U	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1232	11141-16-5	µg/kg		< 3.1 UJ	< 3.1 UJ	< 3.2 UJ	< 3.2 UJ	< 3.5 U	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1242	53469-21-9	µg/kg		< 3.1 UJ	< 3.1 UJ	< 3.2 U	< 3.2 UJ	< 3.5 U	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1248	12672-29-6	µg/kg		< 3.1 UJ	< 3.1 UJ	< 3.2 U	< 3.2 UJ	< 3.5 U	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	13 J
Aroclor 1254	11097-69-1	µg/kg		< 3.1 UJ	< 3.1 UJ	< 3.2 U	< 3.2 UJ	19 J	< 3.1 U	< 3.2 U	< 3.4 U	< 3.4 U	< 3.4 U
Aroclor 1260	11096-82-5	µg/kg		70 J	190 J	92	20 J	< 3.5 U	5.1 J	9.3 J	40 J	220 J	18 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg		78	210	110	25	19	5.1	9.3	40	220	31
Pesticides													
2,4-DDD	53-19-0	µg/kg		< 0.53 U	< 0.29 U	< 0.099 U	< 0.24 U	0.209 J	0.800 J	1.34 J	0.866 J	2.28	0.854 J
2,4-DDE	3424-82-6	µg/kg		< 0.39 UJ	< 0.27 U	0.19 JN	< 0.15 U	0.0706 J	0.160 J	0.393 J	0.265 J	0.595 J	0.282 J
2,4-DDT	789-02-6	µg/kg		< 0.25 U	< 0.17 U	< 0.13 U	< 0.29 U	0.0822 J	0.044 JN	0.0711 J	0.0940 J	0.15 JN	0.064 JN
4,4'-DDD	72-54-8	µg/kg		1.59	2.52	2.21	1.42 J	0.670 J	2.70	4.14	3.19	6.31	3.30
4,4'-DDE	72-55-9	µg/kg		2.49 J	2.62	3.57	2.06	1.53 J	2.57	5.22	4.57	9.60	4.43
4,4'-DDT	50-29-3	µg/kg		< 0.69 U	< 0.49 U	< 0.25 U	< 0.51 U	0.275 J	0.124 J	0.270 J	0.255 J	0.462 J	0.21 JN
DDx (b)	T_DDx (PDI)	µg/kg		4.43	5.39	6.1	3.74	2.84	6.4	11.4	9.24	19.4	9.14
Semivolatile Organics													
2-Methylnaphthalene	91-57-6	µg/kg		< 180 U	35 J	51 J	82	17	74	120	48	180	48
Acenaphthene	83-32-9	µg/kg		< 180 U	< 180 U	58 J	160	16 J	64	94	32	48	44
Acenaphthylene	208-96-8	µg/kg		< 180 U	< 180 U	39 J	68 J	19	57	61	34	49	19 J
Anthracene	120-12-7	µg/kg		< 180 U	67 J	57 J	100	31	77	91	46	100	55
Benz(a)anthracene	56-55-3	µg/kg		87 J	100 J	88	130	53	97	110	130	180	100
Benzo(a)pyrene	50-32-8	µg/kg		140 J	150 J	120	100	50	88	82	120	120	68
Benzo(b)fluoranthene	205-99-2	µg/kg		180	170 J	140	130	73	110	110	160	170	99
Benzo(g,h,i)perylene	191-24-2	µg/kg		150 J	150 J	130	95	67	120	120	140	130	76
Benzo(k)fluoranthene	207-08-9	µg/kg		54 J	73 J	59 J	45 J	24	33	34	46	48	33
Chrysene	218-01-9	µg/kg		160 J	180	160	160	75	110	150	160	210	110
Dibenz(a,h)anthracene	53-70-3	µg/kg		< 180 U	< 180 U	24 J	21 J	8.8 J	14	14 J	19	21	11 J
Fluoranthene	206-44-0	µg/kg		280	380	370	530	190	290	330	320	360	230
Fluorene	86-73-7	µg/kg		< 180 U	< 180 U	50 J	100	22	61	72	47	83	39
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg		130 J	140 J	110	76 J	65	110	110	130	130	79
Naphthalene	91-20-3	µg/kg		39 J	94 J	150	320	27	150	210	59	100	56
Phenanthrene	85-01-8	µg/kg		140 J	280	310	540	160	310	460	270	410	230
Pyrene	129-00-0	µg/kg		350	470	460	560	200	370	430	390	420	260
Total PAHs (b)	T_PAH (PDI)	µg/kg		1900	2500	2400	3200	1100	2100	2600	2200	2800	1600
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg		270	280	180	160	78	130	130	180	190	110

