

City of Richmond, Virginia
Department of Public Utilities
Integrated CSS and MS4
2019 Annual Report

March 30, 2020



2019 Artful Rain Barrels
Make an Impact

Engaging Citizens and Students
in the Stormwater Cycle



Prepared by Brown and Caldwell



Legend for Cover Photos:

1. Poster for 2019 Rain Barrel Painting Program for Richmond Public Schools
2. Public Outreach at 'Save the Bay Day' June 2019
3. Poster on GRTC Bus
4. Sportsbackers post highlighting pet waste bags giveaway at event

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List of Abbreviations

CSS	combined sewer system
DPU	Department of Public Utilities
DWF	dry weather flow
DWO	dry weather overflow
I/I	inflow and infiltration
MG	million gallons
MGD	million gallons per day
MS4	Municipal Separate Storm Sewer System
NMC	nine minimum controls
SCM	six minimum controls
WWTP	Richmond Wastewater Treatment Plant

Section 1

General Information

Permittee Name

City of Richmond

System Name

City of Richmond, Department of Public Utilities (DPU)

Richmond Wastewater Treatment Plant (WWTP), Richmond Combined Sewer System (CSS) and Richmond Municipal Separate Storm Sewer System (MS4)

VPDES Permit No.

VA0063177

Reporting Period

January 1, 2019 through December 31, 2019

Certification Statement

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

 3/30/2020

Jason Pauley, Deputy Director Date
HOWARD, GLENW OPS. MANG.

Section 2

Combined Sewer System (CSS)

The modeled results of the volume and number of overflows for each combined sewer overflow (CSO) outfall based on the measured storm event data for the 2019 reporting period is presented in Tables 2-1 and 2-2 below, respectively. A map of the CSS outfalls is presented in Appendix A.

Table 2-1. Modeled Overflow Volume (MG)

CSO Outfall	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Total FY19
Hampton Street CSO Area													
19	0	0	0	0	0.48	0.008	0	0	0	0	0	0	0.49
33	0	0	0	0	0	0	0.04	0.03	0	0	0	0	0.07
McCloy Street CSO Area													
20	0	0	0	0	0.1	0	0	0	0	0	0	0	0.10
Northside James River Park CSO Area													
7	0	0	0	0	0.97	0.01	0.19	0.93	0	0	0	0	2.10
9	0	0	0	0	0.45	0	0.17	0.19	0	0	0	0	0.81
10	0	0	0	0	2.2	0	0.47	1.5	0	0	0	0	4.17
11	0	0	0.21	0.05	3.5	0.31	1.7	3.7	0	21	1.2	0.23	31.90
Southside James River Park CSO Area													
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0.001	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0.04	2.8	1.3	17.3	11.2	10.9	19.8	0	3.2	0	0	66.54
Shockoe Creek CSO Area													
6	12.4	165	201	7.1	89.6	364	96.2	231	0	204	21.9	52.5	1,444.70
34	0	0	0	0	0.55	0	0.24	0.42	0	0	0	0	1.21
Wastewater Treatment Plant CSO Area													
14	0	1.4	6.2	1.9	17.3	10.5	11	19.1	0	7	0.31	0	74.71
21	0.87	3	15.7	2.7	24.5	38	21.9	33.8	0	23.6	1.7	3.2	168.97
Gillies Creek CSO Area													
4	0	0.79	0.94	0.31	3.5	1.3	2.1	3.7	0	0.91	0.008	0.01	13.57
5	0	0.28	1.3	0	0.67	2	0.57	1.1	0	1.3	0	0.06	7.28
24	0	0	0.13	0.009	2.7	0.6	1.3	2.4	0	0.17	0	0	7.31
25	0	0	0.05	0	0.89	0.12	0.4	0.89	0	0.03	0	0	2.38
26	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0.08	0	1.8	0.004	1.6	3.1	0	0.07	0	0	6.65
35	0	0	0	0.001	0.47	0.02	0.25	0.48	0	0	0	0	1.22
39	0	0.006	0.68	0.29	3.2	1.2	1.9	3.2	0	0.82	0.1	0.01	11.41
Hilton Street CSO Area													
12	0.002	0.02	0.55	0.25	2.5	1.2	1.5	2.5	0	0.68	0.08	0.02	9.30

Table 2-2. Modeled Number of Overflow Occurrences

CSO Outfall	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Total FY19
Hampton Street CSO Area													
19	0	0	0	0	1	1	0	0	0	0	0	0	2
33	0	0	0	0	0	0	1	1	0	0	0	0	2
McCloy Street CSO Area													
20	0	0	0	0	1	0	0	0	0	0	0	0	1
Northside James River Park CSO Area													
7	0	0	0	0	1	1	1	3	0	0	0	0	6
9	0	0	0	0	1	0	1	2	0	0	0	0	4
10	0	0	0	0	1	0	1	1	0	0	0	0	3
11	0	0	1	2	3	4	4	4	0	4	2	2	26
Southside James River Park CSO Area													
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	1	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	1	4	5	6	5	5	4	0	4	0	0	34
Shockoe Creek CSO Area													
6	3	5	3	2	1	4	2	4	0	2	2	1	29
34	0	0	0	0	1	0	1	4	0	0	0	0	6
Wastewater Treatment Plant CSO Area													
14	0	4	4	4	6	6	4	4	0	4	2	0	38
21	2	2	4	4	7	6	5	4	0	4	2	3	43
Gillies Creek CSO Area													
4	0	3	4	5	7	6	5	6	0	4	1	2	43
5	0	2	3	0	1	6	2	3	0	2	0	1	20
24	0	0	1	1	2	4	2	4	0	2	0	0	16
25	0	0	1	0	2	2	2	4	0	1	0	0	12
26	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	1	0	1	1	4	4	0	2	0	0	13
35	0	0	0	1	5	1	4	4	0	0	0	0	15
39	0	1	4	4	6	6	5	4	0	4	2	1	37
Hilton Street CSO Area													
12	1	1	4	4	6	6	4	4	0	4	2	1	37

Section 3

CSS and MS4 Nine Minimum Controls (NMC) and Six Minimum Controls (MCM)

3.1 Operation and Maintenance of the CSS (NMC 1)

3.1.1 Inspection and Maintenance of CSS Control Structures and Pump Stations

The City follows a regular schedule for inspection and maintenance of regulators, CSO outfalls, and pump stations. The schedule of performance of the City's O&M program is summarized in Table 3-1 and 3-2 below. Equipment inspection, screen cleaning and debris removal are part of the regular activities.

Table 3-1. CSS Control Structure O&M Program			
CSO Control Structures	Inspection Interval	Maintenance	
		Interval	Type
Dry Weather Regulators (29) Wet Weather Regulators (10)	Monthly	Monthly	Preventative Maintenance
CSO Outfalls (25)	Monthly	Monthly	Preventative Maintenance

Table 3-2. CSS Pump Station O&M Program				
Pump Station	Capacity (MGD)		Estimated Dry Weather Peak (MGD)	Inspection/Maintenance Interval
	Firm	Installed		
Douglasdale (on CSS)	7.5	13.0	2.2	Daily
Hampton/McCloy (on CSS)	0.9	1.7	0.4	Daily
Upham Brook	8.6	13.0	0.3	Daily

If major repairs are deemed necessary at the inspection, a work order is initiated, and the repairs are scheduled. Major repairs may be handled by the City's maintenance department or by outside contractors.

3.1.2 Sewer Flushing and Cleaning

The City follows a regular schedule for routine sewer line flushing and cleaning. Maintenance activities performed on the collection system during the 2019 reporting period are summarized in Table 3-3 below.

Table 3-3. Sewer System Maintenance Activities		
Activity	Interval	Quantity
Sewer Cleaning	Annually (at a minimum)	26.9 miles
CCTV Inspection	Annually	29.7 miles

3.1.3 Catch Basin Cleaning

The City follows a regular schedule for routine catch basin cleaning. The City cleaned 2,119 catch basins throughout the CSS during the 2019 reporting period.

3.2 Use of Collection System for Storage (NMC 2)

3.2.1 Information regarding storage at Shockoe Retention Basin and Hampton/McCloy Tunnel

Storage is provided in the Shockoe and Hampton/McCloy CSO areas through existing retention facilities.

- The Shockoe facilities serve about 8,000 acres of the CSS and comprise a 35 million gallon (MG) retention basin with upstream storage of about 10 MG in diversion structures and arch and box sewers.
- The Hampton/McCloy tunnel serves about 1,012 acres of the CSS and comprises a 7.2 MG retention tunnel.

3.2.2 Sewer Re-lining Activities to reduce Inflow and Infiltration (I/I)

The City implements a sewer lining program annually to reduce I/I. The City lined 37,708 feet of sewer during the 2019 reporting period.

3.2.3 Operation of WWTP influent pumping to fill intercepting system

During wet weather events the Main Pumping Station is operated at 75 MGD to maximize flow to the WWTP. As the wet weather event continues, combined sewage is stored in the interceptor system before overflows occur. Portions of the intercepting sewers that convey flow to the WWTP are located at elevations below the lowest CSO outfall overflow elevation. The majority of these low-lying intercepting sewers are in the Shockoe CSO drainage area where the lowest overflow elevation is 1.00 feet. Table 3-4 below summarizes the intercepting sewers below the lowest CSO overflow elevation and the corresponding estimated storage capacity.

Table 3-4. Intercepting Sewers Below Lowest CSO Overflow Elevation			
Intercepting Sewer	Diameter (inches)	Length Below (El + 1.00 (feet))	Storage Capacity (MG)
Lower Goodes Creek	72	10,905	2.61
Twin River Crossings	66	1,100	0.39
Hull Street	60	2,700	0.40
Southside CSO Conveyance (1)	90	4,650	1.54

Shockoe	96	2,700	1.02
Gillies Creek	60	2,500	0.37
Northside CSO Conveyance (2)	96, 84, 60	2,850	0.89
Total			7.22
(1) Southside CSO Conveyance stores CSS to an elevation of 10.0 feet			
(2) Northside CSO Conveyance stores CSS to an elevation of 16.0 feet			

3.2.4 Tide Gate Inspections

The City routinely inspects and makes necessary repairs to tide gates to reduce tidal intrusion into the collection system. The City follows a regular schedule for inspection and maintenance of tide gates. The schedule of performance of the City's O&M program is summarized in Table 3-5 below. Equipment inspection, and debris removal are part of the regular activities.

Table 3-5. Tide Gate O&M Program			
Gates	Inspection Interval	Maintenance	
		Interval	Type
Gordon Avenue Tide Gate	Monthly	Monthly	Preventative Maintenance
Stockton Street Tide Gate	Monthly	Monthly	Preventative Maintenance
Shockoe Tide Gate	Monthly	Monthly	Preventative Maintenance

3.2.5 Use of Public and Private Stormwater Facilities in the CSS Area

Local retention facilities provide additional stormwater storage in the CSS area. Examples of these types of facilities are shown in Table 3-6 below.

Table 3-6. Local Stormwater Retention Facilities in the CSS Area		
Site	Location	Owner
Brander St. Pump Station Holding Pond	Brander St.	City
Gordon Ave. Pump Station Holding Pond	Gordon Ave.	City
DPU Operations Parking Lot	Commerce Rd.	City
Sonoco Products Company	Commerce Rd.	Private (1)
BP Products North America	Commerce Rd.	Private (1)
Citgo Petroleum Corporation	Maury St.	Private (1)
First Energy Corporation	Maury St.	Private (1)
Magellan Terminals Holdings, L.P. Richmond Terminal	East First St.	Private (1)
Transmontaigne Terminating	Commerce Rd.	Private (1)

Table 3-6. Local Stormwater Retention Facilities in the CSS Area

Site	Location	Owner
(1) Industry that retains stormwater on-site during wet weather events and control releases to permit limits at the WWTP		

3.2.6 Use of Real Time Decision Support System to manage flows during CSO Events

Beginning in late 2018, DPU began investigations into using remote sensors to record flow (and other parameters) in the collection system and at combined overflow points. DPU planned to study the system for one year to determine if this technology would be useful in controlling flows using existing pipe capacity. This current monitoring system (show below in Figure 3-1) is comprised of 29 depth sensors, 20 flow meter and 10 rain gauges. The monitoring system is scheduled to be expanded with the installation of another 29 depth sensors and 10 flow meters as Phase 1.5 of this project.

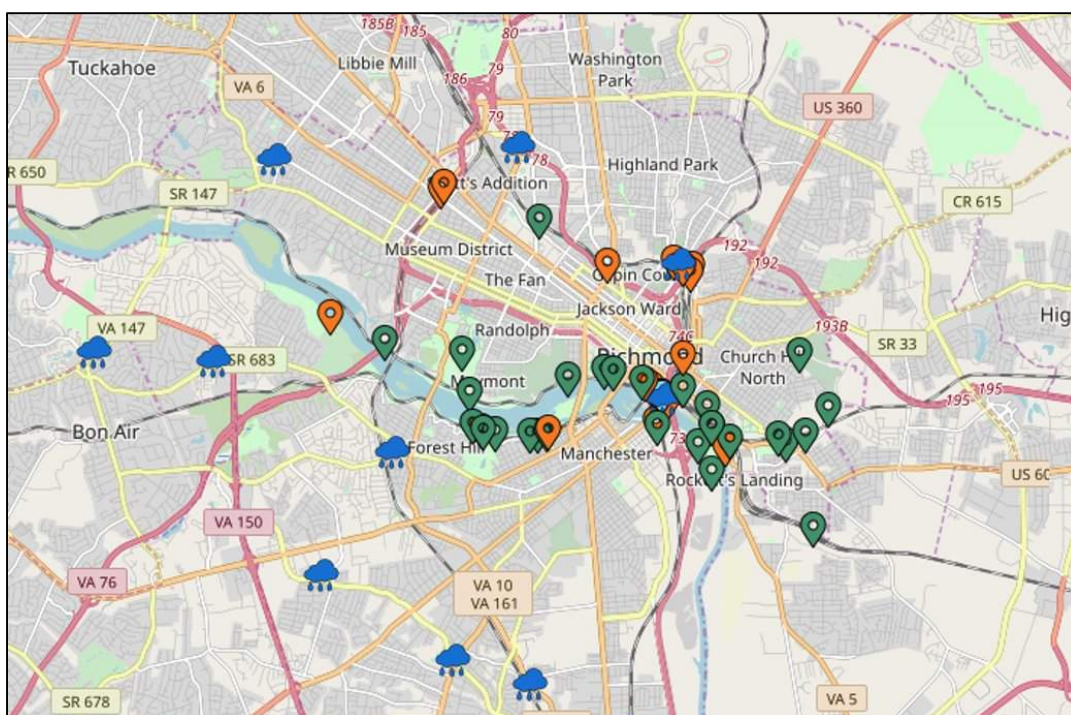


Figure 3-1: Collection System Monitoring System

The data can be displayed in real time, as shown below in Figure 3-2.

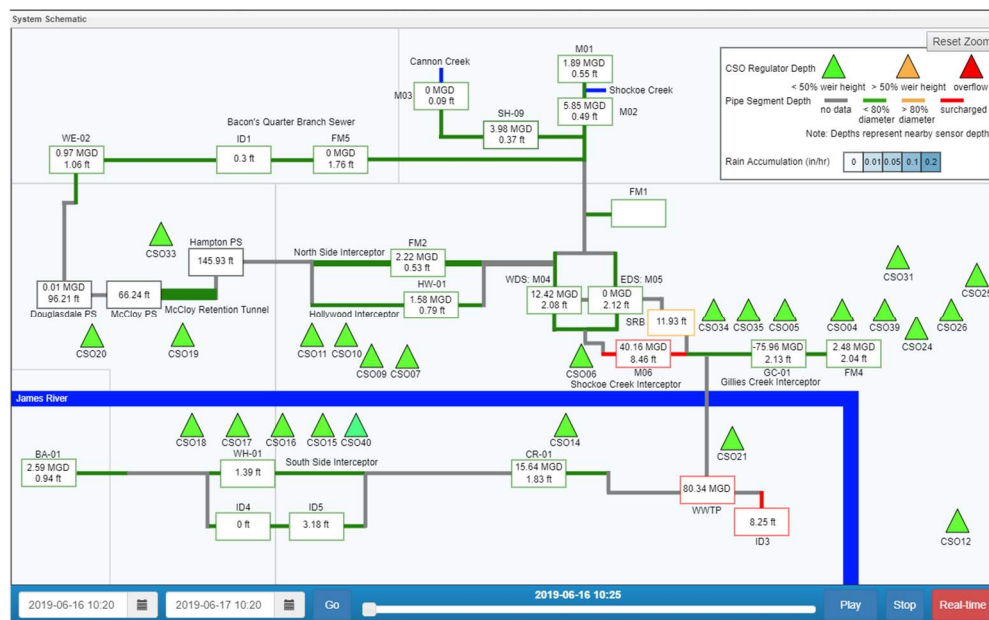


Figure 3-2: Real Time Collection System Data Display

By adding control mechanisms to certain points throughout the system, flow will be able to be maximized to the treatment plant in those areas of the city that do not currently have excess pipe storage capacity by utilizing existing capacity where it already exists. DPU anticipates a reduction of anywhere from 25 – 35% in current CSO discharge volume.

DPU is at the beginning of this project and are currently planning the next phase. It is anticipated that DEQ will be involved in those discussions moving forward.

3.3 Review of Pretreatment Program (NMC 3)

3.3.1 Changes or Use of Pretreatment Program Authority to minimize flows during CSO Events

The City administers an industrial pretreatment program as required by the VPDES permit. Industries discharging to the CSS retain stormwater on-site during wet weather events and control releases to permit limits at the WWTP. Information on individual industries which utilize retention facilities is summarized in Section 3.2.5 – Use of Public and Private Stormwater Facilities in the CSS Area. Each industry is issued an Industrial User Permit which includes a section on Discharge of Stormwater. The below statement was added to the Industrial User Permits:

E. Storm water runoff collected within the containment dike structure shall be released to the City's Treatment System in accordance with the following criteria:

1. There shall be no discharge of floating solids, visible foam or oily sheen in other than trace amounts; and
2. During storm events where the accumulation of rainfall is in excess of 2.2 inches; the permittee will use the installed precipitation gauge system to determine the volume of rainfall at the terminal; which would then trigger the terminal to call the City of

- Richmond's Department of Public Utilities Publicly Owned Treatment Works (POTW) at (804) 646-8721 to inform them of the level of rainwater retained in the diked area. It is at this time that the POTW will advise whether the plant is able to handle your facility's effluent. Nevertheless, neither your facility's nor the POTW's welfare will be jeopardized.
3. The Terminal Manager shall contact the City's Environmental Compliance Officer on 804.646.8661 and notify him/her of the intent to discharge, at least 24 hours prior to initiating any discharge other than in 2 above.

During this reporting period, there have been no additional changes to the program to minimize flow during a CSO event.

3.4 Maximize Flow to the WWTP for Treatment (NMC 4)

3.4.1 Operation of WWTP during Precipitation events to show Maximization of Treatment of Wet Weather Flows

The City maximizes flow to the WWTP during wet weather events by performing the following actions:

- Influent flow at the WWTP is increased to 75 MGD in wet weather conditions (see Figure 3-3).
- Flows up to 75 MGD are treated at the WWTP to permit limits.
- Combined sewage is stored in the Shockoe Retention Basin (see Figure 3-4), Hampton/McCloy Tunnel (see Figure 3-5) and the collection system prior to overflow.
- The Shockoe Retention Basin and Hampton/McCloy tunnel are to be drained within 48 hours after overflow conditions concluded. During the draining process the WWTP will continue to operate at 75 MGD.

