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## 1.0 INTRODUCTION

The Pearce Creek confined disposal facility (CDF), located in Cecil County, Maryland was used for disposal of material generated during maintenance dredging activities within the Chesapeake and Delaware Canal Federal Navigation Project. Tetra Tech performed monitoring of water quality and flow rate for the effluent water flowing out of the Pearce Creek CDF, concurrent with dredging operations, which started in early December 2017 and lasted intermittently for approximately 90 days. Within this period, dredge operations were suspended for several weeks in December and January due to ice formation and mechanical issues. The layout of the Pearce Creek CDF is shown in Appendix A.

## 2.0 WATER QUALITY MONITORING

At the start of CDF discharge, automatic water sampling equipment (ISCO 6700) was installed adjacent and upstream of the CDF's discharge pipes. One 24-hour composite sample, consisting of grab water samples taken every six hours, was collected each day following the initial discharge. Tetra Tech submitted these daily composite grab samples to the analytical laboratory for analysis of total suspended solids.

Tetra Tech collected one grab water sample at the weir on a near weekly basis during the CDF discharge. In total, 9 grab samples were collected using a peristaltic pump, and submitted for laboratory analysis. These 9 water samples were analyzed for TAL inorganics (both total and dissolved), total mercury, total suspended solids, dissolved phosphate, ortho-phosphate, total phosphorous, dissolved phosphorous, nitrate/nitrite, ammonia, total Kjeldahl nitrogen, and sulfate. pH and dissolved oxygen were measured in the field. In addition, one rinseate blank was created by rinsing the water sample collection device with laboratory grade water and collecting that water for laboratory analysis. The rinseate blank was analyzed for total and dissolved TAL inorganics, total mercury, dissolved phosphate, ortho-phosphate, total phosphorus, dissolved phosphorus, nitrate/nitrite, ammonia, total Kjeldahl nitrogen, and sulfate.

Samples were packed with ice in coolers and shipped the same day via over-night delivery to the TestAmerica environmental analytical laboratory in Pittsburgh, Pennsylvania. This laboratory is accredited by the National Environmental Laboratory Accreditation Conference (NELAC) for analysis of non-potable water and solids. NELAC is a cooperative association of States and Federal agencies, formed to establish and promote mutually acceptable national performance standards for the operation of environmental laboratories. The standards cover both analytical testing of environmental samples and the laboratory accreditation process. The goal of NELAC is to foster the generation of environmental laboratory data of known and acceptable quality on which to base public health and environmental management decisions. TestAmerica's NELAC accreditation documents that the laboratory adheres to all NELAC quality assurance requirements. Specific requirements vary between analytical methods, but in general include the analysis of method blanks, laboratory control samples (LCS), matrix spikes (MS) and matrix spike duplicates (MSD). Specific criteria for each analytical method are documented in method-specific standard operating procedures (SOPs) maintained by each laboratory, and may include calibration linearity requirements, initial and continuing calibration verifications, calibration blanks, and instrument tuning requirements. All samples were stored in the dark at 4 degrees

Celsius (°C) until analysis. Table 1 of Appendix B summarizes the analytical parameters and the analytical methods used. The laboratory data and laboratory reports are included as Appendix C.

The sampling design and analysis plan for this project followed recommended field and analytical methods summarized in *The Management and Regulation of Dredging Activities and Dredged Material in New Jersey's Tidal Waters, October 1997*.

Sampling events were conducted at Pearce Creek on 12/20/17, 12/26/17, 1/3/18, 1/16/18, 1/24/18, 2/1/18, 2/26/18, 3/8/18, and 3/12/18.

### **3.0 FLOW RATE MONITORING**

Tetra Tech measured the volume of water discharged from the CDFs over the entire discharge period using monitoring equipment (ISCO 2110 Model Flow Meter) to record flow volumes from the CDF's discharge pipes. Tetra Tech maintained this equipment on-site (calibration, batteries, and weekly data downloads).

The Pearce Creek CDF weir discharges via piping into an adjacent rock-lined detention basin which drains through a vegetated swale, ultimately discharging through two 36-inch pipes to a tributary of Pearce Creek Lake and the Elk River. The flow monitoring equipment was setup to record flow from the two 36-inch pipes.

### **4.0 RESULTS**

All results for the Pearce Creek CDF are included in the following Appendixes.