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S256	SC-S256	SC-S256	SC-S256	SC-S257	SC-S257	SC-S257	SC-S257	SC-S257	SC-S257
		Sample ID	PDI-SC-S256-4TO6	PDI-SC-S256-6TO8	PDI-SC-S256-8TO9.7	PDI-SC-S256-9.7TO10.7	PDI-SC-S257-0TO2	PDI-SC-S257-10TO12	PDI-SC-S257-12TO14.2	PDI-SC-S257-2TO4	PDI-SC-S257-4TO6	PDI-SC-S257-6TO8
		Sample Date	8/16/2018	8/16/2018	8/16/2018	8/16/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018	8/6/2018
		Sample Type Code	N	N	N	N	N	N	N	N	N	N
		Depth	4-6 ft	6-8 ft	8-9.7 ft	9.7-10.7 ft	0-2 ft	10-12 ft	12-14.2 ft	2-4 ft	4-6 ft	6-8 ft
Chemical	**CAS_RN**	**Units**										
Other												
Total Solids@104C	TSOLID	%	63.7	62.0	62.1	61.6	54.7	63.5	60.7	57.4	57.6	58.1
Total Solids@70C	TSOLID70	%	63	62	62	64	55	64	61	59	59	57
Total Solids (%)	%SOLID	%	64.7	60.9	60.4	59.4	54.1	62.9	56	59.6	55.7	57.5
Clay	GS-Clay	%	7.4	8.7	9.6	8.4	11.1	10.3	15.1	14.7	16.0	14.9
Gravel	GS-Gravel	%	0	0	0	0	0	3.4	0	0	2.0	0.9
Sand, Coarse	GS-Csand	%	0.3	0.1	0.1	0	0	0.5	0.3	0.1	0.3	0.9
Sand, Fine (#200) (d)	GS-Fsand-200	%	12.97	12.46	14.66	36.3	12.23	20.49	11.42	10.11	18.27	14.29
Sand, Fine (#230) (d)	GS-Fsand	%	18.0	17.2	19.5	39.1	18.0	24.2	14.8	15.0	23.0	17.5
Sand, Medium	GS-Msand	%	1.8	1.1	0.9	2.9	0.6	0.1	0.1	0.4	0.2	0.2
Silt (#200) (d)	GS-Silt-200	%	77.52	77.73	74.73	52.29	76.06	65.10	73.07	74.68	63.22	68.80
Silt (#230) (d)	GS-Silt	%	72.5	73.0	69.9	49.5	70.3	61.4	69.7	69.8	58.5	65.6
Percent Fines (e)	GS-FINES	%	84.92	86.43	84.33	60.69	87.16	75.4	88.17	89.38	79.22	83.7
Liquid Limit	GS-LL	None								56		
Plasticity Index	GS-PI	None								17		
Plasticity Limit	GS-PL	None								39		
Total Organic Carbon	TOC	mg/kg	53000	51000	65000	67000	33000	39000	43000	39000	46000	43000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