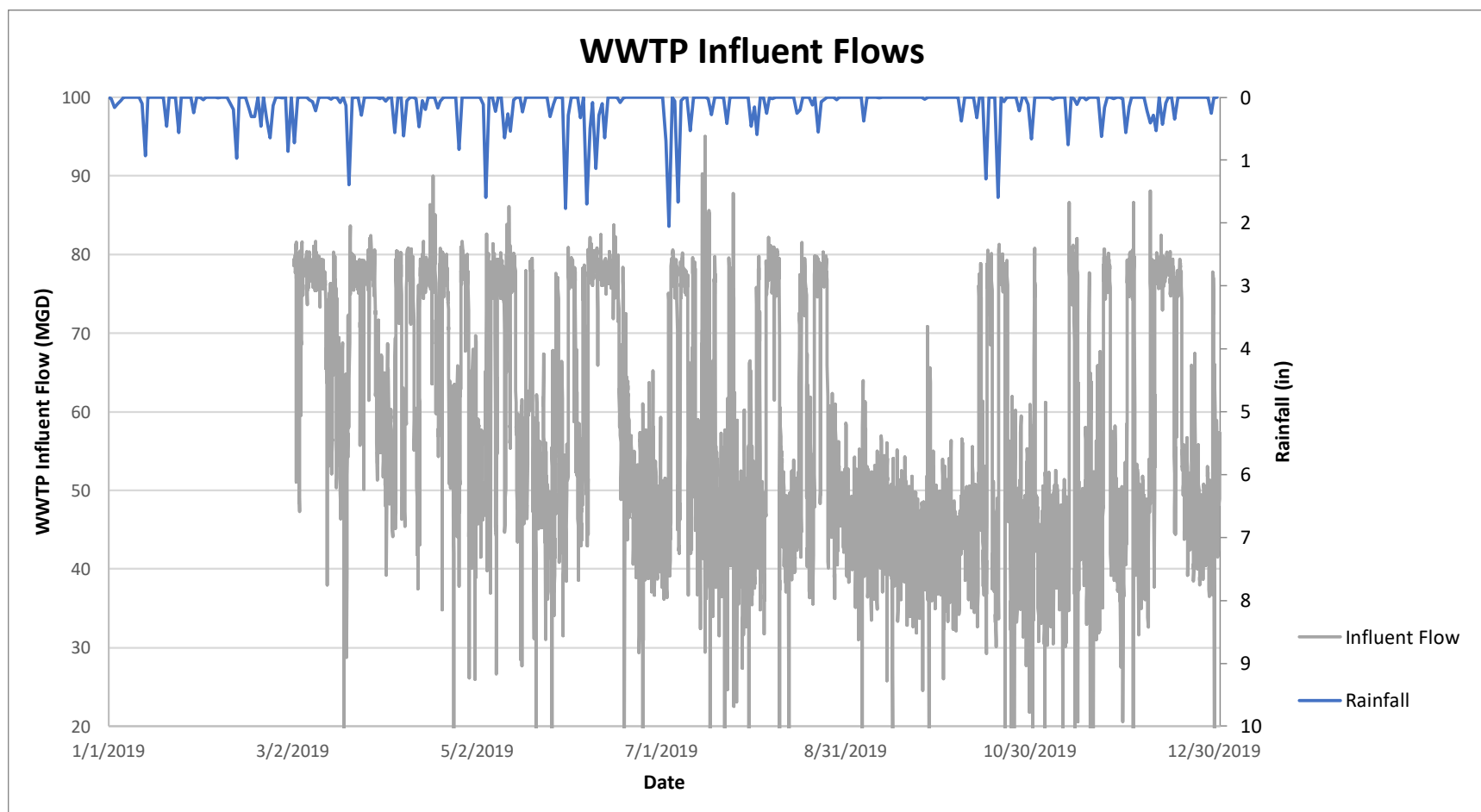


Figure 3-3: WWTP Influent Flows

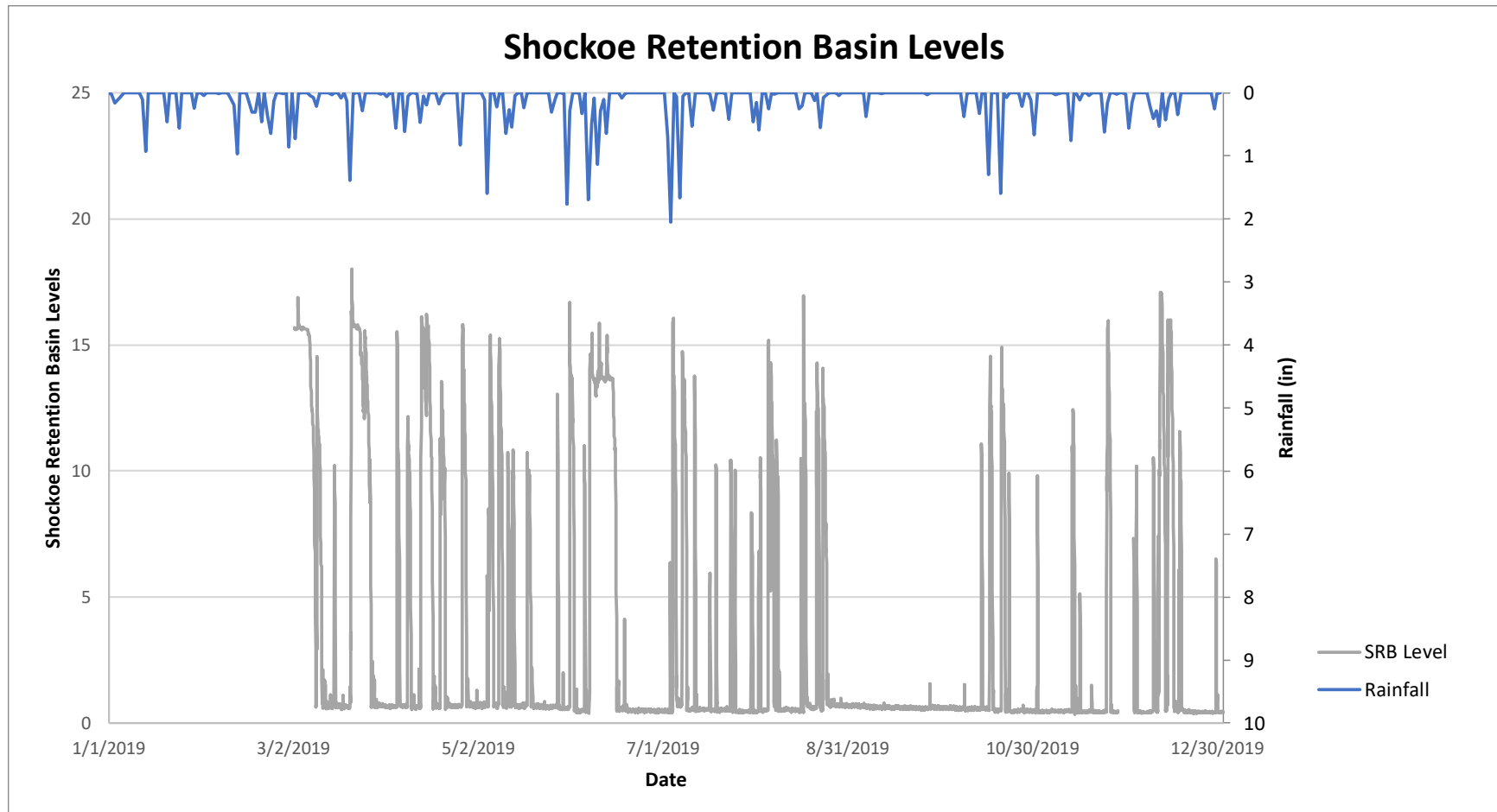


Figure 3-4: Shockoe Retention Basin Levels

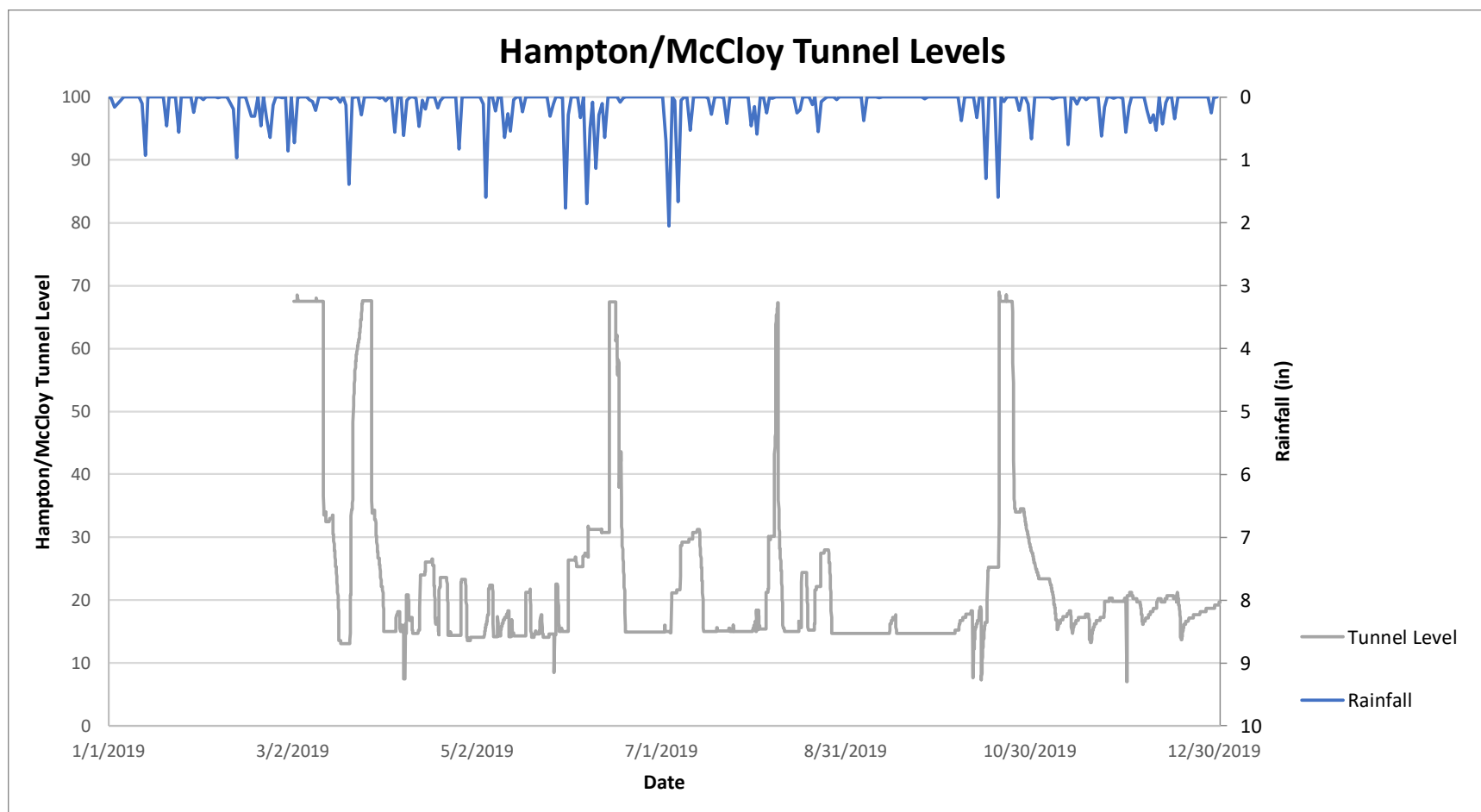


Figure 3-5: Hampton/McCloy Tunnel Levels

3.5 Eliminate Dry Weather Overflows (DWOs) (NMC 5)

3.5.1 Inspection and Maintenance of Diversion Facilities

The City regularly inspects and maintains CSS diversion facilities to prevent dry weather overflows, see Section 3.1.1.

If a dry weather discharges occurs, the City maintains an “on call” team of maintenance personnel to respond to blockages or other occurrences that could result in dry weather discharges.

3.5.2 Monitoring of Pumping Stations for DWOs

The City inspects and maintains the pump stations on a daily basis to prevent dry weather overflows, see Section 3.1.1.

If a dry weather discharges occurs, the City maintains an “on call” team of maintenance personnel to respond to blockages or other occurrences that could result in dry weather discharges.

3.5.3 Operation of the Shockoe Retention Basin

The Shockoe retention basin is continuously staffed. The basin is utilized to store combined sewage during wet weather conditions and is drained within 48 hours after overflow conditions have concluded. The 2019 operating levels of the Shockoe Retention Basin are shown in Section 3.4.1.

3.5.4 Reports of DWOs

All dry weather overflows are reported in accordance with the VPDES permit. Table 3-7 below summarizes each dry weather overflow event that occurred during the reporting period.

Table 3-7. Dry Weather Overflow Reports			
Date of Incident	Location of Incident	Volume Discharged (gallons)	Event Description
3/4/19	3909 Sulgrave Road	50	8-inch sewer line blocked with leaves; cleared line with sewer jet truck
3/25/19	306 St. David's Lane	500	8-inch sewer line blocked with leaves and sticks; cleared line with sewer jet truck
4/22/19	9523 Creeks Summit Circle	500	8-inch sewer line blocked with debris and grease; cleared line with sewer jet truck
6/17/19	3920 Douglasdale Road	<50	Douglasdale pump station wet well back up (station out of service for repair)
10/16/19	308 St. David's Lane	500	8-inch sewer line blocked with leaves and sticks; cleared line with sewer jet truck
10/22/19	Swanson Road and Barlen Drive	600	8-inch sewer line blocked with grease; cleared line with sewer jet truck

3.6 Control Solid and Floatable Materials in the CSS (NMC 6)

3.6.1 Cleaning and Maintenance related to Control of Solid and Floatable Materials

The City implements many programs and strategies to capture and remove solid and floatable material from CSS areas. Table 3-8 below summarizes the city-wide programs conducted during the reporting period.

Table 3-8. Solid and Floatable Material Capture Programs	
Program	Quantity
Loose-Leaf Collection	3,337 tons removed
Litter Basket Collection	382.44 tons removed
Catch Basin Cleaning	2,119 basins cleaned
Street Sweeping	4,287 miles cleaned

Additional strategies the City implements to control solid and floatable material in CSS areas include:

- The Shockoe retention facilities provide continuous mechanical screening for over two-thirds of the CSS. Screening operations at the facilities are increased during leaf season.
 - The Shockoe Diversion Structure Trash Rake Replacement project is currently under design to replace the screening system at the Shockoe West Diversion Structure to increase the volume of the screenings removed from the facility.
- The Hampton/McCloy tunnel provides continuous mechanical screening. All flow captured in the tunnel is screened prior to transfer to the WWTP, which consist of 1,012 acres of the CSS. The tunnel is equipped with solid and floatable capture chambers.
- The Northside and Southside James River Park CSO conveyance facilities have flotation or stilling chambers and/or static screens along with baffles to capture solid and floatable material. The material captured is transferred to the intercepting sewers for removal at the WWTP.

3.7 Public Education and Outreach (MCM 1, NMC 7 and NMC 8)

3.7.1 List of High-Priority Stormwater Issues and Strategies

The City identified three high-priority stormwater issues to be addressed in their public education and outreach program.

3.7.1.1 High Priority Issue #1: Pet Waste

- Rationale for Selection: Minimize the degree of pet waste runoff to reduce the bacteria loads entering local waterways
- Identification of Public Audience: Pet Owners
- Strategy: Traditional written and alternative materials

The specific events/media utilized to address public education on Pet Waste are summarized below in Table 3-9.

Table 3-9. Strategies to Communicate High Priority Issue #1 – Pet Waste

Date	Event/Media	Audience Reached
03.23.2019	Richmond SPCA Dog Jog and 5K	385
04.06.2018	Dogtown Dog Parade and Pupperpalooza	26
05.06.2019	Bark in the Park	319
06.17.2019 - 07.07.2019 and 07.15.2019 - 07.21.2019	Public Service Announcement	818,000
06.17.2019 - 08.11.2019	Public Service Announcement	331,200
06.17.2019 - 08.11.2019	Public Service Announcement	4,130,400
07.29.2019	Human Adventure Dog Walk	4
09.15.2019	Paddle for Pups	22
09.21.2019	Richmond Dog Festival	9,000
10.16.2016	Kresge CREWS Convening	22

3.7.1.2 High Priority Issue #2: General Stormwater Awareness

- Rationale for Selection: Educate residents on stormwater and its impact on the environment to improve the quality and minimize the quantity of urban runoff from residential areas
- Identification of Public Audience: Richmond citizens and school-age students
- Strategy: Traditional written, alternative, signage, and media materials

The specific events/media utilized to address public education on General Stormwater Awareness are summarized below in Table 3-10.

Table 3-10. Strategies to Communicate High Priority Issue #2 – General Stormwater Awareness

Date	Event/Media	Audience Reached
01.2019	Utility Bill Inserts	53,000 (# of Inserts)
01.01.2018 - 02.05.2019	Billboards	178,805
03.05.2019 - 07.31.2019	GRTC Bus Ads	4,265,000
03.11.2019	Virginia Flood Awareness Week Kick-Off	20
04.12.2019 - 04.18.2019	Rain Barrel Showcasing at City Hall	135
04.20.2019	Love Your Block Kick-Off	14
04.22.2019	Earth Day at Southside Community Service Center	51
04.27.2019	Enrichmond Earth Day of Service at Chimborazo Park	76
05.2019	Magazine and Newspaper Ads – Richmond Magazine	250,000
05.10.2019	Clean the Bay Day Press Event	13

Table 3-10. Strategies to Communicate High Priority Issue #2 – General Stormwater Awareness		
Date	Event/Media	Audience Reached
05.20.2019	Information Showcasing at the East District Center	18
06.2019 + 07.2019 Double Issue	Magazine and Newspaper Ads – Richmond Family Magazine	105,000
06.02.2019	Magazine and Newspaper Ads – Richmond Times-Dispatch	416,593
06.03.2019 - 07.28.2019	Commercials	857,943
06.10.2019 - 07.28.2019	Commercials	2,5823,00
07.2019	Magazine and Newspaper Ads – Richmond Magazine	250,000
08.01.2019 - 11.17.2019	GRTC Bus Ads	2,985,500
08.29.2019	Rain Barrel Pick Up	5
08.30.2019	Rain Barrel Pick Up	5
09.2019 - 10.2019	Magazine and Newspaper Ads – Richmond Home & Garden	250,000
10.16.2019	Rain Barrel Workshop	20
10.29.2019	Rain Barrel Workshop	20
11.10.2019	King of the James	210

3.7.1.3 High Priority Issue #3: Litter Awareness

- Rationale for Selection: Minimize the degree of litter entering the storm sewer system and local waterways to achieve higher water quality
- Identification of Public Audience: Pedestrians
- Strategy: Traditional written, alternative, and signage materials

The specific events/media utilized to address public education on Litter Awareness are summarized below in Table 3-11.

Table 3-11. Strategies to Communicate High Priority Issue #3 – Litter Awareness		
Date	Event/Media	Audience Reached
04.03.2019	Posters - Tobacco Row	14 (# of Posters)
04.19.2019	Pfizer Earth Day	44
06.15.2019	Storm Drain Art Installation and Painting	
06.16.2019	Storm Drain Art Installation and Painting	
08.05.2019	Posters – City Hall	34 (# of Posters)

3.7.2 Proper Disposal of Substances - Public Education Programs and Facility Tours

The educational programs and tours conducted and/or hosted by the City during the reporting period to educate on the proper disposal of substances are summarized in Table 3-12 below.

Date	Program/Tour	Audience Reached
01.07.2019	City of Richmond New Employee Orientation	19
01.22.2019	City of Richmond New Employee Orientation	20
02.04.2019	City of Richmond New Employee Orientation	18
02.19.2019	City of Richmond New Employee Orientation	31
03.04.2019	City of Richmond New Employee Orientation	16
03.11.2019	Two Floodwall Tours for the Virginia Flood Awareness Week Kick-Off Event with the Virginia Department of Conservation and Recreation	20
03.18.2019	City of Richmond New Employee Orientation	16
03.27.2019	WWTP Tour - George Wythe High School	30
04.15.2019	City of Richmond New Employee Orientation	13
04.20.2019	Love Your Block Kick-Off Workshop	14
04.24.2019	WWTP Tour - The New Community School Richmond	30
04.29.2019	City of Richmond New Employee Orientation	28
05.13.2019	City of Richmond New Employee Orientation	32
06.10.2019	City of Richmond New Employee Orientation	14
06.25.2019	WWTP Tour - Math-Science Innovation Center Summer Regional Governor's School	28
07.08.2019	City of Richmond New Employee Orientation	22
07.22.2019	City of Richmond New Employee Orientation	12
08.05.2019	City of Richmond New Employee Orientation	14
08.19.2019	City of Richmond New Employee Orientation	14
09.03.2019	City of Richmond New Employee Orientation	8
09.16.2019	City of Richmond New Employee Orientation	13
09.17.2019	Southern Barton Heights Community Association	4
09.30.2019	WWTP Tour - DEQ, SLAF, WQTF	8
09.30.2019	City of Richmond New Employee Orientation	17
10.08.2019	WWTP Tour - DPU Citizens' Academy	20
10.14.2019	City of Richmond New Employee Orientation	29
10.21.2019	American Public Works Association North Carolina Stormwater Chapter	45
10.23.2019	Imagine a Day Without Water	26
10.28.2019	City of Richmond New Employee Orientation	16
10.29.2019	WWTP Tour - Chesapeake Bay Foundation	12
11.12.2019	City of Richmond New Employee Orientation	15

3.7.3 Pretreatment Awareness Programs

The pretreatment awareness programs that were implemented to encourage industrial waste reduction through recycling and improved housekeeping are summarized in Table 3-13 below.

Table 3-13. Awareness Programs to Encourage Waste Reduction		
Date	Event/Program	Audience Reached
01.19.2019	Household Hazardous Waste Event	400
05.18.2019	Household Hazardous Waste Event	350
09.14.2019	Richmond Fall Cleaning + E-Cycle Day	500

3.8 Public Involvement and Participation (MCM 2 and NMC 8)

3.8.1 Public Input on MS4 Program

Stormwater complaints received by the City, and complaints that were addressed and closed out through the duration of the reporting period are summarized in Table 3-14 below.

Table 3-14. Stormwater Complaints Summary (Cityworks)			
Type	Assigned Priority (on average)	No. of Complaints Received	No. of Complaints Closed
Illicit Discharge	1	14	13
Street Catch Basin Cleaning	2	635	548
Storm Basin Manhole Missing	2	41	38
Storm Drain Problem	2	117	506
General Storm Complaint	3	659	480
Storm Miscellaneous	3	4	3
Damaged Basin	3	96	89
Construction/Reconstruction	3	1	1
Major Cave-In/Wash-Out	3	6	3
Total		1,573	1,681

3.8.2 Published Information on a City-Controlled website pertaining to the CSO Control and MS4 Program

Published information on the CSO control and MS4 programs is located at the following City-controlled websites:

<http://www.richmondgov.com/PublicUtilities/projectCombinedSewerOverflow.aspx>

http://www.richmondgov.com/PublicUtilities/StormwaterWhatIsIt.aspx#ms4_comply

3.8.3 Public Involvement Activities

The public involvement activities conducted and/or hosted by the City during the reporting period are summarized in Table 3-15 below.

Table 3-15. Public Involvement Activities			
Date	Event	Attendees	Water Quality Improvement
01.19.2019	Household Hazardous Waste Event	400	350 cars, distributed 23 RVAH2O hand sanitizers, 15 notebooks, 4 RVAH2O stickers, 21 pet waste bags, 9 grease can lids, 10 DPU tote bags, 19 water bottles with straws, and 8 Pick Up the Poop pencils, 25 x 25 gallons of household hazardous waste were collected; document shredding and electronic recycling were also available, and an additional 239 gallons of paint were collected
03.11.2019	Virginia Flood Awareness Week Kick-Off	20	Shared information about water quality including two tours of Richmond's floodwall, and distributed 10 ponchos and 10 flashlights
03.23.2019	Richmond SPCA Dog Jog and 5K	385	369 pet waste bags distributed
04.06.2018	Dogtown Dog Parade and Pupperpalooza	26	26 pet waste bags distributed
04.12.2019 - 04.18.2019	Rain Barrel Showcasing at City Hall	135	Requests for rain barrels
04.19.2019	Pfizer Earth Day	44	Shared information about water quality
04.20.2019	Love Your Block Kick-Off	14	Presentation about stormwater and reduction and quality control methods and distributed Understanding Stormwater handout
04.22.2019	Earth Day at Southside Community Service Center	51	Tabled alongside Clean City Commission and Central Virginia Waste Management Authority
04.27.2019	Enrichmond Earth Day of Service at Chimborazo Park	76	Sponsored and participated, RVAH2O logo on bags at all locations
05.06.2019	Bark in the Park	319	124 pet waste bags distributed
05.10.2019	Clean the Bay Day Press Event	13	NBC12 came, Chesapeake Bay Foundation posted to Instagram with 400+ likes, James River Park System Superintendent Bryce Wilk and Rotary club members attended
05.18.2019	Household Hazardous Waste Event	350	500 cars came, electronics recycling and document shredding available
05.20.2019	Information Showcasing at the East District Center	18	Distributed 6 pet waste bags,
06.01.2019	Clean the Bay Day	21	Collected 328 pounds of litter
06.09.2019	VWEA Belle Isle Tree Planting Volunteer Event	15	Only Rain in the Drain bracelets distributed to volunteers
06.15.2019	Storm Drain Art Installation and Painting		Storm drain art maps were made available to pedestrians and passerby
06.16.2019	Storm Drain Art Installation and Painting		400 cars, 31 x 25-gallons of household hazardous waste were collected; document shredding, electronic recycling, and Christmas tree chipping also available
07.29.2019	Human Adventure Dog Walk	4	Shared information about pet waste and water quality
08.29.2019	Rain Barrel Pick Up	5	Distributed 5 rain barrels

Table 3-15. Public Involvement Activities

Date	Event	Attendees	Water Quality Improvement
08.30.2019	Rain Barrel Pick Up	5	Distributed 10 rain barrels
09.14.2019	Richmond Fall Cleaning + E-Cycle Day	500	369 pet waste bags distributed
09.15.2019	Paddle for Pups	22	22 pet waste bags distributed
09.21.2019	Richmond Dog Festival	9,000	Distributed 54 RVAH2O water bottles without straws and 11 Cleaner Water Faster Pollution Solution handouts
10.16.2016	Kresge CREWS Convening	22	108 pet waste bags distributed
10.16.2019	Rain Barrel Workshop	20	20 rain barrels distributed
10.29.2019	Rain Barrel Workshop	20	20 rain barrels distributed
11.10.2019	King of the James	210	150 participants and 60 volunteers; distributed 4 pet waste flyers, 39 pet waste bags, 94 RVAH2O bike tube pouches, 22 small stickers and 73 big stickers, and 100 RVAH2O camp mugs

3.8.4 Public Involvement Metric Evaluation

The metrics used to evaluate the effectiveness of the implemented public involvement activities are summarized in Table 3-16 below.

Table 3-16. Public Involvement Activities

Public Involvement Opportunity Outlined in Program Plan	Metric as Defined in Program Plan	Metric Measurements	Evaluation
Monitoring – Volunteer Monitoring	The number of participants per training event	58 volunteer samples were conducted during the 2019 reporting year	Engaging volunteers to perform sampling improves the awareness of the local water quality and perpetuates the behavior in each individual.
Restoration – Watershed Cleanup	The number of participants per event	04.27.2019 Enrichmond Earth Day of Service at Chimborazo Park (3215 East Broad Street): 76 participants 05.10.2019 Clean the Bay Day Advance Press Event at Great Shiplock Park (2308 Dock Street): 13 participants 06.01.2019 Clean the Bay Day at Great Shiplock Park (2308 Dock Street): 21 participants 06.09.2019 Virginia Water Environment Association Belle Isle Tree Planting at Belle Isle: 30 participants - Total: 140 participants	Engaging 140 volunteers in hours of watershed cleanup removes pounds of trash, litter, and debris directly from and adjacent to our waterways, and also perpetuates the behavior in each individual. Many divisions within the City of Richmond and organizations within Richmond host litter cleanups and the impact they have on keeping debris out of our stormwater system and the James River are impactful. Keeping our waters and infrastructure litter- and pollutant-free are important and beneficial to protecting and improving water quality.