Daily discharge volumes are provided in Appendix B Table 4. The laboratory analytical reports are provided in Appendix C and will be available upon request.

## **APPENDIX A-Figures**



**Figure 1:** Pearce Creek CDF, Site Layout

## **APPENDIX B-Tables**

**TABLE 1: Tested Contaminant Groups and Laboratory Methods**

<b>Contaminant Group</b>	<b>Analytical Method</b>	<b>Sample Volume</b>
<b>Inorganics</b>		
TAL Inorganics (total)	SW846 6020A	250 mL
TAL Inorganics (dissolved)	SW846 6020A	250 mL
Total Mercury, Low Level (CVAFS)	USEPA 1631E	40 mL
<b>General Chemistry</b>		
Ortho-phosphate (total)	EPA 300.0 R2.1	250 mL
Ortho-phosphate (dissolved)	EPA 300.0 R2.1	250 mL
Sulfate	EPA 300.0 R2.1	250 mL
Ammonia-N	SM 4500 NH3 D	500 mL
Nitrogen, Total Kjeldahl	SM4500_NH3_C	500 mL
Nitrogen, Nitrate-Nitrite	353.2	500 mL
Phosphorus (total)	SM 4500 P E	250 mL
Phosphorus (dissolved)	SM 4500 P E	250 mL
Total Suspended Solids	SM 2540D	1,000 mL

TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	PEARCE CREEK-EFF-122017	PEARCE CREEK-EFF-122617	PEARCE CREEK-EFF-010318	PEARCE CREEK-EFF-011618	PEARCE CREEK-EFF-012418
<b>Inorganics (Total)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Aluminum	1100	6800	1700	1200	740
Antimony	0.69 J	ND	1.3 J B	1 J	ND
Arsenic	6.8	13	20	9.6	6.5
Barium	57	110	160	94	82
Beryllium	0.19 J	ND	0.18 J	0.13 J	0.1 J
Cadmium	0.58 J	ND	0.47 J	0.15 J	0.14 J
Calcium	42000	47000	64000	42000	39000 B
Chromium	2.8	8.2 J	4 B	3.3 B	2.7
Cobalt	16	22	26	14	13
Copper	11	14 J	7.9 B	7.6	3.9
Iron	7300	11000	10000	4700	3000
Lead	2.7	15	3.3	2.8	1.6
Magnesium	110000	130000	130000	76000	73000
Manganese	9300	6200	7900	4100	3900
Mercury (ng\L)	4.2	13	6.3 B	3	2.5
Nickel	20	34	26	16	16
Potassium	41000	48000	42000	22000	21000
Selenium	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND
Sodium	620000	920000	800000 B	440000	430000
Thallium	ND	ND	ND	ND	ND
Vanadium	2.2	13	4.3	4	4.1
Zinc	26	83	60	29	19 B
<b>Inorganics (Dissolved)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Aluminum	750	52	29 J	ND	150
Antimony	0.61 J	0.78 J	1.2 J B	0.79 J	ND
Arsenic	5.1	5.3	7.2	3.2	3.3
Barium	52	74	120	71	72
Beryllium	0.14 J	ND	ND	ND	ND
Cadmium	0.16 J	ND	0.27 J	ND	ND
Calcium	43000	45000	63000	40000	39000 B



TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	PEARCE CREEK-EFF-122017	PEARCE CREEK-EFF-122617	PEARCE CREEK-EFF-010318	PEARCE CREEK-EFF-011618	PEARCE CREEK-EFF-012418
Chromium	1.6 J	ND	1.7 J B	1.3 J B	1.7 J
Cobalt	15	9.1	23	12	12
Copper	9.6	3.2	3.9 B	2.8	3.3
Iron	4800	140	2400	38 J	750
Lead	1.8	ND	ND	ND	0.4 J
Magnesium	120000	120000	120000	74000	74000
Manganese	9100	5100	7700	3800	3900
Nickel	19	16	22	13	14
Potassium	42000	44000	41000	21000	21000
Selenium	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND
Sodium	620000	890000	790000 B	430000	420000
Thallium	ND	ND	ND	ND	ND
Vanadium	1.6	2.6	1.3	1.2	2.6
Zinc	19	ND	32	7.2	9.6 B
<b>Other Analytes</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>
Nitrate Nitrite as N	0.18	0.21 B	0.22	0.056	ND
Sulfate	100	110	140	57	57
Ammonia	19	35	36	20	21
Phosphorus (total)	0.24	0.76	0.4	0.24	0.18
Phosphorus (dissolved)	0.059	0.068	0.18	0.023	0.0083 J
Nitrogen, Kjeldahl	20	25	31	24	20
Orthophosphate as P	ND	ND	ND	ND	ND
Orthophosphate as P (dissolved)	ND	ND	ND	ND	ND
<b>Field Parameters</b>					
pH	7.76	8.32	7.38	8.07	8.18
Temperature (°C)	5.63	0.25	0.78	2.16	4.84
Dissolved Oxygen (mg/L)	6.32	10.28	6.14	8.97	9.93

TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	PEARCE CREEK- EFF-020118	PEARCE CREEK- EFF-022618	PEARCE CREEK- EFF-030818	PEARCE CREEK- EFF-031218	RB-1	MDL	Average (Effluent sample mean)
<b>Inorganics (Total)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Aluminum	2100	6900	4500	1400	17 J B	14	2938
Antimony	ND	1.4 J	ND	1.3 J	ND	0.44	0.63
Arsenic	6.1	5.8	4.8	3.2	0.34 J	0.22	8.42
Barium	92	79	63	57	ND	1.4	88.22
Beryllium	0.13 J	0.63 J	0.41 J	0.11 J	ND	0.13	0.21
Cadmium	0.22 J	0.16 J	0.21 J	ND	ND	0.078	0.21
Calcium	44000	24000	25000	38000	ND	74	40556
Chromium	4.7	10	9.5	2	1.2 J	0.38	5.24
Cobalt	14	14	16	8.9	ND	0.095	15.99
Copper	5.8	12	10	6.6	ND	1	8.76
Iron	4100	8900 B	7300	3300	ND	20	6622
Lead	4.5	11 B	8	1.8	ND	0.32	5.63
Magnesium	84000	34000	34000	55000	ND	45	80667
Manganese	4500	2200	1800	2300	7.8	1.3	4689
Mercury (ng\L)	4.7 B	17	11	2.9	ND	0.28 ng/L	7.17 ng/L
Nickel	21	23	22	16	ND	0.27	21.56
Potassium	25000	13000	11000	14000	ND	96	26333.33
Selenium	0.87 J	0.86 J	ND	1 J	ND	1.3	0.30
Silver	ND	ND	ND	ND	ND	0.2	0.00
Sodium	500000	170000	170000	250000	ND	220	477777.78
Thallium	ND	ND	ND	0.14 J	ND	0.053	0.02
Vanadium	6.1	12	11	3.5	2.2	0.5	6.69
Zinc	27	68 B	69	17	ND	2.7	44.22
<b>Inorganics (Dissolved)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Aluminum	750	4500	410	800	ND	14	827
Antimony	ND	1.2 J	ND	ND	ND	0.44	0.51
Arsenic	3.7	4.5	2.1	2.7	ND	0.22	4.12
Barium	80	68	36	49	ND	1.4	69.11
Beryllium	ND	0.43 J	ND	ND	ND	0.13	0.06
Cadmium	0.16 J	0.14 J	ND	ND	ND	0.078	0.08
Calcium	44000	23000	23000	38000	ND	74	39778

TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	PEARCE CREEK-EFF-020118	PEARCE CREEK-EFF-022618	PEARCE CREEK-EFF-030818	PEARCE CREEK-EFF-031218	RB-1	MDL	Average (Effluent sample mean)
Chromium	2.4	6.9	3.1	1.2 J	1.3 J	0.38	2.21
Cobalt	13	11	8.5	7.9	ND	0.095	12.39
Copper	4.7	9.7	6.2	6	ND	1	5.49
Iron	1500	6500 B	710	2000	ND	20	2093.11
Lead	1.6	8.3 B	0.89 J	1.1	ND	0.32	1.57
Magnesium	84000	33000	32000	54000	ND	45	79000
Manganese	4400	2000	1400	2200	4.7 J	1.3	4400
Nickel	19	19	13	15	ND	0.27	16.67
Potassium	26000	13000	10000	14000	ND	96	25778
Selenium	ND	ND	ND	ND	ND	1.3	0.00
Silver	ND	ND	ND	ND	ND	0.2	0.00
Sodium	510000	170000	160000	250000	ND	220	471111
Thallium	ND	ND	ND	ND	ND	0.053	0.00
Vanadium	3.7	8.1	2.5	2.7	2.1	0.5	2.92
Zinc	14	56 B	13	13	ND	2.7	18.20
<b>Other Analytes</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>
Nitrate Nitrite as N	0.069	0.23	0.17	0.16	ND	0.031	0.14
Sulfate	75	44	45	65	ND	1.9	77.00
Ammonia	26	16	21	13	ND	0.93	23.00
Phosphorus (total)	0.16	0.64	0.34	0.11	0.009 J	0.005	0.34
Phosphorus (dissolved)	0.09	0.092	0.069	0.067	ND	0.005	0.07
Nitrogen, Kjeldahl	20	14	8.4	12	ND	1.6	19.38
Orthophosphate as P	ND	ND	ND	ND	ND	0.31	0.00
Orthophosphate as P (dissolved)	ND	ND	ND	ND	ND	0.31	0.00
<b>Field Parameters</b>							
pH	8.34	7.92	8.04	7.87	---	---	7.99
Temperature (°C)	2.65	10.00	11.45	7.40			
Dissolved Oxygen (mg/L)	10.18	9.46	9.67	7.75	---	---	8.74

TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	Aquatic Life				Human Health for Consumption of:		
	Freshwater Acute	Freshwater Chronic	Freshwater Acute (adjusted for hardness)	Freshwater Chronic (adjusted for hardness)	Drinking Water+Organism	Organism Only	Drinking Water MCL
<b>Inorganics (Total)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>mg/L</b>
Aluminum	---	---	---	---	---	---	---
Antimony	---	---	---	---	---	---	---
Arsenic	---	---	---	---	---	---	---
Barium	---	---	---	---	---	---	---
Beryllium	---	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---	---
Calcium	---	---	---	---	---	---	---
Chromium	---	---	---	---	---	---	---
Cobalt	---	---	---	---	---	---	---
Copper	---	---	---	---	---	---	---
Iron	---	---	---	---	---	---	---
Lead	---	---	---	---	---	---	---
Magnesium	---	---	---	---	---	---	---
Manganese	---	---	---	---	---	---	---
Mercury (ng\L)	1400 ng/L	770 ng/L	---	---	---	---	0.002
Nickel	---	---	---	---	---	---	---
Potassium	---	---	---	---	---	---	---
Selenium	---	---	---	---	---	---	---
Silver	---	---	---	---	---	---	---
Sodium	---	---	---	---	---	---	---
Thallium	---	---	---	---	---	---	---
Vanadium	---	---	---	---	---	---	---
Zinc	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---
<b>Inorganics (Dissolved)</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>mg/L</b>
Aluminum	---	---	---	---	---	---	---
Antimony	---	---	---	---	5.6	640	0.006
Arsenic	340	150	---	---	0.18	---	0.01
Barium	---	---	---	---	1000	---	2
Beryllium	---	---	---	---	4	---	0.004
Cadmium	2	0.25	6.9	2.1	5	---	0.005
Calcium	---	---	---	---	---	---	---

TABLE 2: DATA SUMMARY OF ANALYTICAL RESULTS - Chesapeake Delaware Canal Maintenance Dredging Project, Pearce Creek CDF Water Quality Monitoring

Sample ID:	Aquatic Life				Human Health for Consumption of:		
	Freshwater Acute	Freshwater Chronic	Freshwater Acute (adjusted for hardness)	Freshwater Chronic (adjusted for hardness)	Drinking Water+Organism	Organism Only	Drinking Water MCL
Chromium	570	74	---	---	100	---	0
Cobalt	---	---	---	---	---	---	---
Copper	13	9	---	---	1300	---	1.3
Iron	---	---	---	---	---	---	---
Lead	65	2.5	298.6	11.6	---	---	0.015
Magnesium	---	---	---	---	---	---	---
Manganese	---	---	---	---	---	---	---
Nickel	470	52	1591.4	176.8	610	4600	---
Potassium	---	---	---	---	---	---	---
Selenium	20	5	---	---	170	4200	0.05
Silver	3.2	---	38.7	---	---	---	0.1
Sodium	---	---	---	---	---	---	---
Thallium	---	---	---	---	0.24	0.47	0.002
Vanadium	---	---	---	---	---	---	---
Zinc	120	120	399.0	402.3	7400	26000	---
<b>Other Analytes</b>	<b>ug/L</b>	<b>mg/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Nitrate Nitrite as N	---	---	---	---	---	---	---
Sulfate	---	---	---	---	---	---	---
Ammonia	3.15 to 23.0	1.52 to 7.69	---	---	---	---	---
Phosphorus (total)	---	---	---	---	---	---	---
Phosphorus (dissolved)	---	---	---	---	---	---	---
Nitrogen, Kjeldahl	---	---	---	---	---	---	---
Orthophosphate as P	---	---	---	---	---	---	---
Orthophosphate as P (dissolved)	---	---	---	---	---	---	---
<b>Field Parameters</b>							
pH	---	---	---	---	---	---	---
Temperature (°C)							
Dissolved Oxygen (mg/L)	---	---	---	---	---	---	---