			Location	SC-S257	SC-S257	SC-S260	SC-S260	SC-S260	SC-S260	SC-S260	SC-S263	SC-S263
			Sample ID	PDI-SC-S257-6TO8D	PDI-SC-S257-8TO10	PDI-SC-S260-0TO1.3	PDI-SC-S260-1.3TO2.6	PDI-SC-S260-2.6TO4.2	PDI-SC-S260-4.2TO6	PDI-SC-S260-6TO7	PDI-SC-S263-0TO2	PDI-SC-S263-2TO3.8
			Sample Date	8/6/2018	8/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	8/16/2018	8/16/2018
			Sample Type Code	FD	N	N	N	N	N	N	N	N
			Depth	6- ft	8-10 ft	0-1.3 ft	1.3-2.6 ft	2.6-4.2 ft	4.2-6 ft	6-7 ft	0-2 ft	2-3.8 ft
Chemical		**CAS_RN**	**Units**									
Dioxins and Furans												
1,2,3,4,6,7,8-HpCDD		35822-46-9	µg/kg	0.56 J	0.39	0.15	0.23	0.0082	0.0010 J+	0.0015 J	0.018	0.045
1,2,3,4,6,7,8-HpCDF		67562-39-4	µg/kg	0.13	0.18	0.18	0.50	0.018	0.00029 J+	0.00023 J+	0.0026 JN	0.0053
1,2,3,4,7,8,9-HpCDF		55673-89-7	µg/kg	0.0091	0.0058 J	0.072	0.23	0.0070	0.00036 J+	0.00045 J+	< 0.00056 U	0.0014 J+
1,2,3,4,7,8-HxCDD		39227-28-6	µg/kg	0.0041 J	0.0029 J	0.0019 JN	0.0026 J	0.00020 J+	< 0.000094 U	< 0.00013 U	0.00024 J+	0.00043 J+
1,2,3,4,7,8-HxCDF		70648-26-9	µg/kg	0.0059	0.0052	0.40	1.1	0.10	0.00038 J	0.00013 J	0.00028 JN	0.00057 J+
1,2,3,6,7,8-HxCDD		57653-85-7	µg/kg	0.018	0.018	0.010	0.011	0.00046 J	0.000064 J	0.000085 JN	0.00077 J	0.0018 J
1,2,3,6,7,8-HxCDF		57117-44-9	µg/kg	0.0064	0.013	0.10	0.32	0.021	0.00021 J+	0.000098 J+	0.00021 J+	0.00044 J
1,2,3,7,8,9-HxCDD		19408-74-3	µg/kg	0.0067	0.0063	0.0050 J	0.0048	0.00045 J	0.00013 J+	0.00017 J+	0.00053 J	0.0010 J
1,2,3,7,8,9-HxCDF		72918-21-9	µg/kg	< 0.00093 U	< 0.00099 U	0.0072	0.021	0.0020 J+	< 0.0012 U	< 0.0011 U	< 0.00055 U	< 0.00072 U
1,2,3,7,8-PeCDD		40321-76-4	µg/kg	0.0016 J	0.0016 J	0.0017 J	0.0030 J	0.00012 J	< 0.000024 U	0.000040 JN	0.000097 J	0.00019 J
1,2,3,7,8-PeCDF		57117-41-6	µg/kg	0.00093 J	0.0011 J	0.19	0.68	0.098	< 0.00036 U	< 0.00021 U	0.00019 J+	0.00021 J+
2,3,4,6,7,8-HxCDF		60851-34-5	µg/kg	0.0022 J	0.0026 J	0.013	0.054	0.0048	< 0.000036 U	0.000034 JN	0.00010 JN	0.00029 J
2,3,4,7,8-PeCDF		57117-31-4	µg/kg	0.0011 J	0.0018 J	0.065	0.33	0.041	< 0.000030 U	0.00011 J+	0.00012 J+	0.00019 J+
2,3,7,8-TCDD		1746-01-6	µg/kg	0.00058 JN	0.00079 J	0.00095 J	0.0023	0.00023 J	< 0.000037 U	< 0.000029 U	< 0.000018 U	< 0.000020 U
2,3,7,8-TCDF		51207-31-9	µg/kg	0.00066 J	0.00079 J	0.11	0.61 J	0.036	0.00021 J+	0.00040 J+	0.00022 J+	0.00044 J
OCDD		3268-87-9	µg/kg	11 J	5.8 J	1.5	2.4	0.096	0.015	0.024	0.16	0.40
OCDF		39001-02-0	µg/kg	0.75	0.47	0.42	1.1	0.026	0.00083 J+	0.00088 J+	0.0087	0.024
TCDD-TEQ	(b)	T_DF_TEQ (PDI)	µg/kg	0.017	0.016	0.097	0.35	0.032	0.00018	0.00025	0.00066	0.0014
TCDD-TEQ (EMPC=half)	(c)	T_DF_TEQ(E_0.5)	µg/kg	0.017	0.016	0.097	0.35	0.032	0.00018	0.0002	0.00059	0.0014
TCDD-TEQ (EMPC=0)	(c)	T_DF_TEQ(E_0)	µg/kg	0.017	0.015	0.097	0.35	0.032	0.00012	0.00014	0.00057	0.0014
Polychlorinated Biphenyls (PCBs)												