Table 3-16. Public Involvement Activities			
Public Involvement Opportunity Outlined in Program Plan	Metric as Defined in Program Plan	Metric Measurements	Evaluation
Disposal or Collection Event – Household Hazardous Waste Collection Events	The number of barrels of hazardous waste collected per event	01.19.2019 at Parker Field Annex (1710 Robin Hood Road): 31 55-gallon barrels collected 05.18.2019 at Elkhardt-Thompson Middle School (7825 Forest Hill Avenue): 25 55-gallon barrels collected - Total: 56 55-gallon barrels collected	Collecting 56 55-gallon barrels of household hazardous waste is 3,080 gallons of hazardous material the City of Richmond helped to keep out of the environment and waterways. Given the damage that even a gallon of toxic material can have on water quality, 3,080 gallons of material properly disposed of is important to perpetuating our clean water efforts. Keeping hazardous waste from being improperly disposed of and out of the environment, our stormwater and combined stormwater and sewer infrastructure, and out of our waterways is beneficial to improving and protecting water quality.

3.8.5 Public Meetings Organized/Attended

During the reporting period, the City organized and participated in meetings with the community, regulatory agencies, stakeholders, and other MS4 permittees. These meetings are summarized in Table 3-17 below.

Table 3-17. Public Involvement Meetings	
Date	Program/Tour
01.24.2019	Middle James Roundtable
02.27.2019	East End Green Infrastructure Collaborative
02.28.2019	Mayorathon
03.27.2019	City Council Liaisons
04.11.2019	Love Your Block Small Grant Application Review
04.16.2019	RVAH2O Stakeholder Meeting
04.20.2019	Love Your Block Kick-Off Workshop
04.30.2019	Middle James Roundtable
05.10.2019	Clean the Bay Day Press Event
05.10.2019	Love Your Block Partners Meeting
05.28.2019	Mid-Atlantic Stormwater and Litter Workshop
06.17.2019 - 06.18.2019	Mid-Atlantic Marine Debris Summit
06.20.2019	East End Green Infrastructure Collaborative
07.16.2019	Middle James Roundtable
07.25.2019	James River Advisory Council Meeting

Table 3-17. Public Involvement Meetings	
Date	Program/Tour
08.15.2019	Keep Henrico Beautiful Don't Trash Central Virginia Meeting
08.15.2019	Keep Virginia Beautiful + VDOT Regional Litter Meeting
09.17.2019	Southern Barton Heights Community Association
10.12.2019	Virginia Environmental Assembly
10.17.2019	Middle James Roundtable Annual Meeting
10.21.2019	American Public Work Association North Carolina Stormwater Chapter
10.24.2019	James River Advisory Council Meeting
11.05.2019	World Fish Migration Day
11.15.2019	Enrichmond Partner Meeting
11.18.2019	RVAH2O Stakeholder Meeting
11.20.2019	City Council Liaisons + Alliance for the Chesapeake Bay

3.8.6 CSO Warning Signs

Eighteen (18) of the twenty-five (25) CSO outfalls were predicted to discharge, more than once per summer on average. Each of these outfalls are required to have a CSO warning sign per the VPDES permit. These signs have been installed and have been maintained by DPU throughout the reporting year.

3.8.7 Local Press Coverage of CSO Program

Local press coverage of the CSS is ongoing. The following articles/sessions were released during the reporting period:

- An article in The Virginia Mercury discusses how the increase in rainfall due to climate change is expected to complicate the issue of combined sewer overflows. Link to the article: <https://www.virginiamercury.com/2019/04/15/more-rainfall-a-consequence-of-climate-change-expected-to-make-sewage-overflows-worse/>
- Good Morning RVA hosted an “Ask Me Anything” (AMA) podcast session with Thad Williamson, candidate for Richmond City Council, in which questions were asked regarding combined sewer overflows. Link to article: <https://us1.campaign-archive.com/?u=0dcf6892b1132dcc66117cf6&id=1465440690>
- An article in Richmond Times-Dispatch details how the James River has been improved and has been named the 2019 Thiess International Riverprize Winner. Link to article: https://www.richmond.com/news/james-river-improves-its-grades-wins-international-award/article_906bc748-4820-5a14-84e4-d98352960ecd.html?utm_source=WhatCountsEmail&utm_medium=NEWS%20-%20RTD%20Daily%20Business&utm_campaign=RTD%20Daily%20Business
- An article in Chesapeake Bay Magazine details how the James River has been improved and has been named the 2019 Thiess International Riverprize Winner. Link to article: <https://chesapeakebaymagazine.com/james-river-wins-international-prize-for-clean-water-comeback/>

- An article on NBC12 details how the James River has been improved and has been named the 2019 Thiess International Riverprize Winner. Link to article: <https://www.nbc12.com/2019/10/22/james-river-receives-most-coveted-international-award-rivers-watersheds/>
- An article in the Augusta Free Press details how the James River has been improved and has been named the 2019 Thiess International Riverprize Winner. Link to article: <https://augustafreepress.com/james-river-selected-as-2019-thiess-international-riverprize-winner/>
- An article on the James River Association site, details how the James River has been improved and has been named the 2019 Thiess International Riverprize Winner. Link to article: <https://thejamesriver.org/press-release-james-river-selected-as-the-2019-thiess-international-riverprize/>

3.9 Illicit Discharge Detection and Elimination (MCM 3)

3.9.1 MS4 Map and Information Confirmation Statement

The MS4 map and information table are up to date as of December 31st of the reporting period, and is presented in Appendix B.

3.9.2 Outfall Screening Summary

The total number of outfalls screened during the reporting period as part of the dry weather screening program is summarized in Table 3-18 below. The 2019 reporting period outfall inventory and sampling records are provided in Appendix C and D, respectively.

Table 3-18. Outfall Screening Summary		
Creek	No. of Outfalls	IDDE Potential
Manchester Canal	1	1 Potential
Grindall Creek	1	1 Unlikely
Jordon's Branch	1	1 Obvious
Princeton Creek	5	5 Unlikely
Reedy Creek	122	91 Unlikely 25 Potential 4 Suspect 2 Obvious
Broad Rock Creek	3	3 Potential
Albro Creek	1	1 Suspect
Goose Creek	1	1 Suspect
Hose Swamp Creek	2	2 Suspect
James River	1	1 Unlikely
Grindall Creek	6	4 Unlikely 1 Potential 1 Suspect
Falling Creek	23	22 Unlikely

Table 3-18. Outfall Screening Summary		
Creek	No. of Outfalls	IDDE Potential
		1 Potential
Kanawha Canal	10	7 Unlikely 2 Potential 1 Obvious
Powhite Creek	4	4 Unlikely

3.9.3 MS4 Illicit Discharges

The City investigated 26 illicit discharges during the reporting period. A summary of the illicit discharges to the MS4 is included in Appendix E.

3.10 Construction Site Stormwater Runoff Control (MCM 4)

3.10.1 Summary of Inspections

The inspections conducted at construction sites during the reporting period are summarized in Table 3-19 below.

Table 3-19. Summary of Construction Site Stormwater Inspections		
Total Conducted	Enforcement Actions	
	Type	Total
2,580	Notice to Comply	247
	Stop Work Order	8
	Notice of Violation	1

3.11 Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands (MCM 5)

3.11.1 Summary of Inspections of Stormwater Management Facilities

The inspections conducted on privately owned and permittee owned stormwater facilities during the reporting period are summarized in Table 3-20 below.

Table 3-20. Summary of Stormwater Management Facility Inspections		
Stormwater Management Facility	Total Inspections Conducted	Enforcement Actions
Privately-Owned	47	No enforcement actions taken
Public/Permittee-Owned	39	No enforcement actions taken

3.11.2 Summary of Maintenance Activities

The City did not perform any significant maintenance activities on stormwater management facilities throughout the 2019 reporting year. The City performs regular inspections and maintenance activities on City owned and operated stormwater management facilities that includes grass cutting, trash collection, and debris removal.

3.11.3 Submission Confirmation Statements

The City is in the process of submitting stormwater management facility information through the Virginia Construction Stormwater General Permit database and the DEQ BMP Warehouse.

3.12 Pollution Prevention and Good Housekeeping for Facilities Owned and Operated by the Permittee within the MS4 Service Area (MCM 6 and NCM 7)

3.12.1 Summary of New or Modified Operational Procedures

In the 2019 reporting year the following operational procedures have been modified or implemented:

- Expansion of the MS4 stormwater inspection program with the standardization of forms, and increased numbers of inspections and follow-up inspections
- Expansion of the Illicit Discharge Detection and Elimination Program with the standardization of forms, and increased numbers of inspections and follow-up inspections

3.12.2 Summary of New or Modified SWPPPs

No updates were made to the existing SWPPP's during the 2019 reporting year. Training is performed based on the operations outlined in the SWPPP's.

3.12.3 Summary of New Turf and Landscape Nutrient Management Plans

No new Turf and Landscape Plans have been implemented within the City.

3.12.4 Summary of Training Events

The City has conducted a training program for stormwater awareness for new city employees. The program provides education on spill prevention, vehicle maintenance, bulk material storage, road and parking lot maintenance and facility maintenance. A total of twenty (20) training sessions were provided throughout the 2019 reporting period to 367 attendees and are summarized in Table 3-21.

Table 3-21. Awareness Programs to Encourage Waste Reduction		
Date	Training	Audience Reached
01.07.2019	New Employee – Stormwater Awareness	19
01.22.2019	New Employee – Stormwater Awareness	20
02.04.2019	New Employee – Stormwater Awareness	18
02.19.2019	New Employee – Stormwater Awareness	31
03.04.2019	New Employee – Stormwater Awareness	16
03.18.2019	New Employee – Stormwater Awareness	16
04.15.2019	New Employee – Stormwater Awareness	13

Table 3-21. Awareness Programs to Encourage Waste Reduction		
Date	Training	Audience Reached
04.29.2019	New Employee – Stormwater Awareness	28
05.13.2019	New Employee – Stormwater Awareness	32
06.10.2019	New Employee – Stormwater Awareness	14
07.08.2019	New Employee – Stormwater Awareness	22
07.22.2019	New Employee – Stormwater Awareness	12
08.05.2019	New Employee – Stormwater Awareness	14
08.19.2019	New Employee – Stormwater Awareness	14
09.03.2019	New Employee – Stormwater Awareness	8
09.16.2019	New Employee – Stormwater Awareness	13
09.30.2019	New Employee – Stormwater Awareness	17
10.14.2019	New Employee – Stormwater Awareness	29
10.28.2019	New Employee – Stormwater Awareness	16
11.12.2019	New Employee – Stormwater Awareness	15

3.12.5 Operation and Maintenance of Septage Receiving Station

In the 2019 reporting year, the City received 1959 hauled waste discharge for a total of 2.43 million gallons. The Septage Receiving Station is inspected daily and is maintained at regular intervals.

3.12.6 Enforcement of Ordinances that prohibit substances from entering the Collection System

In the 2019 reporting year, the City performed the following activities:

- Collected 391 samples through the Strong Waste Surcharge Program
 - Issued six (6) Notices of Violations to Significant Industrial Users
- Performed 44 inspections at Significant Industrial Users Facilities
- Performed 121 Illicit Discharge Detection Inspections
- Performed 10 Stormwater Municipal Pollution Prevention Inspections

Section 4

Chesapeake Bay TMDL Action Plan Status Report

4.1.1 Implemented BMPs

The BMPs that have been implemented by the City to achieve compliance with Chesapeake Bay TMDL Action Plan are summarized in Table 4-1. The City has not acquired any credits during the 2019 reporting year.

Table 4-1. Summary of Implemented BMPs				
BMPs	Completion Date	Pollutant Removal (lbs/year)		
		Total Nitrogen	Total Phosphorus	Total Suspended Solids
Maury Stream Restoration	2016	894.0	176.0	58,720.0
Green Alleys	2016	5.7	1.5	702.0
BMPs	2017	80.2	17.4	5,088.1
Cherokee Lake and Croatan Road	2018	872.4	198.2	16,679.8
Forest Hill	2018	1,354	298.8	25,154.9
Little Westham Creek	2019	3,180.0	1,224.0	422,000.0
Pocosham Creek	2019	4,696.0	1,061.0	354,013.0

4.1.2 Chesapeake Bay TMDP Action Plan Compliance Progress

The City's progress towards meeting the required pollutant load reductions are summarized in Table 4-2.

Table 4-2. City's Chesapeake Bay TMDL Action Plan Compliance Progress						
Goal	Pollutant (lbs/year)					
	Total Nitrogen		Total Phosphorus		Total Suspended Solids	
Removal to Date (End of 2019 Reporting Year)	11,082.2		2,976.8		882,357.8	
2018 Goal	633.7	1,749%	145.5	2,046%	64,646.4	1,365%
2023 Goal	4,852.7	228.4%	1,038.0	286.8%	456,385.5	193.3%
2028 Goal	12,085.0	91.7%	2,568.0	115.9%	1,134,901.2	77.7%

4.1.3 Future Planned BMPs

The BMPs that are scheduled to be constructed in the future are summarized in Table 4-3.

Table 4-1. Summary of Future Planned BMPs				
BMPs	Completion Date	Pollutant Removal (lbs/year)		
		Total Nitrogen	Total Phosphorus	Total Suspended Solids
Rattlesnake Creek	2020	1,072.0	494.0	170,000.0
Pinecamp Stream Restoration	2021	8,091.0	3,778.0	4,620,047.0

Section 5

Local TMDL Action Plan Status

The City has an approved James River Bacteria TMDL Action Plan dated 11/04/2010. The City has continued to implement the CSO program nine minimum control standards and the MS4 six minimum control standards to reduce the pollutants of concern.

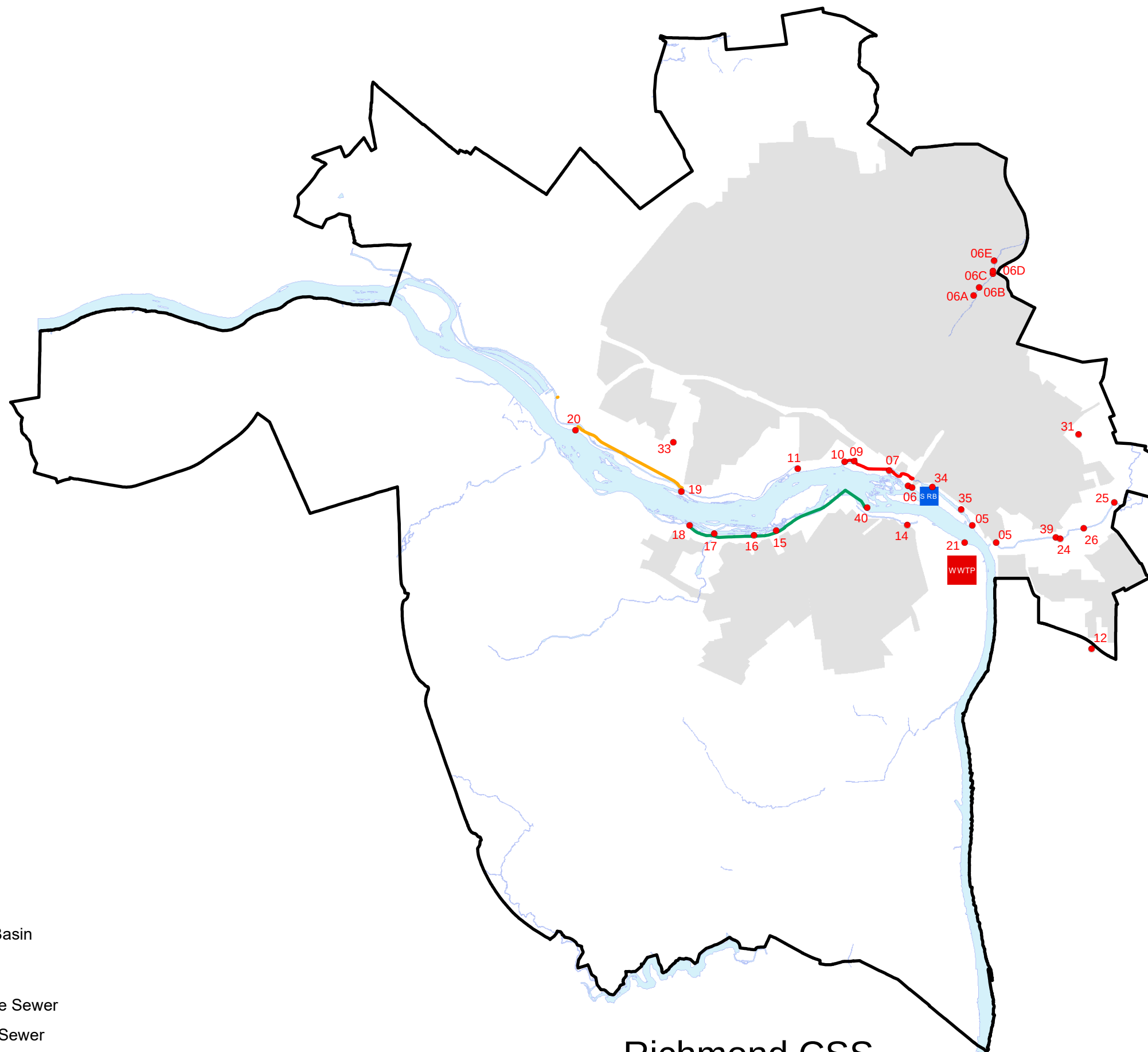
The City has recently completed sewer separation projects for CSO outfalls 28A and 28E. The successful completion of these projects has removed two outfalls that discharge into Gillies Creek, and has removed 53 acres from the City's combined sewage service area.

Section 6

James River and Tributary Monitoring Report

Virginia Commonwealth University (VCU) conducts water quality monitoring in the James River and its tributaries on behalf of the City. The “2019 Water Quality Monitoring Activities” Report completed by VCU is provided in Appendix F.

Appendix A: Richmond CSS Map



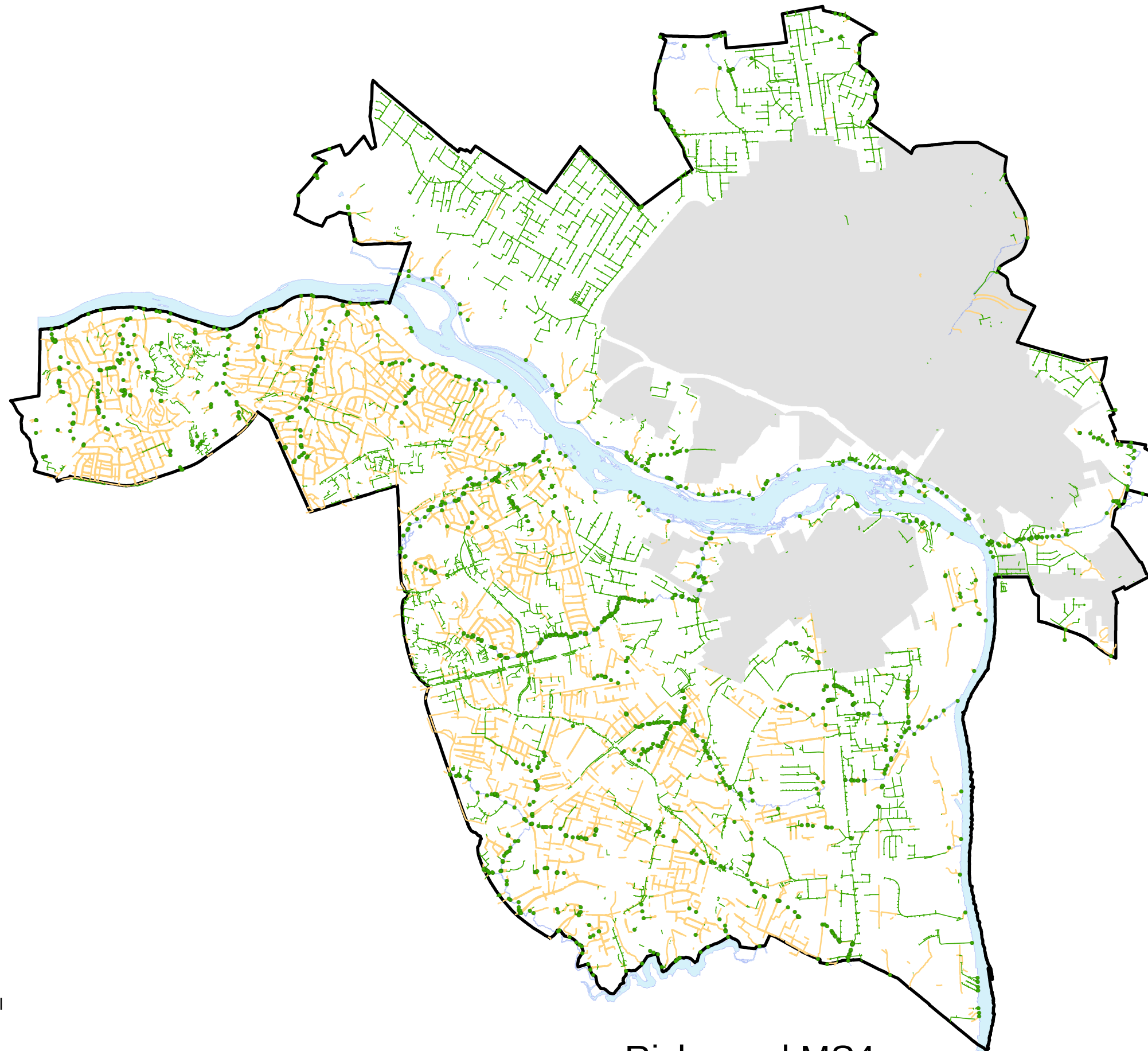
Legend

- CSO Outfalls
- SRB Shockoe Retention Basin
- WWTP WWTP
- CSO 1/2 Conveyance Sewer
- CSO 3 Conveyance Sewer
- Hampton/McCloy Tunnel
- CSS Drainage Area

Richmond CSS
March 2020

0 3,000 6,000 12,000 18,000 24,000 Feet

Appendix B: Richmond MS4 Map



Legend

- Storm System Outfall
- Storm System Pipe
- Storm System Open Channel
- CSS Drainage Area

Richmond MS4
March 2020

0 3,000 6,000 12,000 18,000 24,000 Feet

Appendix C: Outfall Inventory Records

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
MC-3093	1/8/2019	Manchester Canal	No	Yes	Potential	Yes	Has Legacy ORI, no pH
GRC-6375	1/9/2019	Grindall Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
JB-3332	1/9/2019	Jordon's Branch	No	Yes	Obvious	Yes	Accumulation of Litter / Miscellaneous Debris
PRC-8181	1/14/2019	Princeton Creek	No		Unlikely	Yes	
PRC-1303	1/14/2019	Princeton Creek	No		Unlikely	Yes	
PRC-1305	1/14/2019	Princeton Creek	No		Unlikely	Yes	
PRC-8177	1/14/2019	Princeton Creek	No		Unlikely	Yes	
PRC-1304	1/14/2019	Princeton Creek	No		Unlikely	Yes	
RCC-006 (CWP)	1/17/2019	Reedy Creek	No	Yes	Obvious	Yes	
RCC-6616	1/22/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-5589	1/23/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-3139	1/23/2019	Reedy Creek	Yes	Yes	Potential	Yes	Appears to Function as Designed, GW I/I Indications
RCC-A01	1/23/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-4339	1/23/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
RCC-5559	1/23/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
RCC-5548	1/23/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-5538	1/23/2019	Reedy Creek	No	No	Unlikely	No	N/A
RCC-4397	1/23/2019	Reedy Creek	Yes	No	Unlikely	No	Appears to Function as Designed
RCC-5535	1/23/2019	Reedy Creek	No	No	Unlikely	No	Maintenance Required