**TABLE 3: TSS for Effluent Monitoring at  
Pearce Creek CDF**

Sample ID	TSS (mg/L)
PEARCE CREEK-EFF-120617	34
PEARCE CREEK-EFF-120717	27
PEARCE CREEK-EFF-120817	30
PEARCE CREEK-EFF-120917	33
PEARCE CREEK-EFF-121017	32
PEARCE CREEK-EFF-121117	35
PEARCE CREEK-EFF-121217	33
PEARCE CREEK-EFF-121517	30
PEARCE CREEK-EFF-121717	22
PEARCE CREEK-EFF-121817	22
PEARCE CREEK-EFF-121917	23
PEARCE CREEK-EFF-122017	39
PEARCE CREEK-EFF-122117	34
PEARCE CREEK-EFF-122217	54
PEARCE CREEK-EFF-122317	41
PEARCE CREEK-EFF-122417	77
PEARCE CREEK-EFF-122517	62
PEARCE CREEK-EFF-122617	540
PEARCE CREEK EFF-122717	380
PEARCE CREEK EFF-123017	160
PEARCE CREEK-EFF-010318	73
PEARCE CREEK EFF-010418	140
PEARCE CREEK EFF-010518	160
PEARCE CREEK EFF-011018	99
PEARCE CREEK EFF-011118	99
PEARCE CREEK EFF-011218	63
PEARCE CREEK EFF-011318	90
PEARCE CREEK EFF-011418	120
PEARCE CREEK-EFF-011618	33
PEARCE CREEK EFF-011718	43
PEARCE CREEK EFF-011818	36
PEARCE CREEK EFF-011918	34
PEARCE CREEK EFF-012018	36
PEARCE CREEK EFF-012118	42
PEARCE CREEK EFF-012218	22
PEARCE CREEK EFF-012318	24
PEARCE CREEK EFF-012418	18
PEARCE CREEK-EFF-012518	32
PEARCE CREEK-EFF-012618	33
PEARCE CREEK-EFF-020118	42
PEARCE CREEK-EFF-020218	55
PEARCE CREEK-EFF-020518	96

**TABLE 3: TSS for Effluent Monitoring at  
Pearce Creek CDF**

Sample ID	TSS (mg/L)
PEARCE CREEK-EFF-020618	180
PEARCE CREEK-EFF-020718	130
PEARCE CREEK-EFF-020818	74
PEARCE CREEK-EFF-020918	68
PEARCE CREEK-EFF-021018	58
PEARCE CREEK-EFF-021118	98
PEARCE CREEK-EFF-021218	210
PEARCE CREEK-EFF-021318	240
PEARCE CREEK-EFF-021618	200
PEARCE CREEK-EFF-021718	210
PEARCE CREEK-EFF-021818	170
PEARCE CREEK-EFF-021918	150
PEARCE CREEK-EFF-022018	130
PEARCE CREEK-EFF-022118	120
PEARCE CREEK-EFF-022218	130
PEARCE CREEK-EFF-022318	150
PEARCE CREEK-EFF-022418	200
PEARCE CREEK-EFF-022518	180
PEARCE CREEK-EFF-022618	200
PEARCE CREEK-EFF-022618 G	220
PEARCE CREEK-EFF-022718	220
PEARCE CREEK-EFF-022818	150
PEARCE CREEK-EFF-030118	1400
PEARCE CREEK-EFF-030218	5800
PEARCE CREEK-EFF-030318	6200
PEARCE CREEK-EFF-030418	1600
PEARCE CREEK-EFF-030518	730
PEARCE CREEK-EFF-030818	140
PEARCE CREEK-EFF-031218	40