Aroclor 1016		12674-11-2	µg/kg	< 3.4 U	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 U	< 2.9 U
Aroclor 1221		11104-28-2	µg/kg	< 3.4 U	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 U	< 2.9 U
Aroclor 1232		11141-16-5	µg/kg	< 3.4 U	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 UJ	< 2.9 UJ
Aroclor 1242		53469-21-9	µg/kg	< 3.4 U	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 U	< 2.9 U
Aroclor 1248		12672-29-6	µg/kg	5.5 J	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 U	< 2.9 U
Aroclor 1254		11097-69-1	µg/kg	< 3.4 U	< 3.2 U	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	< 2.7 U	< 2.9 U
Aroclor 1260		11096-82-5	µg/kg	6.2 J	11 J	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	2.5 J	4.4
Total PCB Aroclors	(b)	T_PCBAr (PDI)	µg/kg	12	11	< 4.4 U	< 3.7 U	< 2.8 U	< 2.5 U	< 2.4 U	2.5	4.4
Pesticides												
2,4-DDD		53-19-0	µg/kg	1.08 J	1.48 J	112	567	8.90	< 0.025 U	0.0489 J	0.108 J	0.240 J
2,4-DDE		3424-82-6	µg/kg	0.318 J	0.461 J	3.73	12.8 J	0.205 J	< 0.014 U	< 0.0085 U	0.0233 J	0.0467 J
2,4-DDT		789-02-6	µg/kg	0.127 J	0.0958 J	24.6	91.9	1.53	< 0.041 U	< 0.020 U	0.054 JN	< 0.027 UJ
4,4'-DDD		72-54-8	µg/kg	4.04	4.94	292	1070	16.7	< 0.037 U	0.0787 J	0.344 J	1.01 J
4,4'-DDE		72-55-9	µg/kg	5.09	5.84	25.7	58.1	0.942 J	0.023 JN	0.0286 J	0.518 J	1.36 J
4,4'-DDT		50-29-3	µg/kg	0.351 J	0.246 J	356	1340	15.0	< 0.075 U	0.0982 J	0.193 J	0.151 J
DDx	(b)	T_DDx (PDI)	µg/kg	11	13.1	814	3140	43.3	0.0605	0.264	1.24	2.82
Semivolatile Organics												
2-Methylnaphthalene		91-57-6	µg/kg	66	230	290	450	59	56	37	< 33 U	< 73 U
Acenaphthene		83-32-9	µg/kg	45	170	950	290	170	360	120	5.2 J	20 J
Acenaphthylene		208-96-8	µg/kg	36 J	110	440	92	120	110	99	4.3 J	< 73 U
Anthracene		120-12-7	µg/kg	61	240	1100	440	250	400	220	7.9 J	11 J
Benz(a)anthracene		56-55-3	µg/kg	140	250	2100	700	430	540	510	29 J	25 J
Benzo(a)pyrene		50-32-8	µg/kg	91	250	2200	640	420	460	980	60	32 J
Benzo(b)fluoranthene		205-99-2	µg/kg	140	300	1900	750	370	390	820	47	40 J
Benzo(g,h,i)perylene		191-24-2	µg/kg	99	320	1200	580	310	230	1200	47	23 J
Benzo(k)fluoranthene		207-08-9	µg/kg	38	88	640	240	120	140	220	18 J	15 J
Chrysene		218-01-9	µg/kg	150	300	2200	840	390	480	560	41	40 J
Dibenz(a,h)anthracene		53-70-3	µg/kg	15	31	240	70	42	49	78	< 33 U	< 73 U
Fluoranthene		206-44-0	µg/kg	280	910	4900	2600	1000	1000	1300	81	81
Fluorene		86-73-7	µg/kg	48	170	510	320	120	200	73	5.1 J	14 J
Indeno(1,2,3-cd)pyrene		193-39-5	µg/kg	98	230	1300	580	310	270	940	43	23 J
Naphthalene		91-20-3	µg/kg	76	450	1200	2000	260	220	230	6.3 J	12 J
Phenanthrene		85-01-8	µg/kg	260	960	3200	1400	820	970	770	38	57 J
Pyrene		129-00-0	µg/kg	330	1100	6600	2900	1400	1600	2500	100	81
Total PAHs	(b)	T_PAH (PDI)	µg/kg	2000	6100	31000	15000	6600	7500	11000	570	550
BaP-TEQ	(b)	T_BaP-TEQ (PDI)	µg/kg	140	360	3000	920	570	630	1300	89	77