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-5531	1/23/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-4398	1/23/2019	Reedy Creek	No	Yes	Unlikely	No	No bottle set. Water appears clear and odorless
RCC-5525	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-5520	1/28/2019	Reedy Creek	No	No	Unlikely	No	Erosion Associated With Outfall
RCC-A02	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-3046	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-3048	1/28/2019	Reedy Creek	No	Yes	Suspect	Yes	Appears to Function as Designed
RCC-6592	1/28/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
RCC-3048	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-6595	1/28/2019	Reedy Creek	No	Yes	Unlikely	No	Maintenance Required
RCC-3042	1/28/2019	Reedy Creek	No	No	Potential	No	Appears to Function as Designed
RCC-3041	1/28/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-5514	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-3044	1/28/2019	Reedy Creek	No	No	Potential	No	Appears to Function as Designed
RCC-3043	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, GW I/I Indications
RCC-3045	1/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-6599	1/28/2019	Reedy Creek	No	Yes	Potential	Yes	Accumulation of Litter / Miscellaneous Debris, Flow blocked by organic material, backing up. Excessive
RCC-6610	1/29/2019	Reedy Creek	No	No	Unlikely	No	Erosion Associated With Outfall
RCC-5487	1/29/2019	Reedy Creek	No	No	Unlikely	No	N/A

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-5511	1/29/2019	Reedy Creek	No	Yes	Unlikely	Yes	N/A
RCC-5506	1/29/2019	Reedy Creek	No	Yes	Unlikely	Yes	N/A
RCC-5493	1/29/2019	Reedy Creek	No	Yes	Unlikely	No	Appears to Function as Designed
RCC-5492	1/29/2019	Reedy Creek	No	Yes	Potential	Yes	N/A
RCC-A03	1/29/2019	Reedy Creek	No	No	Potential	No	New outfall, geotagged
RCC-001	1/29/2019	Reedy Creek	No	Yes	Unlikely	No	Check ID
RCC-002	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-003	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-004	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-007	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-008	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-009	1/29/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-010	1/29/2019	Reedy Creek	No	Yes	Obvious	Yes	signs of illicit discharge. However, while passing the outfall on the return trip, obvious evidence of illicit discharge was observed. This outfall is associated with an IDDE. The pipe receives flow from the maintenance shop at Ashton Square Apartments. See "012919 Ashton Square Illicit Connection IDDE".
RCC-011	1/29/2019	Reedy Creek	No	Yes	Suspect	Yes	Verify id
RCC-014	1/31/2019	Reedy Creek	Yes	Yes	Unlikely	No	Appears to Function as Designed, GW I/I Indications
RCC-015	1/31/2019	Reedy Creek	Yes	No	Unlikely	No	Appears to Function as Designed
RCC-016	1/31/2019	Reedy Creek	Yes	Yes	Potential	No	GW I/I Indications

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-018	2/4/2019	Reedy Creek	No	Yes	Unlikely	Yes	GW I/I Indications
RCC-019	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-020	2/4/2019	Reedy Creek	No	Yes	Unlikely	Yes	GW I/I Indications
RCC-021	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-022	2/4/2019	Reedy Creek	No	Yes	Potential	Yes	GW I/I Indications
RCC-023	2/4/2019	Reedy Creek	No	Yes	Unlikely	Yes	GW I/I Indications
RCC-024	2/4/2019	Reedy Creek	No	No	Potential	No	N/A
RCC-026	2/4/2019	Reedy Creek	No	No	Unlikely	No	Outfall partially blocked by root mass.
RCC-025	2/4/2019	Reedy Creek	No	No	Unlikely	No	Outfall partially blocked by organic material.
RCC-7531	2/4/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris, Erosion Associated With Outfall
RCC-027	2/4/2019	Reedy Creek	No	No	Unlikely	No	Unclear if this outfall functions correctly
RCC-028	2/4/2019	Reedy Creek	No	Yes	Unlikely	Yes	GW I/I Indications
RCC-029	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-030	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-031	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-032	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-034	2/4/2019	Reedy Creek	No	No	Potential	No	Accumulation of Litter / Miscellaneous Debris, Evidence of Dumping, No flow, but given potential status due to amount of debris, potential for dumping.
RCC-033	2/4/2019	Reedy Creek	No	Yes	Unlikely	No	Appears to Function as Designed

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-035	2/4/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-036	2/5/2019	Reedy Creek	No	Yes	Suspect	Yes	Appears to Function as Designed
RCC-037	2/5/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-038	2/5/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-039	2/5/2019	Reedy Creek	No				
RCC-040	2/5/2019	Reedy Creek	No	Yes	Unlikely	No	N/A
RCC-A06	2/5/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-041	2/5/2019	Reedy Creek	No				Outfall not found. See notes.
RCC-042	2/5/2019	Reedy Creek	No	Yes	Suspect	Yes	Appears to Function as Designed
RCC-043	2/5/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-044	2/5/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-045	2/5/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
STM00085775	2/5/2019	Reedy Creek	No				Flag for deletion.
RCC-046	2/6/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-047	2/6/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-049	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-050	2/6/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-051	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-052	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Not geotagged

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-054	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-053	2/6/2019	Reedy Creek	No	No	Unlikely	No	No signal could not geotag
RCC-055	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-057	2/6/2019	Reedy Creek	No	Yes	Potential	No	Appears to Function as Designed
RCC-3262	2/6/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-5473	2/6/2019	Reedy Creek	No	No	Unlikely	No	N/A
RCC-5467	2/6/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Wrong size in GIS
RCC-3270	2/15/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-6646	2/15/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed, Accumulation of Litter / Miscellaneous Debris
RCC-AO4	2/15/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Attempted to geotag in general location
RCC-A08	2/15/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-7547	2/15/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Accumulation of Litter / Miscellaneous Debris
RCC-A05	2/15/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-6651	2/15/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed
RCC-A07	2/15/2019	Reedy Creek	No	No	Unlikely	No	Erosion Associated With Outfall
STM00086644	2/21/2019	Reedy Creek	No				Flag for Deletion
STM00086645	2/21/2019	Reedy Creek					Flag for Deletion
STM0003326	2/21/2019	Reedy Creek					Flag for Deletion
STM00094941	2/21/2019	Reedy Creek					Flag for Deletion

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
STM00086650	2/21/2019	Reedy Creek					Flag for deletion
RCC-5457	2/26/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-5453	2/26/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-A09	2/26/2019	Reedy Creek	No	No	Unlikely	No	
RCC-3188	2/26/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed, Accumulation of Litter / Miscellaneous Debris, Flagged at culvert. Geotagged at
RCC-5730	2/26/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-3276	2/26/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-3192	2/26/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-5729	2/26/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-3185	2/26/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Discharges around wing wall
RCC-A10	2/26/2019	Reedy Creek	No	No	Unlikely	No	
RCC-3184	2/26/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-3275	2/26/2019	Reedy Creek	No	No	Unlikely	No	Erosion Associated With Outfall
RCC-6680	2/27/2019	Reedy Creek	No	Yes	Unlikely	Yes	Outfall associated with constructed wetlands. Initially receives flow from one inlet servicing a residential neighborhood
STM00086683	2/27/2019	Reedy Creek	No				Not observed. flag for deletion.
RCC-3190	2/27/2019	Reedy Creek	No	No	Potential	No	Accumulation of Litter / Miscellaneous Debris, Residential property next adjacent EDD has an extreme
RCC-5449	2/27/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-6684	2/27/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
RCC-9624	2/27/2019	Reedy Creek	No	Yes	Unlikely	Yes	N/A
RCC-9654	2/27/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed
RCC-9646	2/27/2019	Reedy Creek	No	Yes	Potential	Yes	Appears to Function as Designed, Forward contractor complaint.
RCC-3177	2/27/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-3167	2/27/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
RCC-6703	2/27/2019	Reedy Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed, Flagged on “Danger Soft Ground” sign.
JR-7514	2/28/2019	Reedy Creek	No	No	Unlikely	No	Appears to Function as Designed, Erosion Associated With Outfall
JR-1923	2/28/2019		No	Yes	Potential	Yes	N/A
RCC-3176	3/1/2019	Reedy Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
RCC-5463	3/1/2019	Reedy Creek	No	No	Unlikely	No	N/A
STM00095517	3/1/2019	Reedy Creek					Flag for Deletion
JR-3108	3/6/2019		No	Yes	Unlikely	Yes	Appears to Function as Designed
BRC-013	3/7/2019	Broad Rock Creek	No	Yes	Potential	Yes	Appears to Function as Designed, Labeled as potential until lab results are reviewed
BRC-6823	3/7/2019	Broad Rock Creek	No	Yes	Potential	Yes	Appears to Function as Designed
BRC-6821	3/7/2019	Broad Rock Creek	No	Yes	Potential	Yes	Appears to Function as Designed, Sample not collected due to status and based on previous results.
AB-045	3/7/2019	Albro Creek	No	Yes	Suspect	Yes	Appears to Function as Designed, Outfall Re-tagged, Outfall rated high based in previous issues.
GSC-002	3/7/2019	Goose Creek	No	Yes	Suspect	Yes	Appears to Function as Designed
HSC-015	3/7/2019	Horse Swamp Creek	No	Yes	Suspect	Yes	Appears to Function as Designed
STM00033104	3/8/2019	James River	No				Flag for Deletion

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
STM00086238	3/8/2019	James River					Flag for Deletion
STM00033105	3/8/2019	James River					Flag for Deletion
JR-A01	3/8/2019	James River	No	No	Unlikely	No	Erosion Associated With Outfall
HSC-018B	3/8/2019	Horse Swamp Creek	No	Yes	Suspect	Yes	Flow not collected, Outfalls labeled as "A" and "B" to better isolate flow.
GRC-2962	3/13/2019	Grindall Creek	No	Yes	Potential	Yes	Previous issues with SSO discharging directly to GRC.
GRC-023	3/13/2019	Grindall Creek	No	Yes	Suspect	Yes	N/A
GRC-024	3/13/2019	Grindall Creek	No	Yes	Unlikely	Yes	N/A
GRC-025	3/13/2019	Grindall Creek	No	Yes	Unlikely	No	No bottles. Not sampled. Obvious ID indicators not present.
GRC-0977	3/13/2019	Grindall Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
FC-3524	3/28/2019	Grindall Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed, Accumulation of Litter / Miscellaneous Debris
FC-6196	3/28/2019		No	Yes	Unlikely	Yes	N/A
FC-6193	3/28/2019		No	Yes	Unlikely	Yes	Appears to Function as Designed
FC-1272	4/11/2019	Falling Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed, GW I/I Indications
FC-A01	4/11/2019	Falling Creek	No	Yes	Unlikely	No	Erosion Associated With Outfall
FC-6383	4/11/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed
FC-A02	4/11/2019	Falling Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
FC-0964	4/11/2019	Falling Creek	No	Yes	Unlikely	Yes	Erosion Associated With Outfall
FC-1248	4/16/2019	Falling Creek	No	No	Unlikely	No	N/A
FC-1276	4/16/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
FC-2991	4/17/2019	Falling Creek	No	No	Potential	No	Accumulation of Litter / Miscellaneous Debris
FC-0965	4/17/2019	Falling Creek	No	No	Unlikely	No	Sample not collected due to stagnation.
FC-1228	4/17/2019	Falling Creek	No	Yes	Unlikely	No	No obvious IDDE indicators at inlet. Flow from west side of Hopkins only, flow insufficient to sample.
FC-1235	4/17/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed
FC-0186	4/23/2019	Falling Creek	No	Yes	Unlikely	Yes	Appears to Function as Designed
FC-1511	4/23/2019	Falling Creek	No	No	Unlikely	No	Erosion Associated With Outfall
FC-0971	4/24/2019	Falling Creek	No	Yes	Unlikely	Yes	Accumulation of Litter / Miscellaneous Debris, Evidence of Dumping
FC-1521	4/24/2019	Falling Creek	No	No	Unlikely	No	Erosion Associated With Outfall
FC-A02	4/24/2019	Falling Creek	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
FC-6169	4/24/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed
FC-0200	4/24/2019	Falling Creek	No	No	Unlikely	No	N/A
FC-1980	4/24/2019	Falling Creek	No	No	Unlikely	No	Erosion Associated With Outfall
STM00102943 (Point of Discharge)	4/24/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed
STM00086367 (Point of Discharge)	4/26/2019	Falling Creek	No	No	Unlikely	No	Appears to Function as Designed
FC-6372	4/26/2019	Falling Creek	No	Yes	Unlikely	Yes	Erosion Associated With Outfall
KHC-032	5/2/2019	Kanawha Canal	No	No	Obvious	No	Erosion Associated With Outfall, Obvious due to sediment impact to KHC.
FC-1522	5/6/2019	Falling Creek	No	No	Unlikely	No	ORI form not completed upon inspection. ORI completed 05/06/2019.
RCC-4398	5/7/2019	Reedy Creek	No	Yes	Unlikely	No	No bottle set. Water appears clear and odorless
KHC-7645	5/7/2019	Kanawha Canal	No	No	Unlikely	No	Appears to Function as Designed

Outfall ID:	Date	Creek	Rain Event Past 48 hours?	Flow Present?	IDDE Potential	Sample Collected?	Additional Notes:
KHC-7448	5/7/2019	Kanawha Canal	No				Outfall not found
KHC-3005	5/7/2019	Kanawha Canal	No	No	Unlikely	No	Maintenance Required
KHC-7539	5/8/2019	Kanawha Canal	No	No	Unlikely	No	N/A
KHC-3012	5/8/2019	Kanawha Canal	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
KHC-3011	5/8/2019	Kanawha Canal	No	No	Potential	No	Accumulation of Litter / Miscellaneous Debris, This outfall was marked potential based on the proximity of a waste dumpster storage area.
KHC-7623	5/8/2019	Kanawha Canal	No	No	Unlikely	No	Appears to Function as Designed
KHC-3020	5/8/2019	Kanawha Canal	No	No	Potential	No	N/A
KHC-7532	5/8/2019	Kanawha Canal	No	No	Unlikely	No	Appears to Function as Designed
KHC-7563	5/8/2019	Kanawha Canal	No	No	Unlikely	No	Accumulation of Litter / Miscellaneous Debris
PWC-040	5/22/2019	Powwhite Creek	No	No	Unlikely	No	Appears to Function as Designed, Accumulation of Litter / Miscellaneous Debris
PWC-3993	5/31/2019	Powwhite Creek	No	No	Unlikely	No	Erosion Associated With Outfall
PWC-3658	5/31/2019	Powwhite Creek	No				Not considered a MS4
PWC-A01	5/31/2019	Powwhite Creek	No	No	Unlikely	No	N/A
PWC-5656	7/18/2019	Powwhite Creek	No	No	Unlikely	No	Erosion Associated With Outfall

Appendix D: Creek Walk Sampling Records

SIDN	DSCR	LCOD	CDAT	CTIM	SCOL	ANAM	ACOM	TPQL	AUNT	AREF	AUSR	ASTD
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	CAA	1/9/2019
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	MEM	1/9/2019
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	Total Nitrogen	7.64	1	mg/L	TN HACH	MEM	1/9/2019
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/11/2019
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	Total Suspended Solids	< 1	1	mg/L	SM18/2540 D	KLP	1/9/2019
AB57467	MC-3093	CREEK-WALK	1/8/2019	13:46	VR	Potassium	8.29	0.250	mg/L	EPA 200.7	AWS	1/15/2019
AB57473	JB-3332	CREEK-WALK	1/9/2019	13:20	VR	E. Coli	1200	1	MPN/100 mL	SM 20 9223 B	CAA	1/10/2019
AB57473	JB-3332	CREEK-WALK	1/9/2019	13:20	VR	Ammonia by TNT	0.087	0.015	mg/L	HACH	MEM	1/10/2019
AB57473	JB-3332	CREEK-WALK	1/9/2019	13:20	VR	Total Nitrogen	3.23	1	mg/L	TN HACH	MEM	1/10/2019
AB57473	JB-3332	CREEK-WALK	1/9/2019	13:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/11/2019
AB57473	JB-3332	CREEK-WALK	1/9/2019	13:20	VR	Potassium	2.91	0.250	mg/L	EPA 200.7	AWS	1/15/2019
AB57474	PRC-MULTI/SCREEN	CREEK-WALK	1/9/2019	14:05	VR	E. Coli	276	1	MPN/100 mL	SM 20 9223 B	CAA	1/10/2019
AB57474	PRC-MULTI/SCREEN	CREEK-WALK	1/9/2019	14:05	VR	Ammonia by TNT	0.071	0.015	mg/L	HACH	MEM	1/10/2019
AB57474	PRC-MULTI/SCREEN	CREEK-WALK	1/9/2019	14:05	VR	Total Nitrogen	3.19	1	mg/L	TN HACH	MEM	1/10/2019
AB57474	PRC-MULTI/SCREEN	CREEK-WALK	1/9/2019	14:05	VR	Total Phosphorus	0.1	0.1	mg/L	EPA 365.1	FB	1/11/2019
AB57474	PRC-MULTI/SCREEN	CREEK-WALK	1/9/2019	14:05	VR	Potassium	2.30	0.250	mg/L	EPA 200.7	AWS	1/15/2019
AB57518	JB-001	SPECIAL_SAMPLE	1/10/2019	10:05	VR	E. Coli	579	1	MPN/100 mL	SM 20 9223 B	CAA	1/10/2019
AB57518	JB-001	SPECIAL_SAMPLE	1/10/2019	10:05	VR	Ammonia by TNT	0.110	0.015	mg/L	HACH	MEM	1/11/2019
AB57518	JB-001	SPECIAL_SAMPLE	1/10/2019	10:05	VR	Total Nitrogen	2.69	1	mg/L	TN HACH	MEM	1/11/2019
AB57518	JB-001	SPECIAL_SAMPLE	1/10/2019	10:05	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/11/2019
AB57518	JB-001	SPECIAL_SAMPLE	1/10/2019	10:05	VR	Potassium	2.97	0.250	mg/L	EPA 200.7	AWS	1/15/2019
AB57519	JB-002	SPECIAL_SAMPLE	1/10/2019	11:00	VR	E. Coli	135	1	MPN/100 mL	SM 20 9223 B	CAA	1/10/2019
AB57519	JB-002	SPECIAL_SAMPLE	1/10/2019	11:00	VR	Ammonia by TNT	0.043	0.015	mg/L	HACH	MEM	1/11/2019
AB57519	JB-002	SPECIAL_SAMPLE	1/10/2019	11:00	VR	Total Nitrogen	1.26	1	mg/L	TN HACH	MEM	1/11/2019
AB57519	JB-002	SPECIAL_SAMPLE	1/10/2019	11:00	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	FB	1/11/2019
AB57519	JB-002	SPECIAL_SAMPLE	1/10/2019	11:00	VR	Potassium	7.70	0.250	mg/L	EPA 200.7	AWS	1/15/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	E. Coli	196	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	Ammonia by TNT	0.233	0.015	mg/L	HACH	MEM	1/17/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	Total Nitrogen	3.93	1	mg/L	TN HACH	MEM	1/17/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	Potassium	1.57	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	pH	7.8		su	SM 20 4500 H+ B	VR	1/17/2019
AB57824	RCC-CWP	CREEK-WALK	1/17/2019	09:12	VR	Temperature in °C	14.4		° C	SM 20 2550 B	VR	1/17/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	E. Coli	122	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	Ammonia by TNT	0.132	0.015	mg/L	HACH	MEM	1/17/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	Total Nitrogen	3.16	1	mg/L	TN HACH	MEM	1/17/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	Potassium	1.44	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	Temperature in °C	14.5		° C	SM 20 2550 B	VR	1/17/2019
AB57825	RC-1	CREEK-WALK	1/17/2019	09:45	VR	pH	8.0		su	SM 20 4500 H+ B	VR	1/17/2019

AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	E. Coli	201	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	Ammonia by TNT	0.447	0.015	mg/L	HACH	MEM	1/17/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	Total Nitrogen	6.74	1	mg/L	TN HACH	MEM	1/17/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	Potassium	1.56	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	pH	6.8		su	SM 20 4500 H+ B	VR	1/17/2019
AB57826	RC-3	CREEK-WALK	1/17/2019	10:10	VR	Temperature in °C	13.8		° C	SM 20 2550 B	VR	1/17/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	E. Coli	613	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	Ammonia by TNT	0.356	0.015	mg/L	HACH	MEM	1/17/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	Total Nitrogen	3.92	1	mg/L	TN HACH	MEM	1/17/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	Potassium	1.18	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	Temperature in °C	13.6		° C	SM 20 2550 B	VR	1/17/2019
AB57827	RC-4	CREEK-WALK	1/17/2019	10:35	VR	pH	6.8		su	SM 20 4500 H+ B	VR	1/17/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	E. Coli	11	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	Ammonia by TNT	0.020	0.015	mg/L	HACH	MEM	1/17/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	Total Nitrogen	2.94	1	mg/L	TN HACH	MEM	1/17/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	Potassium	1.13	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	pH	6.0		su	SM 20 4500 H+ B	VR	1/17/2019
AB57828	SCHUTTE EAST	CREEK-WALK	1/17/2019	11:00	VR	Temperature in °C	12.7		° C	SM 20 2550 B	VR	1/17/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	E. Coli	8	1	MPN/100 mL	SM 20 9223 B	CAA	1/17/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	Ammonia by TNT	0.020	0.015	mg/L	HACH	MEM	1/17/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	Total Nitrogen	1.97	1	mg/L	TN HACH	MEM	1/17/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/ZN	1/18/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	Potassium	1.35	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	Temperature in °C	11.4		° C	SM 20 2550 B	VR	1/17/2019
AB57829	SCHUTTE WEST	CREEK-WALK	1/17/2019	11:15	VR	pH	7.2		su	SM 20 4500 H+ B	VR	1/17/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	E. Coli	1730	1	MPN/100 mL	SM 20 9223 B	MEM	1/22/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	pH	9.4		su	SM18/4500H+ B	VR	1/22/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	Temperature in °C	7.9		°C	SM 20 2550 B	VR	1/22/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	Potassium	2.54	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZN/FB	1/23/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	Ammonia by TNT	0.067	0.015	mg/L	HACH	FB	1/23/2019
AB57985	UT-ROC	CREEK-WALK	1/22/2019	08:55	VR	Total Nitrogen	2.38	1	mg/L	TN HACH	FB	1/23/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	E. Coli	1200	1	MPN/100 mL	SM 20 9223 B	MEM	1/22/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	pH	8.9		su	SM18/4500H+ B	VR	1/22/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	Temperature in °C	8.0		°C	SM 20 2550 B	VR	1/22/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	Potassium	1.43	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZN/FB	1/23/2019
AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	Ammonia by TNT	0.067	0.015	mg/L	HACH	FB	1/23/2019