**Table 4: Daily Discharge Volume at Pearce Creek CDF**

Date	Total Daily Discharge Volume (gallons)	
	Pipe1	Pipe 2
12/6/2017	26,661	1,039
12/7/2017	35,198	765
12/8/2017	3,520	1,430
12/9/2017	10,926	1,219
12/10/2017	21,310	639
12/11/2017	1,860	660
12/12/2017	9,914	1,414
12/13/2017	18,446	1,039
12/14/2017	403	1,410
12/15/2017	13,005	1,131
12/16/2017	18,335	711
12/17/2017	33,077	484
12/18/2017	6,815	974
12/19/2017	14,947	992
12/20/2017	38,155	749
12/21/2017	49,421	3,600
12/22/2017	122,587	27,426
12/23/2017	470,459	324,848
12/24/2017	257,744	1,101,850
12/25/2017	1,005,190	1,738,566
12/26/2017	1,321,485	1,391,578
12/27/2017	1,243,721	1,206,419
12/28/2017	580,993	1,127,903
12/29/2017	37,996	18,095
12/30/2017	20,136	70,146
12/31/2017	279,850	486,490
1/1/2018	1,253,797	1,556,539
1/2/2018	164,686	2,670,490
1/3/2018	626,578	1,537,940
1/4/2018	455,430	564,809
1/5/2018	0	276,356
1/6/2018	249,653	666,078
1/7/2018	602,781	1,612,805
1/8/2018	1,769,835	2,580,352
1/9/2018	543,246	2,884,540
1/10/2018	1,116,872	2,637,527
1/11/2018	1,686,705	3,003,108
1/12/2018	365,529	1,432,363
1/13/2018	545,183	884,301
1/14/2018	1,273,569	1,285,015
1/15/2018	79,521	521,059
1/16/2018	265,065	419,771
1/17/2018	216,792	197,380
1/18/2018	37,613	153,376
1/19/2018	79,955	87,880
1/20/2018	114,781	56,521
1/21/2018	16,215	45,045
1/22/2018	54,019	37,572
1/23/2018	92,080	39,778
1/24/2018	14,541	130,869
1/25/2018	131,413	142,332
1/26/2018	99,341	74,775
1/27/2018	3,358	42,097



**Table 4: Daily Discharge Volume at Pearce Creek CDF**

Date	Total Daily Discharge Volume (gallons)	
	Pipe1	Pipe 2
1/28/2018	43,328	36,078
1/29/2018	75,884	34,409
1/30/2018	121,399	40,876
1/31/2018	55,295	122,152
2/1/2018	56,666	41,230
2/2/2018	224,043	189,358
2/3/2018	308,613	1,115,945
2/4/2018	1,056,221	1,598,944
2/5/2018	1,971,330	2,103,500
2/6/2018	705,301	3,167,438
2/7/2018	1,681,981	3,108,917
2/8/2018	1,944,649	2,282,096
2/9/2018	273,606	1,623,126
2/10/2018	365,453	625,605
2/11/2018	586,205	628,854
2/12/2018	207,682	1,630,442
2/13/2018	621,274	1,279,583
2/14/2018	413,159	439,779
2/15/2018	20,131	197,257
2/16/2018	67,602	115,100
2/17/2018	249,048	256,966
2/18/2018	16,947	488,050
2/19/2018	395,084	991,120
2/20/2018	353,301	468,896
2/21/2018	1,042,259	939,674
2/22/2018	400,782	1,171,969
2/23/2018	450,526	619,582
2/24/2018	484,671	462,740
2/25/2018	62,907	201,215
2/26/2018	248,692	410,376
2/27/2018	581,997	587,956
2/28/2018	117,268	481,997
3/1/2018	107,275	148,026
3/2/2018	209,394	143,670
3/3/2018	283,426	1,508,074
3/4/2018	29,145	577
3/5/2018	32,013	223
3/6/2018	5,693	323
3/7/2018	17,805	352
3/8/2018	946,230	1,083,708
3/9/2018	117,911	141,637
3/10/2018	49,101	4,179
3/11/2018	40,056	0
3/12/2018	620	0
<b>Total Volume</b>	<b>34,542,684</b>	<b>63,544,249</b>

## **APPENDIX C-Lab Analytical Reports**