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S257	SC-S257	SC-S260	SC-S260	SC-S260	SC-S260	SC-S260	SC-S263	SC-S263
		Sample ID	PDI-SC-S257-6TO8D	PDI-SC-S257-8TO10	PDI-SC-S260-0TO1.3	PDI-SC-S260-1.3TO2.6	PDI-SC-S260-2.6TO4.2	PDI-SC-S260-4.2TO6	PDI-SC-S260-6TO7	PDI-SC-S263-0TO2	PDI-SC-S263-2TO3.8
		Sample Date	8/6/2018	8/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	9/6/2018	8/16/2018	8/16/2018
		Sample Type Code	FD	N	N	N	N	N	N	N	N
		Depth	6- ft	8-10 ft	0-1.3 ft	1.3-2.6 ft	2.6-4.2 ft	4.2-6 ft	6-7 ft	0-2 ft	2-3.8 ft
Chemical	**CAS_RN**	**Units**									
Other											
Total Solids@104C	TSOLID	%	57.1	61.0	44.2	53.9	70.8	79.1	78.5	73.2	67.2
Total Solids@70C	TSOLID70	%	59	61	45	55	72	81	77	74	61
Total Solids (%)	%SOLID	%	55.9	59.1	45.5	56.4	71.8	80.6	77.4	68	65.6
Clay	GS-Clay	%		11.7	8.1	6.3	3.6	0.9	1.7	5.1	6.8
Gravel	GS-Gravel	%		1.4	6.6 L	6.4	0.1	0	0	0	30.0
Sand, Coarse	GS-Csand	%		0.7	2.0	0.9	0.1	0.1	0	1.4	2.2
Sand, Fine (#200) (d)	GS-Fsand-200	%		7.981	24.38	34.9	75.46	87.39	85.07	70.24	39.09
Sand, Fine (#230) (d)	GS-Fsand	%		11.0	28.8	40.6	77.8	88.6	86.0	73.2	42.7
Sand, Medium	GS-Msand	%		0.2	2.6	1.6	1.0	3.3	4.6	6.4	2.8
Silt (#200) (d)	GS-Silt-200	%		78.11	56.31	49.79	19.73	8.503	8.622	16.75	19.10
Silt (#230) (d)	GS-Silt	%		75.1	51.9	44.1	17.4	7.3	7.7	13.8	15.5
Percent Fines (e)	GS-FINES	%		89.81	64.41	56.09	23.33	9.403	10.322	21.85	25.9
Liquid Limit	GS-LL	None								0	
Plasticity Index	GS-PI	None								< 0 U	
Plasticity Limit	GS-PL	None								0	
Total Organic Carbon	TOC	mg/kg	42000	50000	100000	54000	13000	970 J	4400	14000	20000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
ID = identifier
mg/kg = milligram per kilogram
N = normal sample
OCDD = octachlorodibenzodioxin
OCDF = octachlorodibenzofuran
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PDI = Pre-Remedial Design Investigation
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
QAPP = Quality Assurance Project Plan
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalence

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S263
		Sample ID	PDI-SC-S263-3.8TO5.9
		Sample Date	8/16/2018
		Sample Type Code	N
		Depth	3.8-5.9 ft
Chemical	**CAS_RN**	**Units**	
Dioxins and Furans			
1,2,3,4,6,7,8-HpCDD	35822-46-9	µg/kg	0.083
1,2,3,4,6,7,8-HpCDF	67562-39-4	µg/kg	0.013
1,2,3,4,7,8,9-HpCDF	55673-89-7	µg/kg	0.0013 J+
1,2,3,4,7,8-HxCDD	39227-28-6	µg/kg	0.00080 J+
1,2,3,4,7,8-HxCDF	70648-26-9	µg/kg	0.0013 J
1,2,3,6,7,8-HxCDD	57653-85-7	µg/kg	0.0051
1,2,3,6,7,8-HxCDF	57117-44-9	µg/kg	0.00080 J
1,2,3,7,8,9-HxCDD	19408-74-3	µg/kg	0.0022 J
1,2,3,7,8,9-HxCDF	72918-21-9	µg/kg	< 0.00074 U
1,2,3,7,8-PeCDD	40321-76-4	µg/kg	0.00047 J
1,2,3,7,8-PeCDF	57117-41-6	µg/kg	0.00036 J+
2,3,4,6,7,8-HxCDF	60851-34-5	µg/kg	0.00045 J
2,3,4,7,8-PeCDF	57117-31-4	µg/kg	0.00038 J
2,3,7,8-TCDD	1746-01-6	µg/kg	0.00034 JN
2,3,7,8-TCDF	51207-31-9	µg/kg	0.00063 J
OCDD	3268-87-9	µg/kg	0.83
OCDF	39001-02-0	µg/kg	0.039
TCDD-TEQ (b)	T_DF_TEQ (PDI)	µg/kg	0.0033
TCDD-TEQ (EMPC=half) (c)	T_DF_TEQ(E_0.5)	µg/kg	0.0031
TCDD-TEQ (EMPC=0) (c)	T_DF_TEQ(E_0)	µg/kg	0.003
Polychlorinated Biphenyls (PCBs)			
Aroclor 1016	12674-11-2	µg/kg	< 3.0 UJ
Aroclor 1221	11104-28-2	µg/kg	< 3.0 UJ
Aroclor 1232	11141-16-5	µg/kg	< 3.0 UJ
Aroclor 1242	53469-21-9	µg/kg	< 3.0 UJ
Aroclor 1248	12672-29-6	µg/kg	< 3.0 UJ
Aroclor 1254	11097-69-1	µg/kg	< 3.0 UJ
Aroclor 1260	11096-82-5	µg/kg	4.8 J
Total PCB Aroclors (b)	T_PCBAr (PDI)	µg/kg	4.8
Pesticides			
2,4-DDD	53-19-0	µg/kg	0.656 J
2,4-DDE	3424-82-6	µg/kg	0.0929 J
2,4-DDT	789-02-6	µg/kg	0.095 JN
4,4'-DDD	72-54-8	µg/kg	2.02 J
4,4'-DDE	72-55-9	µg/kg	2.40 J
4,4'-DDT	50-29-3	µg/kg	0.286 J
DDx (b)	T_DDx (PDI)	µg/kg	5.55
Semivolatile Organics			
2-Methylnaphthalene	91-57-6	µg/kg	15 J
Acenaphthene	83-32-9	µg/kg	15 J
Acenaphthylene	208-96-8	µg/kg	14 J
Anthracene	120-12-7	µg/kg	20 J
Benz(a)anthracene	56-55-3	µg/kg	33 J
Benzo(a)pyrene	50-32-8	µg/kg	47 J
Benzo(b)fluoranthene	205-99-2	µg/kg	54 J
Benzo(g,h,i)perylene	191-24-2	µg/kg	41 J
Benzo(k)fluoranthene	207-08-9	µg/kg	18 J
Chrysene	218-01-9	µg/kg	51 J
Dibenz(a,h)anthracene	53-70-3	µg/kg	< 67 U
Fluoranthene	206-44-0	µg/kg	110
Fluorene	86-73-7	µg/kg	16 J
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	41 J
Naphthalene	91-20-3	µg/kg	40 J
Phenanthrene	85-01-8	µg/kg	86
Pyrene	129-00-0	µg/kg	110
Total PAHs (b)	T_PAH (PDI)	µg/kg	740
BaP-TEQ (b)	T_BaP-TEQ (PDI)	µg/kg	94