AB57986	UT-RCC2	CREEK-WALK	1/22/2019	09:25	VR	Total Nitrogen	2.90	1	mg/L	TN HACH	FB	1/23/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	E. Coli	1120	1	MPN/100 mL	SM 20 9223 B	MEM	1/22/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	pH	8.2		su	SM18/4500H+ B	VR	1/22/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	Temperature in °C	7.1		°C	SM 20 2550 B	VR	1/22/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	Potassium	2.43	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZN/FB	1/23/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	Total Nitrogen	2.32	1	mg/L	TN HACH	FB	1/23/2019
AB57987	UT-RCC3	CREEK-WALK	1/22/2019	09:55	VR	Ammonia by TNT	0.106	0.015	mg/L	HACH	FB	1/23/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	E. Coli	15	1	MPN/100 mL	SM 20 9223 B	MEM	1/22/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	pH	7.5		su	SM18/4500H+ B	VR	1/22/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	Temperature in °C	5.0		°C	SM 20 2550 B	VR	1/22/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	Potassium	1.82	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	Total Phosphorus	0.7	0.1	mg/L	EPA 365.1	ZN/FB	1/23/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	Ammonia by TNT	0.099	0.015	mg/L	HACH	FB	1/23/2019
AB57988	UT-RCC4	CREEK-WALK	1/22/2019	10:20	VR	Total Nitrogen	3.56	1	mg/L	TN HACH	FB	1/23/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	E. Coli	308	1	MPN/100 mL	SM 20 9223 B	MEM	1/22/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	pH	6.9		su	SM18/4500H+ B	VR	1/22/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	Temperature in °C	5.7		°C	SM 20 2550 B	VR	1/22/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	Potassium	1.97	0.250	mg/L	EPA 200.7	AWS	1/24/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	ZN/FB	1/23/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	Ammonia by TNT	0.104	0.015	mg/L	HACH	FB	1/23/2019
AB57989	UT-RCC5	CREEK-WALK	1/22/2019	10:50	VR	Total Nitrogen	3.78	1	mg/L	TN HACH	FB	1/23/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	E. Coli	63	1	MPN/100 mL	SM 20 9223 B	MEM	1/23/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	pH	6.9		su	SM18/4500H+ B	VR	1/23/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	Temperature in °C	0.8		°C	SM 20 2550 B	VR	1/23/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	Ammonia by TNT	0.331	0.015	mg/L	HACH	FB	1/24/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	Total Nitrogen	2.04	1	mg/L	TN HACH	FB	1/24/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/25/2019
AB58051	CREEK-WALK RCC-3139	CREEK-WALK	1/23/2019	09:35	VR	Potassium	2.39	0.250	mg/L	EPA 200.7	AWS	1/28/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	E. Coli	6	1	MPN/100 mL	SM 20 9223 B	MEM	1/23/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	pH	7.7		su	SM18/4500H+ B	VR	1/23/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	Temperature in °C	4.1		°C	SM 20 2550 B	VR	1/23/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	Ammonia by TNT	0.045	0.015	mg/L	HACH	FB	1/24/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	1/24/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/25/2019
AB58052	CREEK-WALK RCC-5589	CREEK-WALK	1/23/2019	09:20	VR	Potassium	2.95	0.250	mg/L	EPA 200.7	AWS	1/28/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	E. Coli	26	1	MPN/100 mL	SM 20 9223 B	MEM	1/23/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	pH	7.2		su	SM18/4500H+ B	VR	1/23/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	Temperature in °C	4.4		°C	SM 20 2550 B	VR	1/23/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	Ammonia by TNT	0.022	0.015	mg/L	HACH	FB	1/24/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	Total Nitrogen	4.74	1	mg/L	TN HACH	FB	1/24/2019

AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/25/2019
AB58053	CREEK-WALK RCC-4339	CREEK-WALK	1/23/2019	10:30	VR	Potassium	2.45	0.250	mg/L	EPA 200.7	AWS	1/28/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	E. Coli	4	1	MPN/100 mL	SM 20 9223 B	MEM	1/23/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	pH	7.2		su	SM18/4500H+ B	VR	1/23/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	Temperature in °C	6.3		°C	SM 20 2550 B	VR	1/23/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	Ammonia by TNT	0.025	0.015	mg/L	HACH	FB	1/24/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	Total Nitrogen	4.92	1	mg/L	TN HACH	FB	1/24/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	1/25/2019
AB58054	CREEK-WALK RCC-5559	CREEK-WALK	1/23/2019	11:00	VR	Potassium	2.06	0.250	mg/L	EPA 200.7	AWS	1/28/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	E. Coli	238	1	MPN/100 mL	SM 20 9223 B	MEM	1/28/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	Potassium	1.69	0.250	mg/L	EPA 200.7	AWS	2/1/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	pH	7.7		su	SM18/4500H+ B	VR	1/28/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	Temperature in °C	6.5		°C	SM 20 2550 B	VR	1/28/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	Total Nitrogen	1.75	1	mg/L	TN HACH	FB	1/29/2019
AB58229	CREEK-WALK RCC-6599	CREEK-WALK	1/28/2019	12:35	VR	Ammonia by TNT	0.024	0.015	mg/L	HACH	FB	1/29/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	MEM	1/28/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	Potassium	3.47	0.250	mg/L	EPA 200.7	AWS	2/1/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	pH	7.5		su	SM18/4500H+ B	VR	1/28/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	Temperature in °C	9.0		°C	SM 20 2550 B	VR	1/28/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	Total Nitrogen	4.02	1	mg/L	TN HACH	FB	1/29/2019
AB58230	CREEK-WALK RCC-3041	CREEK-WALK	1/28/2019	11:30	VR	Ammonia by TNT	0.130	0.015	mg/L	HACH	FB	1/29/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	E. Coli	649	1	MPN/100 mL	SM 20 9223 B	MEM	1/28/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	Potassium	2.34	0.250	mg/L	EPA 200.7	AWS	2/1/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	pH	7.4		su	SM18/4500H+ B	VR	1/28/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	Temperature in °C	7.5		°C	SM 20 2550 B	VR	1/28/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	Total Nitrogen	3.86	1	mg/L	TN HACH	FB	1/29/2019
AB58231	CREEK-WALK RCC-3046A	CREEK-WALK	1/28/2019	10:15	VR	Ammonia by TNT	0.032	0.015	mg/L	HACH	FB	1/29/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	E. Coli	49	1	MPN/100 mL	SM 20 9223 B	MEM	1/28/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	Potassium	2.22	0.250	mg/L	EPA 200.7	AWS	2/1/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	pH	7.6		su	SM18/4500H+ B	VR	1/28/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	Temperature in °C	6.9		°C	SM 20 2550 B	VR	1/28/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	Total Nitrogen	3.06	1	mg/L	TN HACH	FB	1/29/2019
AB58232	CREEK-WALK RCC-3046B	CREEK-WALK	1/28/2019	10:25	VR	Ammonia by TNT	0.029	0.015	mg/L	HACH	FB	1/29/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	E. Coli	21	1	MPN/100 mL	SM 20 9223 B	MEM	1/29/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	Potassium	2.04	0.250	mg/L	EPA 200.7	AWS	2/6/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	pH	6.1		su	SM18/4500H+ B	VR	1/29/2019

AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	Temperature in °C	6.4		°C	SM 20 2550 B	VR	1/29/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	Ammonia by TNT	0.077	0.015	mg/L	HACH	FB	1/30/2019
AB58291	CREEK-WALK RCC-5511	CREEK-WALK	1/29/2019	09:25	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	1/30/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	E. Coli	12	1	MPN/100 mL	SM 20 9223 B	MEM	1/29/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	Potassium	1.35	0.250	mg/L	EPA 200.7	AWS	2/6/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	pH	6.3		su	SM18/4500H+ B	VR	1/29/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	Temperature in °C	5.1		°C	SM 20 2550 B	VR	1/29/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	1/30/2019
AB58292	CREEK-WALK RCC-5492	CREEK-WALK	1/29/2019	10:20	VR	Ammonia by TNT	0.036	0.015	mg/L	HACH	FB	1/30/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	E. Coli	15	1	MPN/100 mL	SM 20 9223 B	MEM	1/29/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	pH	6.1		su	SM18/4500H+ B	VR	1/29/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	Temperature in °C	5.6		°C	SM 20 2550 B	VR	1/29/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	Potassium	1.34	0.250	mg/L	EPA 200.7	AWS	2/6/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	Ammonia by TNT	0.047	0.015	mg/L	HACH	FB	1/30/2019
AB58293	CREEK-WALK RCC-5506	CREEK-WALK	1/29/2019	09:45	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	1/30/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	E. Coli	6	1	MPN/100 mL	SM 20 9223 B	MEM	1/29/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	Potassium	6.50	0.250	mg/L	EPA 200.7	AWS	2/6/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	pH	6.8		su	SM18/4500H+ B	VR	1/29/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	Temperature in °C	7.5		°C	SM 20 2550 B	VR	1/29/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	Ammonia by TNT	0.028	0.015	mg/L	HACH	FB	1/30/2019
AB58294	CREEK-WALK RCC-009	CREEK-WALK	1/29/2019	11:50	VR	Total Nitrogen	1.24	1	mg/L	TN HACH	FB	1/30/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	E. Coli	1990	1	MPN/100 mL	SM 20 9223 B	MEM	1/29/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	Total Phosphorus	0.4	0.1	mg/L	EPA 365.1	ZEE	1/30/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	Potassium	1.73	0.250	mg/L	EPA 200.7	AWS	2/6/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	pH	7.2		su	SM18/4500H+ B	VR	1/29/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	Temperature in °C	8.3		°C	SM 20 2550 B	VR	1/29/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	Total Nitrogen	1.68	1	mg/L	TN HACH	FB	1/30/2019
AB58295	CREEK-WALK RCC-6"PVC	CREEK-WALK	1/29/2019	11:40	VR	Ammonia by TNT	0.383	0.015	mg/L	HACH	FB	1/30/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	E. Coli	1	1	MPN/100 mL	SM 20 9223 B	TM	2/4/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	Ammonia by TNT	0.041	0.015	mg/L	HACH	ZEE	2/5/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	Total Nitrogen	4.04	1	mg/L	TN HACH	ZEE	2/5/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/6/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	Potassium	2.24	0.250	mg/L	EPA 200.7	AWS	2/7/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	pH	8.1		su	SM18/4500H+ B	VR	2/4/2019
AB58527	CREEK-WALK RCC-018	CREEK-WALK	2/4/2019	09:35	VR	Temperature in °C	10.5		°C	SM 20 2550 B	VR	2/4/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	TM	2/4/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	Ammonia by TNT	0.061	0.015	mg/L	HACH	ZEE	2/5/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	Total Nitrogen	3.15	1	mg/L	TN HACH	ZEE	2/5/2019

AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	Potassium	3.52	0.250	mg/L	EPA 200.7	AWS	2/7/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	pH	6.9		su	SM18/4500H+ B	VR	2/4/2019
AB58528	CREEK-WALK RCC-020	CREEK-WALK	2/4/2019	09:50	VR	Temperature in °C	12.4		°C	SM 20 2550 B	VR	2/4/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	TM	2/4/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	Ammonia by TNT	1.22	0.015	mg/L	HACH	ZEE	2/5/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	Total Nitrogen	2.82	1	mg/L	TN HACH	ZEE	2/5/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	Potassium	5.83	0.250	mg/L	EPA 200.7	AWS	2/7/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	pH	7.6		su	SM18/4500H+ B	VR	2/4/2019
AB58529	CREEK-WALK RCC-022	CREEK-WALK	2/4/2019	10:10	VR	Temperature in °C	12.4		°C	SM 20 2550 B	VR	2/4/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	E. Coli	172	1	MPN/100 mL	SM 20 9223 B	TM	2/4/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	Ammonia by TNT	0.107	0.015	mg/L	HACH	ZEE	2/5/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	Total Nitrogen	1.63	1	mg/L	TN HACH	ZEE	2/5/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	Potassium	1.62	0.250	mg/L	EPA 200.7	AWS	2/7/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	pH	7.7		su	SM18/4500H+ B	VR	2/4/2019
AB58530	CREEK-WALK RCC-023	CREEK-WALK	2/4/2019	10:20	VR	Temperature in °C	9.9		°C	SM 20 2550 B	VR	2/4/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	E. Coli	15	1	MPN/100 mL	SM 20 9223 B	TM	2/4/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	Ammonia by TNT	0.144	0.015	mg/L	HACH	ZEE	2/5/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	Total Nitrogen	1.68	1	mg/L	TN HACH	ZEE	2/5/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	Potassium	3.60	0.250	mg/L	EPA 200.7	AWS	2/7/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	pH	7.8		su	SM18/4500H+ B	VR	2/4/2019
AB58531	CREEK-WALK RCC-028	CREEK-WALK	2/4/2019	11:30	VR	Temperature in °C	7.1		°C	SM 20 2550 B	VR	2/4/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	TM	2/6/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	Ammonia by TNT	0.164	0.015	mg/L	HACH	ZEE	2/6/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	Total Nitrogen	4.11	1	mg/L	TN HACH	ZEE	2/6/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	Total Phosphorus	5.7	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	Potassium	25.1	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	pH	6.2		su	SM18/4500H+ B	VR	2/5/2019
AB58582	CREEK-WALK RCC-036	CREEK-WALK	2/5/2019	09:35	VR	Temperature in °C	12.2		°C	SM 20 2550 B	VR	2/5/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	E. Coli	55	1	MPN/100 mL	SM 20 9223 B	TM	2/6/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	Ammonia by TNT	0.048	0.015	mg/L	HACH	ZEE	2/6/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	Total Nitrogen	1.86	1	mg/L	TN HACH	ZEE	2/6/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	2/6/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	Potassium	2.13	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	pH	6.9		su	SM18/4500H+ B	VR	2/5/2019
AB58583	CREEK-WALK RCC-042	CREEK-WALK	2/5/2019	11:00	VR	Temperature in °C	10.8		°C	SM 20 2550 B	VR	2/5/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	E. Coli	1	1	MPN/100 mL	SM 20 9223 B	TM	2/6/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	Ammonia by TNT	0.026	0.015	mg/L	HACH	ZEE	2/6/2019

AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	ZEE	2/6/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	2/6/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	Potassium	1.65	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	pH	5.9		su	SM18/4500H+ B	VR	2/5/2019
AB58584	CREEK-WALK RCC-043	CREEK-WALK	2/5/2019	11:15	VR	Temperature in °C	16.1		°C	SM 20 2550 B	VR	2/5/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	E. Coli	3	1	MPN/100 mL	SM 20 9223 B	TM	2/6/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	Ammonia by TNT	0.600	0.015	mg/L	HACH	ZEE	2/6/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	Total Nitrogen	2.30	1	mg/L	TN HACH	ZEE	2/6/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	Total Phosphorus	0.8	0.1	mg/L	EPA 365.1	KAA	2/6/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	Potassium	2.54	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	pH	6.9		su	SM18/4500H+ B	VR	2/5/2019
AB58585	CREEK-WALK RCC-044	CREEK-WALK	2/5/2019	11:35	VR	Temperature in °C	13.4		°C	SM 20 2550 B	VR	2/5/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	E. Coli	6	1	MPN/100 mL	SM 20 9223 B	TM	2/6/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	Ammonia by TNT	0.018	0.015	mg/L	HACH	ZEE	2/6/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	Total Nitrogen	1.10	1	mg/L	TN HACH	ZEE	2/6/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	2/6/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	Potassium	2.25	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	pH	7.0		su	SM18/4500H+ B	VR	2/5/2019
AB58586	CREEK-WALK RCC-045	CREEK-WALK	2/5/2019	11:45	VR	Temperature in °C	11.5		°C	SM 20 2550 B	VR	2/5/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	E. Coli	1990	1	MPN/100 mL	SM 20 9223 B	FB	2/6/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	Ammonia by TNT	0.042	0.015	mg/L	HACH	ZEE	2/7/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	Total Nitrogen	2.40	1	mg/L	TN HACH	ZEE	2/7/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	2/8/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	Potassium	1.94	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	pH	7.0		su	SM18/4500H+ B	VR	2/6/2019
AB58649	CREEK-WALK RCC-046	CREEK-WALK	2/6/2019	10:00	VR	Temperature in °C	13.8		°C	SM 20 2550 B	VR	2/6/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	E. Coli	122	1	MPN/100 mL	SM 20 9223 B	FB	2/6/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	Ammonia by TNT	0.043	0.015	mg/L	HACH	ZEE	2/7/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	Total Nitrogen	4.46	1	mg/L	TN HACH	ZEE	2/7/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	2/8/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	Potassium	1.99	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	pH	6.9		su	SM18/4500H+ B	VR	2/6/2019
AB58650	CREEK-WALK RCC-047	CREEK-WALK	2/6/2019	10:10	VR	Temperature in °C	12.6		°C	SM 20 2550 B	VR	2/6/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	E. Coli	2	1	MPN/100 mL	SM 20 9223 B	FB	2/6/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	Ammonia by TNT	0.023	0.015	mg/L	HACH	ZEE	2/7/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	Total Nitrogen	2.83	1	mg/L	TN HACH	ZEE	2/7/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	2/8/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	Potassium	1.99	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	pH	7.0		su	SM18/4500H+ B	VR	2/6/2019
AB58651	CREEK-WALK RCC-3262	CREEK-WALK	2/6/2019	11:40	VR	Temperature in °C	14.1		°C	SM 20 2550 B	VR	2/6/2019
AB58652	SPECIAL SAMPLE CEDAR/FH	SPECIAL_SAMPLE	2/6/2019	07:30	VR	E. Coli	54	1	MPN/100 mL	SM 20 9223 B	FB	2/6/2019

AB58652	SPECIAL SAMPLE CEDAR/FH	SPECIAL_SAMPLE	2/6/2019	07:30	VR	Ammonia by TNT	0.108	0.015	mg/L	HACH	ZEE	2/7/2019
AB58652	SPECIAL SAMPLE CEDAR/FH	SPECIAL_SAMPLE	2/6/2019	07:30	VR	Total Nitrogen	3.24	1	mg/L	TN HACH	FB	2/8/2019
AB58652	SPECIAL SAMPLE CEDAR/FH	SPECIAL_SAMPLE	2/6/2019	07:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/8/2019
AB58652	SPECIAL SAMPLE CEDAR/FH	SPECIAL_SAMPLE	2/6/2019	07:30	VR	Potassium	1.44	0.250	mg/L	EPA 200.7	AWS	2/11/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	E. Coli	2	1	MPN/100 mL	SM 20 9223 B	FB	2/16/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	Ammonia by TNT	0.032	0.015	mg/L	HACH	MEM	2/19/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	Total Nitrogen	0.779	1	mg/L	TN HACH	MEM	2/19/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/20/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	Potassium	7.69	0.250	mg/L	EPA 200.7	AWS	2/22/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	pH	6.4		su	SM18/4500H+ B	VR	2/15/2019
AB59115	CREEK-WALK RCC-3270	CREEK-WALK	2/15/2019	08:55	VR	Temperature in °C	10.4		°C	SM 20 2550 B	VR	2/15/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	E. Coli	118	1	MPN/100 mL	SM 20 9223 B	FB	2/16/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	Ammonia by TNT	0.049	0.015	mg/L	HACH	MEM	2/19/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	Total Nitrogen	1.19	1	mg/L	TN HACH	MEM	2/19/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/20/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	Potassium	2.30	0.250	mg/L	EPA 200.7	AWS	2/22/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	pH	7.3		su	SM18/4500H+ B	VR	2/15/2019
AB59116	CREEK-WALK RCC-6646	CREEK-WALK	2/15/2019	09:15	VR	Temperature in °C	8.6		°C	SM 20 2550 B	VR	2/15/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	E. Coli	127	1	MPN/100 mL	SM 20 9223 B	FB	2/16/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	Ammonia by TNT	0.171	0.015	mg/L	HACH	MEM	2/19/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	Total Nitrogen	0.912	1	mg/L	TN HACH	MEM	2/19/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/20/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	Potassium	3.34	0.250	mg/L	EPA 200.7	AWS	2/22/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	pH	7.0		su	SM18/4500H+ B	VR	2/15/2019
AB59117	CREEK-WALK RCC-6651	CREEK-WALK	2/15/2019	11:15	VR	Temperature in °C	12.4		°C	SM 20 2550 B	VR	2/15/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	FB	2/16/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	Ammonia by TNT	0.102	0.015	mg/L	HACH	MEM	2/19/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	Total Nitrogen	3.78	1	mg/L	TN HACH	MEM	2/19/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KA	2/20/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	Potassium	2.10	0.250	mg/L	EPA 200.7	AWS	2/22/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	pH	7.1		su	SM18/4500H+ B	VR	2/15/2019
AB59118	CREEK-WALK RCC-A05	CREEK-WALK	2/15/2019	10:50	VR	Temperature in °C	11.2		°C	SM 20 2550 B	VR	2/15/2019
AB59284	COMMERCE ROAD RUNOFF	SPECIAL_SAMPLE	2/20/2019	10:35	VR	Sodium	82.5	0.250	mg/L	EPA 200.7	AWS	2/25/2019
AB59284	COMMERCE ROAD RUNOFF	SPECIAL_SAMPLE	2/20/2019	10:35	VR	Magnesium	5.31	0.0500	mg/L	EPA 200.7	AWS	2/25/2019
AB59284	COMMERCE ROAD RUNOFF	SPECIAL_SAMPLE	2/20/2019	10:35	VR	Calcium	16.6	0.0500	mg/L	EPA 200.7	AWS	2/25/2019
AB59284	COMMERCE ROAD RUNOFF	SPECIAL_SAMPLE	2/20/2019	10:35	VR	Potassium	5.43	0.250	mg/L	EPA 200.7	AWS	2/25/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	E. Coli	52	1	MPN/100 mL	SM 20 9223 B	KA	2/27/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	Ammonia by TNT	0.057	0.015	mg/L	HACH	MEM	2/27/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	Total Nitrogen	1.53	1	mg/L	TN HACH	MEM	2/27/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	2/27/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	Potassium	4.98	0.250	mg/L	EPA 200.7	AWS	2/28/2019

AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	pH	8.5		su	SM18/4500H+ B	VR	2/26/2019
AB59597	CREEK-WALK RCC-3188	CREEK-WALK	2/26/2019	10:00	VR	Temperature in °C	11.2		°C	SM 20 2550 B	VR	2/26/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	E. Coli	74	1	MPN/100 mL	SM 20 9223 B	KA	2/28/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	MEM	2/27/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	Ammonia by TNT	0.214	0.015	mg/L	HACH	MEM	2/27/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	3/1/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	Potassium	2.29	0.250	mg/L	EPA 200.7	AWS	9/4/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	pH	7.2		su	SM18/4500H+ B	VR	2/28/2019
AB59640	CREEK-WALK RCC-3167	CREEK-WALK	2/27/2019	12:45	VR	Temperature in °C	9.0		°C	SM 20 2550 B	VR	2/28/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	E. Coli	50	1	MPN/100 mL	SM 20 9223 B	KA	2/28/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	MEM	2/27/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	Ammonia by TNT	0.076	0.015	mg/L	HACH	MEM	2/27/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	3/1/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	Potassium	2.04	0.250	mg/L	EPA 200.7	AWS	9/4/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	pH	7.0		su	SM18/4500H+ B	VR	2/28/2019
AB59641	CREEK-WALK RCC-6703	CREEK-WALK	2/27/2019	13:05	VR	Temperature in °C	8.9		°C	SM 20 2550 B	VR	2/28/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	E. Coli	2	1	MPN/100 mL	SM 20 9223 B	KA	2/28/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	MEM	2/27/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	Ammonia by TNT	0.050	0.015	mg/L	HACH	MEM	2/27/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	Potassium	1.75	0.250	mg/L	EPA 200.7	AWS	9/4/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	3/1/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	pH	8.1		su	SM18/4500H+ B	VR	2/28/2019
AB59642	CREEK-WALK RCC-9624	CREEK-WALK	2/27/2019	11:15	VR	Temperature in °C	10.6		°C	SM 20 2550 B	VR	2/28/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	E. Coli	49	1	MPN/100 mL	SM 20 9223 B	KA	2/28/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	Total Nitrogen	1.1	1	mg/L	TN HACH	MEM	2/27/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	Ammonia by TNT	0.192	0.015	mg/L	HACH	MEM	2/27/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	Total Phosphorus	0.4	0.1	mg/L	EPA 365.1	FB	3/1/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	Potassium	4.26	0.250	mg/L	EPA 200.7	AWS	9/4/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	pH	7.8		su	SM18/4500H+ B	VR	2/28/2019
AB59643	CREEK-WALK RCC-9646	CREEK-WALK	2/27/2019	11:45	VR	Temperature in °C	10.4		°C	SM 20 2550 B	VR	2/28/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	E. Coli	22	1	MPN/100 mL	SM 20 9223 B	KA	2/28/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	MEM	2/27/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	Ammonia by TNT	0.053	0.015	mg/L	HACH	MEM	2/27/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	3/1/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	Potassium	2.41	0.250	mg/L	EPA 200.7	AWS	9/4/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	pH	7.9		su	SM18/4500H+ B	VR	2/28/2019
AB59644	CREEK-WALK RCC-6680	CREEK-WALK	2/27/2019	10:15	VR	Temperature in °C	10.7		°C	SM 20 2550 B	VR	2/28/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	E. Coli	2	1	MPN/100 mL	SM 20 9223 B	KA	3/1/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	Total Nitrogen	4.99	1	mg/L	TN HACH	MEM	3/1/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	MEM	3/1/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	3/1/2019

AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	Potassium	3.00	0.250	mg/L	EPA 200.7	AWS	3/8/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	pH	7.8		su	SM18/4500H+ B	VR	2/28/2019
AB59692	CREEK-WALK-JR-1923	CREEK-WALK	2/28/2019	10:10	VR	Temperature in °C	12.2		°C	SM 20 2550 B	VR	2/28/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		E. Coli	3	1	MPN/100 mL	SM 20 9223 B	TM	3/6/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		Ammonia by TNT	0.093	0.015	mg/L	HACH	CAA	3/7/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		Total Nitrogen	2.96	1	mg/L	TN HACH	CAA	3/7/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		Potassium	3.53	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		pH	9.8		su	SM18/4500H+ B	VR	3/6/2019
AB59915	CREEK-WALK JR-3108	CREEK-WALK	3/6/2019	10:20		Temperature in °C	7.5		°C	SM 20 2550 B	VR	3/6/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	Ammonia by TNT	1.82	0.015	mg/L	HACH	FB	3/8/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	Total Nitrogen	5.19	1	mg/L	TN HACH	FB	3/8/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	Potassium	6.13	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	pH	7.1		su	SM18/4500H+ B	VR	3/8/2019
AB59966	CREEK-WALK AB-045	CREEK-WALK	3/7/2019	10:10	VR	Temperature in °C	12.1		°C	SM 20 2550 B	VR	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	E. Coli	12	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	Ammonia by TNT	0.032	0.015	mg/L	HACH	FB	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	Total Nitrogen	1.82	1	mg/L	TN HACH	FB	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	pH	7.7		su	SM18/4500H+ B	VR	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	Temperature in °C	6.9		°C	SM 20 2550 B	VR	3/8/2019
AB59967	CREEK-WALK BRC-6821	CREEK-WALK	3/7/2019	09:45	VR	Potassium	2.77	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	E. Coli	2	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	Ammonia by TNT	0.102	0.015	mg/L	HACH	FB	3/8/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	3/8/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	pH	7.5		su	SM18/4500H+ B	VR	3/8/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	Temperature in °C	7.3		°C	SM 20 2550 B	VR	3/8/2019
AB59968	CREEK-WALK BRC-6823	CREEK-WALK	3/7/2019	09:20	VR	Potassium	2.57	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	E. Coli	411	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	Ammonia by TNT	2.01	0.015	mg/L	HACH	FB	3/8/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	Total Nitrogen	7.44	1	mg/L	TN HACH	FB	3/8/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	pH	7.3		su	SM18/4500H+ B	VR	3/8/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	Temperature in °C	10.1		°C	SM 20 2550 B	VR	3/8/2019
AB59969	CREEK-WALK BRC-013	CREEK-WALK	3/7/2019	08:55	VR	Potassium	3.38	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	E. Coli	11	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	Ammonia by TNT	0.054	0.015	mg/L	HACH	FB	3/8/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	FB	3/8/2019

AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	pH	7.6		su	SM18/4500H+ B	VR	3/8/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	Temperature in °C	7.0		°C	SM 20 2550 B	VR	3/8/2019
AB59970	CREEK-WALK GSC-002	CREEK-WALK	3/7/2019	11:00	VR	Potassium	1.90	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	E. Coli	1414	1	MPN/100 mL	SM 20 9223 B	TOM	3/7/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	Ammonia by TNT	0.031	0.015	mg/L	HACH	FB	3/8/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	Total Nitrogen	3.09	1	mg/L	TN HACH	FB	3/8/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	Potassium	4.43	0.250	mg/L	EPA 200.7	AWS	3/11/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	3/8/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	pH	7.2		su	SM18/4500H+ B	VR	3/8/2019
AB59971	CREEK-WALK HSC-015	CREEK-WALK	3/7/2019	12:00	VR	Temperature in °C	11.5		°C	SM 20 2550 B	VR	3/8/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	E. Coli	1300	1	MPN/100 mL	SM 20 9223 B	KA	3/8/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	Potassium	2.47	0.250	mg/L	EPA 200.7	AWS	3/13/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	Total Nitrogen	2.50	1	mg/L	TN HACH	KAA	3/11/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	Ammonia by TNT	0.334	0.015	mg/L	HACH	KAA	3/11/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	Total Phosphorus	0.1	0.1	mg/L	EPA 365.1	MEM	3/11/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	pH	7.2		su	SM18/4500H+ B	VR	3/8/2019
AB60014	CREEK-WALK HSC-018B	CREEK-WALK	3/8/2019	10:40	VR	Temperature in °C	9.9		°C	SM 20 2550 B	VR	3/8/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	E. Coli	1	1	MPN/100 mL	SM 20 9223 B	TM	3/13/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	Ammonia by TNT	0.024	0.015	mg/L	HACH	KAA	3/14/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	KAA	3/14/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	Total Phosphorus	0.1	0.1	mg/L	EPA 365.1	KAA	3/15/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	Potassium	5.18	0.250	mg/L	EPA 200.7	AWS	3/18/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	pH	7.4		su	SM18/4500H+ B	VR	3/13/2019
AB60210	CREEK-WALK-GRC-023	CREEK-WALK	3/13/2019	09:40	VR	Temperature in °C	5.8		°C	SM 20 2550 B	VR	3/13/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	E. Coli	12	1	MPN/100 mL	SM 20 9223 B	TM	3/13/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	Ammonia by TNT	0.031	0.015	mg/L	HACH	KAA	3/14/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	KAA	3/14/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	Potassium	3.38	0.250	mg/L	EPA 200.7	AWS	3/18/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	3/15/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	pH	7.6		su	SM18/4500H+ B	VR	3/13/2019
AB60211	CREEK-WALK-GRC-024	CREEK-WALK	3/13/2019	10:10	VR	Temperature in °C	5.9		°C	SM 20 2550 B	VR	3/13/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	E. Coli	1730	1	MPN/100 mL	SM 20 9223 B	TM	3/13/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	Ammonia by TNT	0.048	0.015	mg/L	HACH	KAA	3/14/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	Total Nitrogen	<1.00	1	mg/L	TN HACH	KAA	3/14/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	3/15/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	Potassium	2.80	0.250	mg/L	EPA 200.7	AWS	3/18/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	pH	7.4		su	SM18/4500H+ B	VR	3/13/2019
AB60212	CREEK-WALK-GRC-0977	CREEK-WALK	3/13/2019	10:50	VR	Temperature in °C	10.4		°C	SM 20 2550 B	VR	3/13/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	E. Coli	29	1	MPN/100 mL	SM 20 9223 B	TM	3/13/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	Ammonia by TNT	0.081	0.015	mg/L	HACH	KAA	3/14/2019

AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	Total Nitrogen	1.46	1	mg/L	TN HACH	CAA	3/14/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	3/15/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	Potassium	2.04	0.250	mg/L	EPA 200.7	AWS	3/18/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	pH	8.4		su	SM18/4500H+ B	VR	3/13/2019
AB60213	CREEK-WALK-GRC-2962	CREEK-WALK	3/13/2019	09:30	VR	Temperature in °C	5.3		°C	SM 20 2550 B	VR	3/13/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	E. Coli	186	1	MPN/100 mL	SM 20 9223 B	TM	3/14/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	Potassium	5.60	0.250	mg/L	EPA 200.7	AWS	3/18/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	Total Nitrogen	2.71	1	mg/L	TN HACH	FB	3/15/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	Ammonia by TNT	0.021	0.015	mg/L	HACH	FB	3/15/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	3/15/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	pH	6.9		su	SM18/4500H+ B	VR	3/14/2019
AB60276	CREEK-WALK-RCC-044	CREEK-WALK	3/14/2019	11:15	VR	Temperature in °C	16.6		°C	SM 20 2550 B	VR	3/14/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	E. Coli	18	1	MPN/100 mL	SM 20 9223 B	MEM	3/19/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	Ammonia by TNT	0.053	0.015	mg/L	HACH	AR	3/20/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	Total Nitrogen	2.65	1	mg/L	TN HACH	AR	3/20/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/22/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	pH	7.2		su	SM18/4500H+ B	VR	3/19/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	Temperature in °C	12.8		°C	SM 20 2550 B	VR	3/19/2019
AB60471	AB045-HS	SPECIAL_SAMPLE	3/19/2019	10:00	VR	Potassium	1.56	0.250	mg/L	EPA 200.7	AWS	3/27/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	E. Coli	11	1	MPN/100 mL	SM 20 9223 B	MEM	3/19/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	Ammonia by TNT	0.018	0.015	mg/L	HACH	AR	3/20/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	Potassium	0.88	0.250	mg/L	EPA 200.7	AWS	3/27/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	Total Nitrogen	1.49	1	mg/L	TN HACH	AR	3/20/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/20/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	pH	7.1		su	SM18/4500H+ B	VR	3/19/2019
AB60472	UTRCC-WHES	SPECIAL_SAMPLE	3/19/2019	09:40	VR	Temperature in °C	13.0		°C	SM 20 2550 B	VR	3/19/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	E. Coli	107	1	MPN/100 mL	SM 20 9223 B	MEM	3/25/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	Ammonia by TNT	0.031	0.015	mg/L	HACH	AR	3/25/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	Total Nitrogen	2.51	1	mg/L	TN HACH	AR	3/25/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/27/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	pH	7.1		su	SM18/4500H+ B	VR	3/25/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	Temperature in °C	14.4		°C	SM 20 2550 B	VR	3/25/2019
AB60725	VT-RCC2	SPECIAL_SAMPLE	3/25/2019	08:40	VR	Potassium	1.69	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	E. Coli	8	1	MPN/100 mL	SM 20 9223 B	MEM	3/25/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	Ammonia by TNT	0.109	0.015	mg/L	HACH	AR	3/25/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	Total Nitrogen	2.10	1	mg/L	TN HACH	AR	3/25/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	Total Phosphorus	0.1	0.1	mg/L	EPA 365.1	TM	3/27/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	Potassium	3.05	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	pH	6.6		su	SM18/4500H+ B	VR	3/25/2019
AB60726	VT-RCC2A	SPECIAL_SAMPLE	3/25/2019	09:15	VR	Temperature in °C	15.3		°C	SM 20 2550 B	VR	3/25/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	E. Coli	44	1	MPN/100 mL	SM 20 9223 B	MEM	3/25/2019

AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	Ammonia by TNT	0.024	0.015	mg/L	HACH	AR	3/25/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	Total Nitrogen	2.57	1	mg/L	TN HACH	AR	3/25/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	Potassium	1.07	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/27/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	pH	6.9		su	SM18/4500H+ B	VR	3/25/2019
AB60727	VT-RCC2B	SPECIAL_SAMPLE	3/25/2019	09:05	VR	Temperature in °C	14.3		°C	SM 20 2550 B	VR	3/25/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	MEM	3/28/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	Ammonia by TNT	0.049	0.015	mg/L	HACH	AR	3/29/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	Total Nitrogen	1.17	1	mg/L	TN HACH	AR	3/29/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/29/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	Potassium	1.68	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	pH	7.7		su	SM18/4500H+ B	VR	3/28/2019
AB60857	FC-3524	CREEK-WALK	3/28/2019	10:05	VR	Temperature in °C	13.2		°C	SM 20 2550 B	VR	3/28/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	E. Coli	1	1	MPN/100 mL	SM 20 9223 B	MEM	3/28/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	AR	3/29/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	Total Nitrogen	1.72	1	mg/L	TN HACH	AR	3/29/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/29/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	Potassium	0.99	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	pH	7.0		su	SM18/4500H+ B	VR	3/28/2019
AB60858	FC-6193	CREEK-WALK	3/28/2019	10:35	VR	Temperature in °C	12.4		°C	SM 20 2550 B	VR	3/28/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	E. Coli	7	1	MPN/100 mL	SM 20 9223 B	MEM	3/28/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	AR	3/29/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/29/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	Total Nitrogen	<1.0	1	mg/L	TN HACH	AR	3/29/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	Potassium	1.02	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	pH	7.8		su	SM18/4500H+ B	VR	3/28/2019
AB60859	FC-6196	CREEK-WALK	3/28/2019	10:35	VR	Temperature in °C	10.6		°C	SM 20 2550 B	VR	3/28/2019
AB60860	BRC013-COLUMBIA	SPECIAL_SAMPLE	3/28/2019	09:00	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	MEM	3/28/2019
AB60860	BRC013-COLUMBIA	SPECIAL_SAMPLE	3/28/2019	09:00	VR	Ammonia by TNT	2.44	0.015	mg/L	HACH	AR	3/29/2019
AB60860	BRC013-COLUMBIA	SPECIAL_SAMPLE	3/28/2019	09:00	VR	Total Nitrogen	7.01	1	mg/L	TN HACH	AR	3/29/2019
AB60860	BRC013-COLUMBIA	SPECIAL_SAMPLE	3/28/2019	09:00	VR	Total Phosphorus	0.8	0.1	mg/L	EPA 365.1	TM	3/29/2019
AB60860	BRC013-COLUMBIA	SPECIAL_SAMPLE	3/28/2019	09:00	VR	Potassium	5.17	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB60861	AB045-BLAKE	SPECIAL_SAMPLE	3/28/2019	09:25	VR	E. Coli	8	1	MPN/100 mL	SM 20 9223 B	MEM	3/28/2019
AB60861	AB045-BLAKE	SPECIAL_SAMPLE	3/28/2019	09:25	VR	Ammonia by TNT	0.028	0.015	mg/L	HACH	AR	3/29/2019
AB60861	AB045-BLAKE	SPECIAL_SAMPLE	3/28/2019	09:25	VR	Total Nitrogen	3.38	1	mg/L	TN HACH	AR	3/29/2019
AB60861	AB045-BLAKE	SPECIAL_SAMPLE	3/28/2019	09:25	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	TM	3/29/2019
AB60861	AB045-BLAKE	SPECIAL_SAMPLE	3/28/2019	09:25	VR	Potassium	1.75	0.250	mg/L	EPA 200.7	AWS	4/1/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	E. Coli	39	1	MPN/100 mL	SM 20 9223 B	TM	4/11/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	Temperature in °C	18.6		°C	SM 20 2550 B	VR	4/11/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	Potassium	1.63	0.250	mg/L	EPA 200.7	AWS	4/26/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	Ammonia by TNT	0.053	0.015	mg/L	HACH	ZEE	4/11/2019

AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	Total Nitrogen	1.47	1	mg/L	TN HACH	ZEE	4/11/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	4/12/2019
AB61451	CREEK-WALK FC-0964	CREEK-WALK	4/11/2019	11:30	VR	pH	7.2		su	SM18/4500H+ B	VR	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	E. Coli	1	1	MPN/100 mL	SM 20 9223 B	TM	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	pH	7.1		su	SM18/4500H+ B	VR	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	Temperature in °C	17.1		°C	SM 20 2550 B	VR	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	Potassium	1.98	0.250	mg/L	EPA 200.7	AWS	4/26/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	Ammonia by TNT	0.021	0.015	mg/L	HACH	ZEE	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	Total Nitrogen	1.45	1	mg/L	TN HACH	ZEE	4/11/2019
AB61452	CREEK-WALK FC-1272	CREEK-WALK	4/11/2019	10:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	4/12/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	E. Coli	66	1	MPN/100 mL	SM 20 9223 B	TM	4/11/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	pH	7.4		su	SM18/4500H+ B	VR	4/11/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Temperature in °C	13.1		°C	SM 20 2550 B	VR	4/11/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Total Nitrogen	2.81	1	mg/L	TN HACH	ZEE	4/11/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Ammonia by TNT	0.026	0.015	mg/L	HACH	ZEE	4/11/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	4/12/2019
AB61453	RCC044-Distribution	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Potassium	5.54	0.250	mg/L	EPA 200.7	AWS	4/26/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	E. Coli	20	1	MPN/100 mL	SM 20 9223 B	TM	4/11/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	Potassium	4.85	0.250	mg/L	EPA 200.7	AWS	4/26/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	Ammonia by TNT	1.51	0.015	mg/L	HACH	ZEE	4/11/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	pH	6.9		su	SM18/4500H+ B	VR	4/11/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	4/12/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	Temperature in °C	16.4		°C	SM 20 2550 B	VR	4/11/2019
AB61454	AB-045	SPECIAL_SAMPLE	4/11/2019	10:05	VR	Total Nitrogen	5.03	1	mg/L	TN HACH	ZEE	4/11/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	E. Coli	517	1	MPN/100 mL	SM 20 9223 B	TM	4/11/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Temperature in °C	12.5		°C	SM 20 2550 B	VR	4/11/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Total Nitrogen	5.28	1	mg/L	TN HACH	ZEE	4/11/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	KAA	4/12/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	pH	6.9		su	SM18/4500H+ B	VR	4/11/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Potassium	5.12	0.250	mg/L	EPA 200.7	AWS	4/26/2019
AB61455	AB-045-29th	SPECIAL_SAMPLE	4/11/2019	08:30	VR	Ammonia by TNT	1.89	0.015	mg/L	HACH	ZEE	4/11/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	E. Coli	13	1	MPN/100 mL	SM 20 9223 B	KAA	4/24/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	Ammonia by TNT	0.074	0.015	mg/L	HACH	TM	4/24/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	Total Nitrogen	0.897	1	mg/L	TN HACH	TM	4/24/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	Potassium	3.19	0.250	mg/L	EPA 200.7	AWS	4/29/1990
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB\AR	4/24/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	pH	8.4		su	SM18/4500H+ B	VR	4/23/2019
AB61915	CREEK-WALK - FC-0186	CREEK-WALK	4/23/2019	09:35	VR	Temperature in °C	18.4		°C	SM 20 2550 B	VR	4/23/2019
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	E. Coli	19	1	MPN/100 mL	SM 20 9223 B	KAA	4/24/2019
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	Ammonia by TNT	0.018	0.015	mg/L	HACH	TM	4/24/2019
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	Total Nitrogen	3.50	1	mg/L	TN HACH	TM	4/24/2019

AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	Potassium	1.24	0.250	mg/L	EPA 200.7	AWS	4/29/1990
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB\AR	4/24/2019
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	pH	7.6		su	SM18/4500H+ B	VR	4/23/2019
AB61916	CREEK-WALK - FC-6372	CREEK-WALK	4/23/2019	11:15	VR	Temperature in °C	17.3		°C	SM 20 2550 B	VR	4/23/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	E. Coli	12	1	MPN/100 mL	SM 20 9223 B	KAA	4/24/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	Ammonia by TNT	0.093	0.015	mg/L	HACH	TM	4/24/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	Total Nitrogen	2.70	1	mg/L	TN HACH	TM	4/24/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	Potassium	2.55	0.250	mg/L	EPA 200.7	AWS	4/29/1990
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB\AR	4/24/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	pH	7.3		su	SM18/4500H+ B	VR	4/23/2019
AB61917	CREEK-WALK - FC-0971	CREEK-WALK	4/23/2019	11:50	VR	Temperature in °C	17.8		°C	SM 20 2550 B	VR	4/23/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	FB	5/1/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	Ammonia by TNT	0.920	0.015	mg/L	HACH	FB	4/30/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	Total Nitrogen	5.76	1	mg/L	TN HACH	FB	5/2/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/AR	5/1/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	Potassium	4.51	0.250	mg/L	EPA 200.7	AWS	5/6/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	pH	7.1		su	SM18/4500H+ B	VR	4/30/2019
AB62154	AB045-2901 MAURY	SPECIAL_SAMPLE	4/30/2019	09:50	VR	Temperature in °C	22.1		°C	SM 20 2550 B	VR	4/30/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	E. Coli	23	1	MPN/100 mL	SM 20 9223 B	FB	5/1/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	Ammonia by TNT	1.83	0.015	mg/L	HACH	FB	4/30/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	Total Nitrogen	6.46	1	mg/L	TN HACH	FB	5/2/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB/AR	5/1/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	Potassium	2.44	0.250	mg/L	EPA 200.7	AWS	5/6/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	Temperature in °C	19.8		°C	SM 20 2550 B	VR	4/30/2019
AB62155	AB045-MAURY TRANS	SPECIAL_SAMPLE	4/30/2019	10:40	VR	pH	7.7		su	SM18/4500H+ B	VR	4/30/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	E. Coli	130	1	MPN/100 mL	SM 20 9223 B	FB	5/1/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	Ammonia by TNT	1.37	0.015	mg/L	HACH	TM	5/2/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	Total Nitrogen	5.27	1	mg/L	TN HACH	FB	5/2/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR/FB	5/6/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	Potassium	4.36	0.250	mg/L	EPA 200.7	AWS	5/8/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	pH	7.0		su	SM18/4500H+ B	VR	5/1/2019
AB62216	AB-045	SPECIAL_SAMPLE	5/1/2019	10:30	VR	Temperature in °C	19.1		°C	SM 20 2550 B	VR	5/1/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	E. Coli	980	1	MPN/100 mL	SM 20 9223 B	FB	5/1/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	Ammonia by TNT	0.934	0.015	mg/L	HACH	TM	5/2/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	Total Nitrogen	4.26	1	mg/L	TN HACH	FB	5/2/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR/FB	5/6/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	Potassium	2.52	0.250	mg/L	EPA 200.7	AWS	5/8/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	pH	7.0		su	SM18/4500H+ B	VR	5/1/2019
AB62217	AB-MAURY TRANS	SPECIAL_SAMPLE	5/1/2019	09:50	VR	Temperature in °C	20.3		°C	SM 20 2550 B	VR	5/1/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	FB	5/1/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	Ammonia by TNT	1.93	0.015	mg/L	HACH	TM	5/2/2019

AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	Total Nitrogen	5.79	1	mg/L	TN HACH	FB	5/2/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR/FB	5/6/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	Potassium	4.35	0.250	mg/L	EPA 200.7	AWS	5/8/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	pH	8.4		su	SM18/4500H+ B	VR	5/1/2019
AB62218	AB-2901 MAURY	SPECIAL_SAMPLE	5/1/2019	09:40	VR	Temperature in °C	18.8		°C	SM 20 2550 B	VR	5/1/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	E. Coli	20	1	MPN/100 mL	SM 20 9223 B	KA	5/3/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	Ammonia by TNT	11.1	0.015	mg/L	HACH	TM	5/3/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	Total Nitrogen	12.5	1	mg/L	TN HACH	TM	5/3/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	Total Phosphorus	1.4	0.1	mg/L	EPA 365.1	FB/AR	5/8/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	Potassium	7.73	0.250	mg/L	EPA 200.7	AWS	5/8/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	pH	6.7		su	SM18/4500H+ B	VR	5/2/2019
AB62261	HSC-MONT-LAB	SPECIAL_SAMPLE	5/2/2019	09:50	VR	Temperature in °C	23.7		°C	SM 20 2550 B	VR	5/2/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	FB	5/9/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	Total Nitrogen	2.39	1	mg/L	TN HACH	TM	5/9/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	Ammonia by TNT	0.084	0.015	mg/L	HACH	TM	5/9/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR/ZEE	5/10/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	Potassium	3.05	0.250	mg/L	EPA 200.7	AWS	5/14/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	pH	8.3		su	SM18/4500H+ B	JNM	5/9/2019
AB62605	UTRCC-46REEDY	SPECIAL_SAMPLE	5/9/2019	10:10	VR	Temperature in °C	20.8		°C	SM 20 2550 B	JNM	2/9/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	FB	5/9/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	Total Nitrogen	3.94	1	mg/L	TN HACH	TM	5/9/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	Ammonia by TNT	0.093	0.015	mg/L	HACH	TM	5/9/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	AR/ZEE	5/10/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	Potassium	2.63	0.250	mg/L	EPA 200.7	AWS	5/14/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	pH	9.3		su	SM18/4500H+ B	JNM	2/9/2019
AB62606	HSC-NOBLE	SPECIAL_SAMPLE	5/9/2019	09:00	VR	Temperature in °C	17.9		°C	SM 20 2550 B	JNM	2/9/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	E. Coli	649	1	MPN/100 mL	SM 20 9223 B	TM	5/10/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	Total Nitrogen	1.98	1	mg/L	TN HACH	ZEE	5/10/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	Ammonia by TNT	0.092	0.015	mg/L	HACH	ZEE	5/10/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR/ZEE	5/13/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	Potassium	3.27	0.250	mg/L	EPA 200.7	AWS	6/16/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	pH	8.1		su	SM18/4500H+ B	VR	5/10/2019
AB62663	UTRCC-REEDY46	SPECIAL_SAMPLE	5/10/2019	10:10	VR	Temperature in °C	20.0		°C	SM 20 2550 B	VR	5/10/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	E. Coli	214	1	MPN/100 mL	SM 20 9223 B	TM	5/10/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	Ammonia by TNT	0.043	0.015	mg/L	HACH	ZEE	5/10/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	Total Nitrogen	3.96	1	mg/L	TN HACH	ZEE	5/10/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	AR/ZEE	5/13/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	Potassium	3.26	0.250	mg/L	EPA 200.7	AWS	6/16/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	pH	9.2		su	SM18/4500H+ B	VR	5/10/2019
AB62664	HSC-NOBLE	SPECIAL_SAMPLE	5/10/2019	09:15	VR	Temperature in °C	19.5		°C	SM 20 2550 B	VR	5/10/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	E. Coli	1990	1	MPN/100 mL	SM 20 9223 B	ZEE	5/15/2019

AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	Potassium	4.69	0.250	mg/L	EPA 200.7	AWS	5/20/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	Total Nitrogen	7.01	1	mg/L	TN HACH	KAA	5/16/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	Ammonia by TNT	1.11	0.015	mg/L	HACH	KAA	5/16/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/17/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	pH	6.9		su	SM18/4500H+ B	VR	5/15/2019
AB62866	AB-045	SPECIAL_SAMPLE	5/15/2019	09:15	VR	Temperature in °C	17.5		°C	SM 20 2550 B	VR	5/15/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	E. Coli	8	1	MPN/100 mL	SM 20 9223 B	ZEE	5/15/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	Potassium	1.73	0.250	mg/L	EPA 200.7	AWS	5/20/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	Total Nitrogen	4.34	1	mg/L	TN HACH	KAA	5/16/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	Ammonia by TNT	0.017	0.015	mg/L	HACH	KAA	5/16/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/17/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	pH	6.5		su	SM18/4500H+ B	VR	5/15/2019
AB62867	AB045-31/MAURY	SPECIAL_SAMPLE	5/15/2019	09:40	VR	Temperature in °C	17.0		°C	SM 20 2550 B	VR	5/15/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	E. Coli	10	1	MPN/100 mL	SM 20 9223 B	ZEE	5/15/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	Potassium	1.72	0.250	mg/L	EPA 200.7	AWS	5/20/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	Total Nitrogen	4.42	1	mg/L	TN HACH	KAA	5/16/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	KAA	5/16/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/17/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	pH	6.0		su	SM18/4500H+ B	VR	5/15/2019
AB62868	AB045-BLAKE	SPECIAL_SAMPLE	5/15/2019	10:00	VR	Temperature in °C	19.4		°C	SM 20 2550 B	VR	5/15/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	E. Coli	7	1	MPN/100 mL	SM 20 9223 B	ZEE	5/21/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	Ammonia by TNT	0.020	0.015	mg/L	HACH	MEM	5/21/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	Total Nitrogen	2.86	1	mg/L	TN HACH	MEM	5/21/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/22/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	Potassium	1.24	0.250	mg/L	EPA 200.7	AWS	5/23/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	pH	8.8		su	SM18/4500H+ B	VR	5/21/2019
AB63109	HSC015-MOSS-SIDE	SPECIAL_SAMPLE	5/21/2019	10:30	VR	Temperature in °C	20.0		°C	SM 20 2550 B	VR	5/21/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	TM	5/29/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Total Nitrogen	1.59	1	mg/L	TN HACH	FB	5/30/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Ammonia by TNT	0.229	0.015	mg/L	HACH	FB	5/30/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Total Phosphorus	0.2	0.1	mg/L	EPA 365.1	AR	5/31/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Potassium	3.68	0.250	mg/L	EPA 200.7	AWS	6/3/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	pH	8.0		su	SM18/4500H+ B	VR	5/29/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Temperature in °C	26.8		°C	SM 20 2550 B	VR	5/29/2019
AB63453	GRC 010-CARY	SPECIAL_SAMPLE	5/29/2019	09:15	VR	Total Residual Chlorine - DPD	0.59	0.1	mg/L	SM 20 4500 CL G	VR	5/29/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	E. Coli	548	1	MPN/100 mL	SM 20 9223 B	TM	5/30/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	FB	5/31/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	Total Nitrogen	3.78	1	mg/L	TN HACH	FB	5/31/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/31/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	Potassium	2.37	0.250	mg/L	EPA 200.7	AWS	6/3/2019
AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	pH	7.1		su	SM18/4500H+ B	VR	5/30/2019

AB63508	RCC 3047-COMP	SPECIAL_SAMPLE	5/30/2019	10:30	VR	Temperature in °C	24.1		°C	SM 20 2550 B	VR	5/30/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	E. Coli	345	1	MPN/100 mL	SM 20 9223 B	TM	5/30/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	Ammonia by TNT	0.266	0.015	mg/L	HACH	FB	5/31/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	Total Nitrogen	2.05	1	mg/L	TN HACH	FB	5/31/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	5/31/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	Potassium	7.18	0.250	mg/L	EPA 200.7	AWS	6/3/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	pH	6.8		su	SM18/4500H+ B	VR	5/30/2019
AB63509	GIC-7778	SPECIAL_SAMPLE	5/30/2019	09:50	VR	Temperature in °C	23.1		°C	SM 20 2550 B	VR	5/30/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	E. Coli	276	1	MPN/100 mL	SM 20 9223 B	TM	6/5/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	pH	7.4		su	SM18/4500H+ B	VR	6/5/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	Temperature in °C	22.7		°C	SM 20 2550 B	VR	6/5/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	Potassium	1.53	0.250	mg/L	EPA 200.7	AWS	6/14/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	Total Nitrogen	5.16	1	mg/L	TN HACH	KA/ST	6/6/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	6/7/2019
AB63733	RCC CWP	SPECIAL_SAMPLE	6/5/2019	10:40	VR	Ammonia by TNT	0.485	0.015	mg/L	HACH	KAA/ST	6/6/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	TM	6/5/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	pH	6.6		su	SM18/4500H+ B	VR	6/5/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	Temperature in °C	25.3		°C	SM 20 2550 B	VR	6/5/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	Potassium	1.60	0.250	mg/L	EPA 200.7	AWS	6/14/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	Total Nitrogen	3.62	1	mg/L	TN HACH	KA\ST	6/6/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	MEM	6/7/2019
AB63734	RCC-036	SPECIAL_SAMPLE	6/5/2019	11:25	VR	Ammonia by TNT	0.104	0.015	mg/L	HACH	KAA/ST	6/6/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	E. Coli	<1	1	MPN/100 mL	SM 20 9223 B	AR	6/12/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Potassium	2.31	0.250	mg/L	EPA 200.7	AWS	6/17/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Ammonia by TNT	0.547	0.015	mg/L	HACH	MEM	6/13/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Total Nitrogen	2.24	1	mg/L	TN HACH	MEM	6/13/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Total Phosphorus	0.4	0.1	mg/L	EPA 365.1	FB	6/14/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Total Residual Chlorine - DPD	3.07	0.1	mg/L	SM 20 4500 CL G	VR	6/12/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	pH	7.2		su	SM18/4500H+ B	VR	6/12/2019
AB64016	BROAD/18TH	SPECIAL_SAMPLE	6/12/2019	09:00	VR	Temperature in °C	22.9		°C	SM 20 2550 B	VR	6/12/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	E. Coli	194	1	MPN/100 mL	SM 20 9223 B	AR	6/13/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Ammonia by TNT	0.222	0.015	mg/L	HACH	MEM	6/13/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Total Nitrogen	1.85	1	mg/L	TN HACH	MEM	6/13/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Total Phosphorus	0.4	0.1	mg/L	EPA 365.1	FB	6/14/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Fluoride	0.2	0.2	mg/L	SM 20 4500 F C	TM	6/13/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Total Residual Chlorine - DPD	0.25	0.1	mg/L	SM 20 4500 CL G	VR/CB	6/12/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	pH	7.2		su	SM18/4500H+ B	VR/CB	6/12/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Temperature in °C	25.5		°C	SM 20 2550 B	VR/CB	6/12/2019
AB64069	GRC010-COURTLAND	SPECIAL_SAMPLE	6/12/2019	13:50	VR/CB	Potassium	5.35	0.250	mg/L	EPA 200.7	AWS	6/17/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	E. Coli	1010	1	MPN/100 mL	SM 20 9223 B	AR	6/18/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	Ammonia by TNT	0.015	0.015	mg/L	HACH	ST\FB	6/18/2019

AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	Total Nitrogen	3.10	1	mg/L	TN HACH	FB\ST	6/18/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	6/19/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	pH	9.0		su	SM18/4500H+ B	VR	6/18/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	Temperature in °C	25.1		°C	SM 20 2550 B	VR	6/18/2019
AB64249	REEDY/NUTMEG	SPECIAL_SAMPLE	6/18/2019	09:20	VR	Potassium	1.93	0.250	mg/L	EPA 200.7	AWS	6/20/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	E. Coli	43	1	MPN/100 mL	SM 20 9223 B	AR	6/20/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	FB\ST	6/21/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	Total Nitrogen	4.45	1	mg/L	TN HACH	FB\ST	6/21/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	6/21/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	Potassium	2.95	0.250	mg/L	EPA 200.7	AWS	6/24/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	pH	6.7		su	SM18/4500H+ B	VR	6/20/2019
AB64375	RCC-MELMARK	SPECIAL_SAMPLE	6/20/2019	10:40	VR	Temperature in °C	29.5		°C	SM 20 2550 B	VR	6/20/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	E. Coli	142	1	MPN/100 mL	SM 20 9223 B	AR	6/20/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	FB\ST	6/21/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	Total Nitrogen	2.03	1	mg/L	TN HACH	FB\ST	6/21/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	6/21/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	Potassium	6.14	0.250	mg/L	EPA 200.7	AWS	6/24/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	pH	6.9		su	SM18/4500H+ B	VR	6/20/2019
AB64376	RCC-LABROOK	SPECIAL_SAMPLE	6/20/2019	11:10	VR	Temperature in °C	25.6		°C	SM 20 2550 B	VR	6/20/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	E. Coli	1410	1	MPN/100 mL	SM 20 9223 B	AR	6/21/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	Ammonia by TNT	0.058	0.015	mg/L	HACH	FB	6/21/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	Total Nitrogen	2.72	1	mg/L	TN HACH	FB	6/21/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	6/24/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	Potassium	2.72	0.250	mg/L	EPA 200.7	AWS	7/1/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	pH	7.2		su	SM18/4500H+ B	VR	6/21/2019
AB64442	RCC-DISTRIBUTION	SPECIAL_SAMPLE	6/21/2019	09:40	VR	Temperature in °C	25.0		°C	SM 20 2550 B	VR	6/21/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	E. Coli	11	1	MPN/100 mL	SM 20 9223 B	MEM	6/27/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	Total Nitrogen	3.62	1	mg/L	TN HACH	FB	6/28/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	Ammonia by TNT	0.025	0.015	mg/L	HACH	FB	6/28/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	CAA	6/28/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	Potassium	2.48	0.250	mg/L	EPA 200.7	AWS	7/1/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	pH	6.9		su	SM18/4500H+ B	VR	6/27/2019
AB64733	HSC013-JASPER	SPECIAL_SAMPLE	6/27/2019	09:50	VR	Temperature in °C	22.6		°C	SM 20 2550 B	VR	6/27/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	E. Coli	114	1	MPN/100 mL	SM 20 9223 B	MEM	6/28/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	Ammonia by TNT	0.127	0.015	mg/L	HACH	TM/ST	7/1/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	Total Nitrogen	1.43	1	mg/L	TN HACH	TM/ST	7/1/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	7/1/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	Potassium	2.69	0.250	mg/L	EPA 200.7	AWS	7/5/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	pH	6.6		su	SM18/4500H+ B	VR	6/28/2019
AB64781	BRC-0888	SPECIAL_SAMPLE	6/28/2019	10:45	VR	Temperature in °C	25.9		°C	SM 20 2550 B	VR	6/28/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	E. Coli	23	1	MPN/100 mL	SM 20 9223 B	MEM	6/28/2019

AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	Ammonia by TNT	<0.015	0.015	mg/L	HACH	TM/ST	7/1/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	Total Nitrogen	3.63	1	mg/L	TN HACH	TM/ST	7/1/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	AR	7/1/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	Potassium	2.77	0.250	mg/L	EPA 200.7	AWS	7/5/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	pH	8.3		su	SM18/4500H+ B	VR	6/28/2019
AB64782	AMD-3021	SPECIAL_SAMPLE	6/28/2019	10:15	VR	Temperature in °C	25.6		°C	SM 20 2550 B	VR	6/28/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	E. Coli	34	1	MPN/100 mL	SM 20 9223 B	TM	7/3/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	Potassium	1.85	0.250	mg/L	EPA 200.7	AWS	7/11/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	Ammonia by TNT	0.007	0.015	mg/L	HACH	KA/ST	7/8/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	Total Nitrogen	4.22	1	mg/L	TN HACH	KA/ST	7/8/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	Total Phosphorus	<0.1	0.1	mg/L	EPA 365.1	FB	7/8/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	pH	5.6		su	SM18/4500H+ B	VR	7/3/2019
AB64991	BRC-1129	SPECIAL_SAMPLE	7/3/2019	09:45	VR	Temperature in °C	20.9		°C	SM 20 2550 B	VR	7/3/2019
AB65307	HAWTHORNE 001	SPECIAL_SAMPLE	7/10/2019	14:35	VR	E. Coli	>2420	1	MPN/100 mL	SM 20 9223 B	TM	7/11/2019
AB65307	HAWTHORNE 001	SPECIAL_SAMPLE	7/10/2019	14:35	VR	Total Nitrogen	3.86	1	mg/L	TN HACH	FB/ST	7/11/2019
AB65307	HAWTHORNE 001	SPECIAL_SAMPLE	7/10/2019	14:35	VR	Ammonia by TNT	1.15	0.015	mg/L	HACH	FB/ST	7/11/2019
AB65307	HAWTHORNE 001	SPECIAL_SAMPLE	7/10/2019	14:35	VR	Total Phosphorus	0.3	0.1	mg/L	EPA 365.1	FB	7/12/2019
AB65307	HAWTHORNE 001	SPECIAL_SAMPLE	7/10/2019	14:35	VR	Potassium	3.38	0.250	mg/L	EPA 200.7	AWS	7/22/2019

Appendix E: Illicit Discharge Records

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
010819 6400 Erhart Diesel Complaint IDDE	010819	6400 Erhart Road	On 01/08/2019, IDDEP received an internal report of free petroleum / diesel in an earthen MS4 drain way near a residential property at 6400 Erhart Road. Upon arrival responding IDDEP were informed that the product had been removed and disposed of. However, IDDEP did note a continuing sheen from banks along the drain way as water flowed through it. IDDEP and DPU Stormwater crews were able to contain the sheen using earthen berms and absorbent material. On 01/09/2019, DPU Stormwater crews attempted to remove additional contaminated soil and organic debris but observed that the sheen persisted even after the removal of these materials. Containment was left in place and the VDEQ was notified. VDEQ inspection of the property revealed a previously unidentified UST. On 01/10/2019, additional soils were removed and the drain way was lined with clay, reformed with soil and stabilized.	VDEQ Tank Program that the UST qualifies for removal using grant funding and will be removed from the property.	01/15/2019 - Clay lining and redefined drain way appear clear. Since no sheen was observed, the remainder of the absorbent material was removed. A calendar reminder to observe UST removal area is set for 03/15/2019. Photos from this observation will be included in the digital file folder.	1/15/2019
010719 Andros Citizen Complaint IDDE	010719	901 Andros Lane	IDDEP received a forwarded citizen complaint of a possible petroleum sheen in a drainage ditch in front of 901 Andros Lane. IDDEP determined the sheen to a naturally occurring bacterial sheen.	N/A	Follow-up observation not required.	
013119 3911 Cary Street IDDE	013119	3911 Cary Street	A suspicious pipe discharging water to a City right of way was reported by DPW on 01/25/2019. COR IDDEP investigated 3911 Cary Street on 01/30/2019. It was determined that the pipe was associated with an automated basement sump pump system. The discharge from the pipe was observed to be clear and odorless. Samples were collected.	This discharge is considered an allowable non-stormwater discharge	Follow-up observation not required.	

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
010919 JB-3332 IDDE	010919	Jordon's Branch / STM00003332	On January 9, while performing a routine outfall inspection, COR IDDEP observed what appeared to be accumulated cooking grease and a significant (blue) discoloration in Jordon's Branch. Samples were collected and a request for inspection of the MS4 upstream of the outfall was forwarded to DPU collections. DPU collections personnel worked for several hours on the evening of January 9th to locate a source. Ultimately, no source was found. On January 10, COR IDDEP performed follow-up sampling of the outfall drainage area. No obvious issues were observed. It is anticipated that COR IDDEP observed the aftermath of a one-time or intermittent dumping event. The area is slated for periodic observation for six months and the outfall has been tagged as "suspicious", ensuring it will be monitored regularly. Additionally, since it is believed that the material observed in Jordon's Branch was fats, oils and grease, a copy of this incident will be forwarded to the DPU FOG Coordinator for review. Correspondences, field notes / sample plan mapping, sample results can be found in the corresponding IDDE folder.	The area is slated for periodic observation for six months and the outfall has been tagged as "suspicious", ensuring it will be monitored regularly. Additionally, since it is believed that the material observed in Jordon's Branch was fats, oils and grease, a copy of this incident will be forwarded to the DPU FOG Coordinator for review.	Continuing evidence of illegal one-time or intermittent dumping was not observed during follow-up visits.	6/10/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
011719 RCC-CWP IDDE	01/19/2019	Near Basset and 47th Avenue	Incident summary copied from the mitigation request: "DPU has been detecting a sanitary component in the discharge from the MS4 outfall RCC-006 (GIS Asset ID STM00033133) for some time. This outfall discharges to Reedy Creek. In 2015, the area was extensively TV'd under the supervision of DPU Tim Jones, sanitary sources were identified and repairs were made. In 2017, our group performed some routine follow-up testing at RCC-006 and found a continued sanitary impact. We passed this information to the sewer collections group, but this time, crews were unable to identify a source. In 2018, we performed another round of follow-up sampling. Again, we found a sanitary component in the flow from RCC-006 and forwarded this information along to the sewer collections group for investigation. The source was not identified. This year we have been revisiting Reedy Creek, performing outfall inventory at each outfall that discharges to the creek. As you may have already guessed, the discharge from RCC-006 continues to be impacted by a sanitary component. This has resulted in another illicit discharge report for this permit year and the outfall being prioritized as an "obvious" illicit discharge concern..."	A request to investigate the sections of impacted sewer isolated by this investigation and mitigate any issues found was forwarded to DPU collections on February 1, 2019.	A follow-up sampling event is scheduled to occur on or near 06/03/2019 as dry weather conditions permit.	
013119 3911 Cary Street IDDE	012519	3911 Cary Street	On January 25, 2019, Brian Copple (DPW Construction Inspector) reported a PVC pipe coming from a residential property at 3911 Cary Street regularly discharging flow to a City ROW. COR IDDEP received a request to investigate this issue on January 31, 2018. COR IDDEP determined that the flow was associated with an automated sump pump system associated with the property at 3911 Cary Street. Samples were collected. Based on site observations and a review of the sample results it has been determined that the flow from the PVC pipe at 3911 Cary Street is an allowable discharge. No further investigation is required.	Based on site observations and a review of the sample results it has been determined that the flow from the PVC pipe at 3911 Cary Street is an allowable discharge.	No further investigation is required.	

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
020919 Auto Connection Illicit Connection IDDE	02/09/2019	5300 Midlothian Turnpike, Richmond VA 23225	On February 5, 2019, COR IDDEP identified a suspicious outfall (GIS Asset ID STM00093614) along Reedy Creek during routine outfall reconnaissance activities. Field samples collected from outfall flow revealed the presence of detergents at 16.00 mg/L. A review of GIS mapping determined that the likely source of the dry-weather flow was an adjacent property located at 5300 Midlothian Turnpike. On February 8, 2019, COR IDDEP performed a co-inspection of the Auto Connection car dealership located at 5300 Midlothian Turnpike with the VDEQ Pollution Response Coordinator. Dye testing revealed that trench drains / floor drains located in the detail shop and the mechanic shop are plumbed to discharge through an OWS which connects to a private stormwater drainage system which then discharges to Reedy Creek.	Since the discharge is associated with commercial vehicle washing and discharge , the discharge may be eligible for coverage under VAG75 general permit. Additionally, since the discharge is plumbed to discharge to private storm infrastructure, COR will provide support for VDEQ mitigation determination as well as any applicable enforcement. The outfall associated with this discharge has been tagged as an "obvious" concern and is slated to be regularly observed.	Enforcement for this incident is currently being handled by the VDEQ. However, the outfall has been given a high priority status and will be regularly monitored.	3/22/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
012919 Ashton Square Illicit Connection IDDE	012919	Ashton Square Apartments 603 Westover Hills Blvd., Richmond VA 23225	On January 29, 2019, COR IDDEP identified an illicit connection from a maintenance shop in Ashton Square multi-family residential properties which was plumbed to discharge to Reedy Creek during normal outfall observation activities. The illicit connection was discovered when COR IDDEP observed a soapy, “pine”-scented discharge from an 8” PVC pipe situated in the Reedy Creek channel wall. This outfall (GIS Asset ID STM00093533) is identified as “RCC-010”. Upon discovery, COR IDDEP located Ashton Square maintenance personnel and informed them of the observed situation. COR IDDEP also located the property manager, Richard N. Baron, and informed him of the issue. Both the property manager and maintenance staffers were also informed that the discharge from the outfall pipe was not allowable and therefore the pipe was considered an illicit connection. Since the observed discharge was from private plumbing situated to discharge directly to waters of the state, COR IDDEP submitted a report of the incident to the VDEQ Pollution Coordinator (Kazio). Detergents (MBAS) samples collected on 01/29/2019 confirmed the presence of detergents in flow from the pipe. Subsequent samples collected on 01/31/2019 to determine if the continuous flow from the pipe was potable water tested positive, indicating that discharge from the pipe was City-supplied potable water.	A Notice of Violation was issued to the property owner on January 30, 2019. A copy of the violation was sent to the property manager, Mr. Baron. According to the Notice of Violation, the property owner has 30 days to mitigate the illicit connection to Reedy Creek.	On 03/15/2019, COR performed a dye test on the newly repaired piping to ensure the there were no illicit discharges to Reedy Creek. Here is a copy of the follow-up report from the incident: "I followed up on the illicit connection (RCC-010) associated with the maintenance shop at Ashton Square Apartments at 603 Westover Hills Boulevard, Richmond VA 23225. The repairs ended up being more complex than what we observed onsite this past Monday (03/11/2019). Instead of two spot repairs, the entire sanitary line from the maintenance shop to the main had been replaced. Cliff Gunter and I ran tracer dye through the sink and the toilet in both bathrooms at the maintenance shop and then observed it as flowed into the sanitary sewer system. Additionally, no flow was observed discharging from RCC-010 at any point during our follow-up inspection. I have attached a few photos from our inspection for your review. Based on our observations, it appears as though the illicit connection initially observed on January 29, 2019 has been adequately mitigated and therefore no further action is required by the City of Richmond"	