Table A.2a-1. Chemical Results for PDI Subsurface Sediment Core Samples

		Location	SC-S263
		Sample ID	PDI-SC-S263-3.8TO5.9
		Sample Date	8/16/2018
		Sample Type Code	N
		Depth	3.8-5.9 ft
Chemical	**CAS_RN**	**Units**	
Other			
Total Solids@104C	TSOLID	%	66.9
Total Solids@70C	TSOLID70	%	69
Total Solids (%)	%SOLID	%	63.5
Clay	GS-Clay	%	4.7
Gravel	GS-Gravel	%	48.0
Sand, Coarse	GS-Csand	%	2.1
Sand, Fine (#200) (d)	GS-Fsand-200	%	28.55
Sand, Fine (#230) (d)	GS-Fsand	%	31.9
Sand, Medium	GS-Msand	%	0.9
Silt (#200) (d)	GS-Silt-200	%	15.74
Silt (#230) (d)	GS-Silt	%	12.4
Percent Fines (e)	GS-FINES	%	20.44
Liquid Limit	GS-LL	None	
Plasticity Index	GS-PI	None	
Plasticity Limit	GS-PL	None	
Total Organic Carbon	TOC	mg/kg	32000

Notes:

a. Qualifiers:
J = The chemical was positively identified; however, the associated numerical value is an estimated concentration.
+/- = Indicates the result may be biased high/low
JN = The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected at detection limit shown.
UJ = Not detected; sample detection limit is estimated.

b. Totals and TEQs were calculated using EPA Region 10's 12/12/2017 data summation rules for the PDI, with clarifications in AECOM's 8/31/2018 memorandum (see Appendix C.3).

c. Alternate TCDD-TEQ calculated based on data summing rules provided in Appendix E.

d. The lab reported fine sand and silt fractions based on #230 sieve size; these two fractions were adjusted to the QAPP-specified #200 sieve size using the increment between #230 and #200 as reported by the lab.

e. Sum of silt (#200) and clay fractions.

Acronyms:

µg/kg = microgram per kilogram
BaP = benzo(a)pyrene
CAS_RN = Chemical Abstracts Service Registry Number
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane
DDx = dichlorodiphenyltrichloroethane and its derivatives
EMPC = estimated maximum possible concentration
EPA = U.S. Environmental Protection Agency
FD = field duplicate sample
ft = feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
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TEQ = toxicity equivalence