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
081518 Aspen Products Discharge IDDE	081518	1500 Jefferson Davis Hwy, Richmond VA 23224	This investigation unfolded over the course of two days, August 15 and August 16, 2018. The initial investigation (08/15/2018) was initiated by an internal RFD report of a blue tint in Albro Creek. COR IDDEP were able to isolate the source to the property at 1500 Jefferson Davis Highway, however the exact means by which the blue color was entering Albro Creek remained unclear. Over the course of the night of the 15th and the 16th DPU Collections crews discovered that a backed up sewer line sourced to the property had ruptured under a main MS4 sewer line causing industrial dye to release and infiltrate into the MS4. The sewer line was subsequently unblocked and repaired by COR sewer crews. Additionally the sanitary sewer in the area was modified to allow easier flow to prevent blockages and easier detection if a blockage should occur. The source of the release to the MS4 is attributed to improper use of the sanitary sewer by Aspen Products.	The sewer line was subsequently unblocked and repaired by COR sewer crews. Additionally the sanitary sewer in the area was modified to allow easier flow to prevent blockages and easier detection if a blockage should occur. The source of the release to the MS4 is attributed to improper use of the sanitary sewer by Aspen Products.		10/1/2018
082918 Westlake Construction IDDE	08/29/2019	Hagueman Drive / Glencove Lane	On August 28, 2018, DPU Jennifer Hatchett forwarded a request to investigate a citizen complaint associated with a construction site (future Westlake Hills) in a residential neighborhood. Although the forwarded citizen complaint indicated a potential sewage release, COR IDDEP did not report an obvious sanitary release. However, COR IDDEP did note a failed BMP being de-watered by a pump discharging. COR IDDEP sampled the water being discharged from the pump and also reported that the water being discharged from the pump was foul-smelling. A report of the failed BMP was forwarded to the Water Resources group for review.	No obvious evidence of a sanitary overflow or impact was observed. A report of the failed BMP was forwarded to DPU Water Resources.		2/12/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
012219 UT RCC IDDE	01/07/2019	GIS Asset ID STM00086616	On January 7, 2019, volunteer monitor Bill Shanabruich reported elevated bacteria levels in samples collected from Reedy Creek monitoring point RC3. Mr. Shanabruich specifically referenced concerns regarding the unnamed tributary which daylights near 46th Street and Reedy Avenue. Based on this report, COR IDDEP created a sample plan / map using COR GIS based on the drainage area for the target outfall. On January 22, 2019, COR IDDEP initiated the sample plan in an attempt to isolate any potential illicit discharges. A subsequent review of data collected during the January 22nd sample event did not indicate any obvious illicit discharge concerns based on established IDDE methodology / action levels. However, elevated E. Coli levels were observed throughout the collection system for the target outfall. Based on these elevated E. Coli levels, a second sampling event intended to further isolate potential high bacteria areas is slated to occur when suitable dry weather conditions and scheduling permit. Mapping, sample data tracking forms and chain of custodies can be reviewed in the file folder.	A subsequent review of data collected during the January 22nd sample event did not indicate any obvious illicit discharge concerns based on established IDDE methodology / action levels.		2/13/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
021419 195-Robinson Sewer Complaint MRDO	01/21/2019	Near 195 Overpass at Robinson	On February 14, 2019, COR IDDEP received a forwarded citizen complaint from the VDEQ stating "Yesterday (2/13/19 @ 1200 hrs) our VSMP/E&S program manager, Derek Tribble, fielded a complaint from a citizen who claims that there is “raw sewage” flowing over curbing into a storm sewer. He claims that this has been ongoing for ~ 1 year and is located on the right side of the northbound lane of the Downtown Expressway under the north end of the Robinson Street Bridge. Based on his description, here is a link to where I think it is ☐ https://goo.gl/maps/GopuuteG9Dm He described the water as flowing year-around, tannic/dark brown in color, and having a blue sheen. I told him that he perfectly described a groundwater seep, but he insisted that it was sewage and that there were several places around the city where the same thing is occurring. I told him that I would forward this to CoR for follow up as they see fit. He said he doesn't care whether or not he gets a call back, he just wanted to report his concerns."	Resolution not required.		2/14/2019
			COR IDDEP observed the location on February 14, 2019. Based on site observations, it is anticipated that the reported flow is groundwater. Samples were not collected. Follow-up is not required.			

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
021219 Byswick Drum IDDE	021219	Near 5249 Media Road	On 02/12/2019, while performing outfall recon on Reedy Creek, COR IDDEP observed multiple 55-gallon drums (4 polyethylene, 1 steel) situated on a City of Richmond easement directly adjacent to Reedy Creek. Since the easement appeared to be being maintained by the occupants of an adjacent residential property at 5249 Media Road, COR IDDEP attempted to speak with the property owner about the drums. COR IDDEP spoke with property owner Tim Smith about the drums on 02/19/2019. According to Mr. Smith, he maintains the drums were indeed his. According to him the 4-polyethylene drums are empty and he was planning on using them for rain barrels. Mr. Smith stated he had been using the steel drum to store hot ashes from the fire place. Additionally, he stated that he had indeed been maintaining the easement since he had purchased the property. Since the drums do not contain chemical or petroleum based materials which could negatively impact Reedy Creek, further enforcement action is not required.	since the drums do not contain chemical or petroleum based materials which could negatively impact Reedy Creek, further enforcement action is not required.		2/21/2019
022019 Commerce Rd Runoff IDDE	022019	Bellmeade / Commerce	On 02/20/2019, Cliff Gunter of DPU Pretreatment reported an unusual discharge near the intersection of Bellemeade and Commerce. Although the release was isolated to a small section of Commerce Road, a source was not identified. Based on the weather conditions, it is anticipated that the discharge was runoff laden with de-icing chemicals. A sample of the material was collected and has been slated to be analyzed for metals associated with various de-icing chemicals.	Analytical samples were collected to determine if the discolored runoff was laden with de-icing chemicals.	02/28/2019- Sample results did not indicate the presence of de-icers. It is unclear what the source of the release.	2/21/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
022519 Woodbine Diesel IDDE	02/24/2019	Near 1916 Woodbine Avenue	02/24/2019 - Initial VDEM Report Forwarded to COR IDEEP - "PER NRC REPORT #1238502, PRIVATE CITIZEN LAURA TAYLOR (804 398 8406) REPORTED THAT A PIPE PROTRUDING FROM THE GROUND IN A CULVERT IN THE AREA OF 4699-4300 RIVERSIDE DR, RICHMOND, VA 23225 IS CREATING A STRONG GASOLINE SMELL AND PRODUCING A RAINBOW-COLORED SHEEN IN A CREEK. UNKNOWN IF THE RELEASE IS SECURED OR IF ANY REMEDIAL ACTIONS HAVE BEEN TAKEN. NO VDEM RESOURCES REQUESTED. " See the full VDEM report to read a summary of the incident response which occurred on 02/24/2019. COR IDDEP investigated the release area on 02/25/2019 to determine the extent of the issue reported on 02/24/2019. Upon arrival COR IDDEP immediately observed a substantial area of staining on curbing leading up to a drop inlet near the end of Woodbine Road, near 1916 Woodbine. The source of the staining was identified in the street near 1901 Woodbine. Although no reposnible party was identified, it is anticipated that the source of this release was a release from a vehicle or piece of equipment. Since free product was observed in the drop inlet at the end of the Woodbine, COR IDDEP requested assistance from DPU Collections to clean out the basin.	DPU Collections cleaned the impacted basin and then washed the impacted curbing while capturing the washwater using the vacuum truck.		2/25/2019
022019 RCC-022 IDDE	02/19/2019	N/A	Although analytical results for RCC-022 did not definitively indicate an illegal discharge or connection, ammonia levels in the sample were elevated. On 03/05/2019, COR IDDEP performed a follow-up inspection of the drop inlet associated with RCC-022 to identify any issues. The inspection was performed during dry weather conditions.	No discharge was observed by COR IDDEP on 03/05/2019.		3/5/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
032919 Pressure Works MRDO	032919	1704 Roseneath Road, Richmond VA 23230	On 03/29/2019, COR IDDEP responded to a VDEQ-forwarded citizen complaint regarding a release of sodium hypochlorate release to the City of Richmond's storm sewer system. According to the report, Pressure Works, a pressure washing supply company "would regularly dump large amounts of industrial grade sodium hypochlorite 12.5% into the local water supply via drains on site." COR IDDEP spoke with Ryan Breeding, Pressure Works purchasing manager, while onsite. Mr. Breeding stated that the complainant was likely referring to the sodium hypochlorite loading area to the rear of the facility where commercial trucks were loaded daily from mulitple ASTs in a contained area. Mr. Breeding accompanied COR IDDEP on the observation of the loading area. Inspection of the concrete loading area revealed small areas of accumulated saleable product lost during hose connection/disconnection and associated washwater leading to a private grated drop inlet. COR IDDEP was able to verify that the grated drop inlet receiving the discharge was plumbed to the sanitary sewer system and therefore the discharge was not entering the separate storm sewer system. The observed discharge is not considered an illegal discharge to the combined sewer system under the City of Richmond sewer use ordinance. According to Mr. Breeding, the complaint may have been associated with an employee who had recently been terminated.	COR IDDEP was able to verify that the grated drop inlet receiving the discharge was plumbed to the sanitary sewer system and therefore the discharge was not entering the separate storm sewer system. The observed discharge is not considered an illegal discharge to the combined sewer system under the City of Richmond sewer use ordinance.		3/29/2019
040319 Stratton Diesel Complaint IDDE	040319	5256 Stratton Road	On April 4, 2019, COR IDDEP received an internal report of possible diesel or petroleum product in a drainage ditch discovered during MS4 maintenance activities. Upon inspection, the suspected material was determined to be a combination of a bacterial sheen and organic scum. No indication of petroleum was observed in or near the MS4 drainway. However, investigation of onsite renovation activities revealed the improper excavation of an underground home heating oil tank. A report of this improper excavation was forwarded to the RFD Fire Marshall for review.	N/A		4/3/2019

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
022019 RCC-044 IDDE	02/20/2019	RC-044 / STM00093645	Although analytical results for RCC-044 did not definitively indicate an illegal discharge or connection, ammonia levels in the sample were elevated. CWP flow chart indicates potential washwater impact on the sample collected on 02/05/2019.	On 03/14/2019, COR IDDEP performed follow-up sampling at the outfall to identify any issues. The inspection was performed during dry weather conditions. Additionally, since the outfall appeared as a "stub" in GIS, COR IDDEP mapped the piping upstream of the outfall and sent GPS point and mapping to the Technical Services group for entry into the GIS.		4/9/2019
051719 Jordon's Branch Volunteer Complaint IDDE	05/16/2019	Jordon's Branch / Bryan Park	On the afternoon of 05/16/19, volunteer monitor Dianne Jean left a voicemail reporting a possible petroleum impact (oily spots) to Jordon's Branch near the volunteer monitoring point. COR IDDEP responded to the complaint on the morning of 05/17/2019. Investigation of Jordon's Branch from the monitoring point upstream to the Richmond - Henrico boundary did not reveal any obvious petroleum impact.	Illicit discharge not observed.		
060719 Garland Avenue Sewer Complaint IDDE	06/07/2019	3415 Garland Avenue	On June 7, 2019, COR IDDEP received a VDEQ-forwarded citizen complaint regarding an area of standing sewage adjacent a residential property located at 3415 Garland Avenue. COR IDDEP inspection of the area revealed an excavation filled with sewage on the side of the residential property. Based on the depth and the location of the excavation COR IDDEP did not anticipate that the sewage would be able to overtop the excavation and/or migrate to the nearby collection system (combined). However, based on the nature of the issue, a copy of the complaint was forwarded to both the City of Richmond Department of Health and the City of Richmond Code Enforcement Division.	Sewage contained onsite, a copy of this complaint was forwarded to the City of Richmond Health Department and Code Enforcement for review.		

Investigation Identifier	Incident Report Date:	Incident Location:	Incident Summary:	Resolution Summary:	Follow-Up Summary:	Closure Date
061219 Potable Water Seep 18th-Broad MRDO	06/12/2019	18th/Broad	On June 12th COR IDDEP received a forwarded citizen complaint regarding an unknown seep near the parking area associated with a McDonald's at 18th and Broad. Investigation of flow from the seep revealed the discharge was potable City water. A work ticket was put in requesting repair of the damaged potable water supply line.	Analytical tests reveal the flow from the seep is potable City drinking water.		6/17/2019
071019 Hawthorne Sewage Infiltration IDDE	07/10/2019	N/A	While performing a drainage investigation for the Ginter Park water storage tower, COR IDDEP identified an infiltration of sanitray sewage into a nearby MS4 line. A report of the incident was forwarded to the DPU sewer collections team for investigation / repair.	Forwarded to the DPU collections team for investigation / repairs.		
041619 Forest Hill and Jahnke New Consctruction IDDE	04/16/2019	4910, 4920, 4930 Forest Hill Avenue	On 04/16/19, COR IDDEP observed improper de-watering practices from a new construction area on GPINs S0060293008, S0060293004. Improper de-watering activities included running a hose from a de-watering pump situated in an excavation onsite to a stormwater inlet along Forest Hill Avenue without sediment control. Construction personnel were instructed to cease de-watering until control measures were installed. COR IDDEP forwarded a report of the incident to DPU Water Resources.	The discharge was stopped on the initial COR IDDEP visit. DPU Water Resources performed a follow-up inspection of the site and confirmed that adequate sediment control (sediment bag) had been installed prior to continuation of de-watering.		4/16/2019

[illegible]

Appendix F: James River and Tributary Monitoring Report

Report to City of Richmond Department of Public Utilities

2019 Water Quality Monitoring Activities

Submitted by:

Paul Bukaveckas, Rima Franklin and Rachel Henderson

Virginia Commonwealth University

Background

VCU carries out a program of environmental monitoring for DPU that documents spatial and temporal variability in water quality of the James River and for tributary streams located within the City of Richmond. The purpose of this monitoring program is to characterize adverse effects on water quality arising from runoff of nutrients, sediment and bacteria, and to document recovery following remediation. This project entails sample collection and laboratory analyses using protocols consistent with prior work carried out by VCU and by the Virginia Department of Environmental Quality. Deliverables are monthly data compilations submitted to the City of Richmond within 45 days following the end of each monthly monitoring period.

As per our Scope of Work, we carried out the following activities during 2019:

A) James River: year-round, weekly monitoring at 3 stations (Huguenot Bridge, Mayo Bridge, CSO#006 outfall) and twice-monthly monitoring at 3 stations (B168, B166 and B157). Data collected at each station included: water quality (pH, DO, temperature, conductivity and turbidity), suspended sediments (TSS), nutrients (TN, TP and ammonia), and bacteria (*E. coli*).

B) Tributary Streams: year-round, twice-monthly monitoring at 7 sites (Broad Rock, Reedy, Gillies, Pocoshan, Rattlesnake, Little Westham and Shockoe). Data collected at each stream included: discharge, water quality (pH, DO, temperature, conductivity and turbidity), suspended sediments (TSS), nutrients (TN, TP and ammonia), and bacteria (*E. coli*). Macro-invertebrate communities are sampled twice per year during Spring and Fall index periods to assess stream health on the basis of biological condition.

C) Bacteria Source Tracking: we continued a pilot study initiated last year to assess the utility of DNA-based tracking techniques in assessing sources of bacteria. We analyzed samples collected at three locations in the James River: a riverine site (Huguenot Bridge), at the main CSO outfall (#006) and a site downstream of the outfall (station B157). For samples collected in 2018-19 we are in the process of quantifying 16S *rRNA* gene copies for species of enteric bacteria that include an urban suite (humans and dogs), a wildlife suite (goose and deer) and an agricultural suite (cow, chicken, and horse). We initiated bacteria source tracking analysis for samples collected at three urban streams (Broad Rock, Gillies and Reedy) which are being tested for human, dog and goose markers.

Results

Sampling activities were successfully carried out in accordance with the Scope of Work. A total of 37 sampling events were carried out on the James River, and 23 sampling events were conducted on urban streams. Since the start of these monitoring efforts (James River in July

2010; urban streams in January 2016), VCU has carried out over 400 James River sampling events and nearly 100 urban stream sampling events. For this report, we summarize the overall project results pertaining to fecal indicator bacteria (*E. coli*). Our focus on *E. coli* stems from recent interest by the public and other stakeholders in documenting the occurrence of fecal contamination in the James.

We derived estimates for the frequency of exceeding *E. coli* safety thresholds (> 230 cfu/100 ml) at our riverine (Huguenot Bridge) and estuarine sampling locations. For this analysis we included older data (2010-2015) for estuarine stations located in the lower tidal fresh segment (B150, B138 and B107), though our current monitoring for DPU includes only stations in the upper tidal fresh segment. We observed the highest frequency of exceedance (31%) at the site proximal to the main CSO outfall (#006), and at the adjacent downstream site (B168 = 26%). This rate of exceedance for weekly sampling equates to an average exceedance interval of once per 3 weeks. By comparison, the riverine site (Huguenot) and stations located in the lower tidal fresh segment exhibited exceedance rates <10%, which correspond to exceedance intervals of ~2.5 months. These data suggest that the spatial extent of fecal contamination associated with the CSO site is limited to the tidal fresh segment (extending to B157, which is located at Osborne Landing). Exceedance rates were generally higher among urban streams (range = 27-68%) relative to the river and estuarine sites in the James. The highest frequency of exceedance was observed in Broad Rock, Rattlesnake and Reedy Creeks.

	River		Upper Tidal Fresh				Lower Tidal Fresh		
	Huguenot	Mayo	CSO	B168	B166	B157	B150	B138	B107
# samples	420	422	420	372	375	394	218	218	217
#>230 cfu	39	88	130	97	70	57	17	16	28
Exceedance%	9%	21%	31%	26%	19%	14%	8%	7%	13%

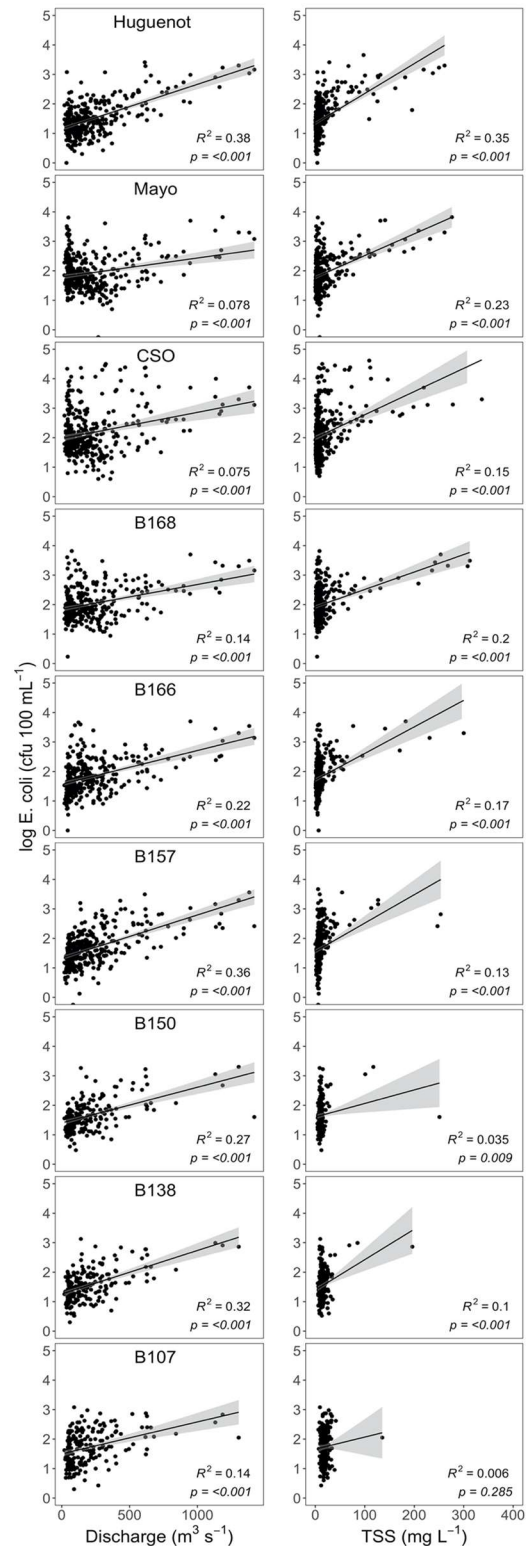
Table 1. Frequency of exceedance for *E. coli* safety thresholds at riverine and estuarine sites in the James (station numbers refer to buoy locations) during 2010-2019.

	Richmond Urban Stream Monitoring Sites							
	Broad Rock	Gillies	Pocoshan	Rattlesnake	Reedy	Shockoe	Westham	Upham
# samples	99	99	61	60	99	30	41	69
#>230 cfu	52	27	21	41	61	9	15	22
Exceedance%	53%	27%	34%	68%	62%	30%	37%	32%

Table 2. Frequency of exceedance for *E. coli* safety thresholds at stream monitoring locations during 2016-2019.

As there is interest in developing models to forecast risk of exposure to fecal contamination, we analyzed *E. coli* data in relation to two potentially useful predictor variables: river discharge and suspended sediments. Wet weather events are associated with increased runoff from the catchment, resulting in greater river discharge and sediment concentrations. These conditions also favor elevated bacteria levels due to inputs from various sources including sewer overflows, as well as pet waste, livestock and wildlife. As expected, we found significant positive relationships between *E. coli* and both discharge and suspended sediments (TSS; see figure at right). Strongest relationships were observed at the riverine site (Huguenot Bridge: discharge $R^2 = 0.38$, TSS discharge $R^2 = 0.35$). Models based on discharge had low predictive value at the CSO site, and at neighboring stations (Mayo Bridge, B168). For this analysis we used average daily discharge of the James (measured at the Fall Line; USGS #2037500) on dates when bacteria samples were collected. Use of average discharge measurements for the week preceding sample collection yielded lower predictive values. Models based on suspended sediments did not perform as well as discharge-based models, particularly at the estuarine sites. In the estuary, suspended sediment concentrations are regulated by tidal forces, and are less influenced by riverine inputs. We also tested the utility of turbidity measurements as a predictor of *E. coli* and found that these had similar predictive power as models based on TSS.

Lastly, we evaluated synchrony in *E. coli* concentrations among sites (i.e., the extent to which concentrations at one site tracked those of another site). We found that *E. coli* concentrations at the riverine site (Huguenot Bridge) were a strong predictor ($R^2 = 0.57$ to 0.69) of concentrations at Mayo Bridge and at downstream sites (B157, B150 and B138), excluding those in proximity to the CSO (CSO, B168 and B166). Overall, these findings suggest that riverine discharge may be a useful predictor for the occurrence of elevated *E. coli* in riverine segments of the James, and in estuarine segments,



excluding those proximal to the CSO site. For the latter, alternative models based on local rainfall might perform better given that variations in bacteria levels are affected by local inputs, rather than upstream sources.

We performed a similar analysis for the stream *E. coli* data using spot measurements of discharge obtained at the time of sample collection. Two of the sites (Gillies and Upham) yielded significant positive relationships with discharge ($R^2 = 0.33$ and 0.42 , respectively). Several other sites yielded significant, but weak relationships with discharge (Broad Rock, Pocosham, Rattlesnake and Reedy). Two sites did not exhibit significant relationships with discharge (Shockoe, Westham). Stream TSS concentrations were generally not strong predictors of *E. coli* levels, with the exception of Westham Creek.

In summary, this analysis suggests that our dataset could be used to develop forecasting models for *E. coli* levels in the riverine segment of the James (e.g., at Huguenot Bridge) based on river discharge. Our dataset provides a large number of observations (over 400 measurements) over a broad range of discharge conditions. However, we note that the predictive power of the model is strongly influenced by observations in the high end of the discharge range ($>500 \text{ m}^3/\text{s}$), when recreational usage is less likely. A model derived for the lower range of discharge conditions would have substantially less predictive power as *E. coli* levels are highly variable in this range. For portions of the James below the City of Richmond (upper tidal fresh segment), river discharge is not a strong predictor of *E. coli* levels due to local CSO influences. Further work could be done to link rainfall in the Richmond area with CSO discharge and estuarine *E. coli* levels. This model could provide forecasts of health safety risks for water downstream of Richmond based on anticipated rainfall within the City.

