



Annual Report

**January 1, 2019
Through
December 31, 2019**

Pursuant to Paragraph 20, of the Consent Decree between Baltimore County and the United States Environmental Protection Agency, Department of Justice and the Maryland Department of the Environment

Table of Contents

i. Sanitary Sewer Overflow (SSO) Structure Elimination Progress	3
ii. Rainfall and Flow Monitoring Plan Compliance	6
iii. Evaluation of Rainfall and Flow Monitoring Data	6
iv. Fats, Oils and Grease (FOG) Program Updates.....	7
v. Illegal Stormwater Discharges.....	8
vi. Pumping Station Status.....	8
vii. Collection System Model Implementation Status.....	8
viii. Supplemental Collection System Inspection Progress.....	9
ix. Sewer Cleaning Progress	9
x. Collection System Inventory Progress.....	9
xi. Emergency Response Plan.....	9
xii. Building Backup Report.....	9
xiii. Annual Update of SSO Characterization Report.....	10
Attachment A – Non-Pump Station Overflow Structure	12
Attachment B – Flow Monitor Summary	15
Attachment C – List of Illegal Stormwater Discharges.....	19
Attachment D – List of Deficiencies found during the Inspection of Pumping Stations	21
Attachment E – Detail of Footage Inspected per 15.B.i.b	27
Attachment F – Building Backups	29
Attachments 1 and 2 - Flow Monitoring and Rain Gauge Location Maps	ftp download



Pursuant to Paragraph 20 of the Consent Decree entered between Baltimore County and the United States Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE), this document constitutes the required Annual Report for the period **January 1, 2019** through **December 31, 2019**.

The annual report is a periodic review of Baltimore County activities related to the accomplishment of the Consent Decree general and specific requirements. The report is required to address:

- i. Sanitary Sewer Overflow (SSO) structure elimination progress
- ii. Rainfall and Flow Monitoring Plan compliance
- iii. Evaluation of the rainfall and flow monitoring data
- iv. Fats, Oils and Grease (FOG) Program updates
- v. Illegal Storm Water discharges
- vi. Pump Station Status
- vii. Collection System Model Implementation Status
- viii. Supplemental Collection System Inspection Progress
- ix. Sewer Cleaning Progress
- x. Collection System Inventory Progress
- xi. Emergency Response Plan
- xii. Building Backup Report
- xiii. Annual Update to the SSO characterization report

i. Sanitary Sewer Overflow (SSO) Structure Elimination Progress

- (a) Summarize progress in implementing approved schedules for the elimination of Non-Pump Station SSO structures

The listing of relief points is shown in Attachment A. Below is the status of the SSO elimination projects:

- 38 original SSOs (per CD Appendix A-2)
- 9 SSOs identified after CD effective date
- 3 SSOs reclassified as pump station SSOs
- 34 SSOs eliminated
- 10 SSOs scheduled for elimination

No SSO structures were eliminated during the reporting period.

Elimination of Non-Pump Station SSO Structures 22, 23A, 23B, 24

The original Consent Decree deadline for SSO elimination was March 22, 2017; however, on February 14, 2017, the County submitted a time extension request due to completing a required Phase II archaeological investigations for the Maryland Historical Trust and resulting delay in obtaining permit approval from the U.S. Army Corps of Engineers (ACOE). The requested SSO elimination date was undefined since the determination from the archaeological investigation may have required realignment and re-design of the new relief sewer. Subsequently, the County obtained ACOE's permit and, to expedite project completion, the County separated the project into two construction contract.

On September 3, 2019, the County issued the notice to proceed for the Phase I construction project, which is on-going. The Phase II construction project requires right-of-way acquisition



and environmental permits. After the right-of-way easements have been acquired, the environmental permits obtained and the Phase II construction project notice to proceed has been issued, the County will submit a second SSO elimination time extension with a definitive date to eliminate the SSO structures.

Elimination of Non-Pump Station SSO Structures 41 and 129

The original Consent Decree deadline for SSO elimination was March 20, 2018; however on October 4, 2017 the County submitted a time extension request due to private property easement acquisition. As stated in the time extension request, the requested SSO elimination date was undefined since the time to negotiate and acquire the easements was unknown. Subsequently, the right-of-entry agreements were finalized and the County completed design work. On October 3, 2019 the County awarded the construction project and will submit a second SSO elimination time extension after the contractor has submitted their construction baseline schedule.

Elimination of Non-Pump Station SSO Structures 113, 116, 117 and 118

The County continues to meet and coordinate with Baltimore City to complete the needed hydraulic improvements to the downstream collection system, which is maintained by the City. A summary of the County's 2019 SSO elimination and/or flow monitoring activity is provided in Attachment A.

A summary of all County and EPA/MDE communication in 2019 related to SSO structures is shown below:

Date of Correspondence	From	To	Control ID	SSO ID	SSO Name	Subject
1/16/2019	County	EPA/ MDE	236	23A, 23B, 24, 41, 129	Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 12/21/2018
4/8/2019	County	EPA/ MDE	249	118, 22, 23A, 23B, 24, 41, 129	Overbrook Road, Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 3/21/2019
5/15/2019	County	EPA/ MDE	240	22, 23A, 23B, 24, 41, 129, 113, 116, 117, 118	Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive, Marnat Road, Nunnery Lane, Briarwood Road, Overbrook Road	2019 Q1 Report
5/24/2019	County	EPA/ MDE	256	118, 23A, 23B, 24, 129	Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 5/10-12/2019
8/5/2019	County	EPA/ MDE	270	113, 23A, 23B, 24, 41, 129	Marnat Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 7/11/2019
8/13/2019	County	EPA/ MDE	264	22, 23A, 23B, 24, 41, 129, 113, 116, 117, 118	Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive, Marnat Road, Nunnery Lane, Briarwood Road, Overbrook Road	2019 Q2 Report
9/11/2019	County	EPA/ MDE	271	129	Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 8/22/2019
11/13/2019	County	EPA/ MDE	272	22, 23A, 23B, 24, 41, 129, 113, 116, 117, 118	Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive, Marnat Road,	2019 Q3 Report



Date of Correspondence	From	To	Control ID	SSO ID	SSO Name	Subject
					Nunnery Lane, Briarwood Road, Overbrook Road	
11/20/2019	County	EPA/MDE	281	113, 23A, 23B, 24	Marnat Road Southern Cross Drive, Southern Cross, Patterson Avenue	Request to Waive Stipulated Penalties for Overflow Discharges on 10/27/2019
11/21/2019	County	EPA/MDE	282	113, 118, 22, 23A, 23B, 24, 41, 129	Marnat Road, Overbrook Road, Alter Road, Southern Cross Drive, Southern Cross, Patterson Avenue, Aiken Avenue, Queen Anne Drive	Request to Waive Stipulated Penalties for Overflow Discharges on 10/31/2019

(b) Summarize post-monitoring data after the elimination of a Non-Pump Station SSO structure

Flow monitoring activities will continue in accordance with Paragraph 7.C.v of the Consent Decree. Once sufficient flow monitoring data has been collected, the County will complete the hydraulic evaluation in accordance with Paragraph 7.C.v of the Consent Decree.

(c) Progress in implementing plans developed in response to certain discharges from Pump Station SSO structure(s)

The following pump stations discharged to their overflow structures:

Pump Station	Sewershed	Date of Overflow	Corrective Action
Kings Point	Patapsco	2/24/2019	Force Majeure
Randallstown	Gwynns Falls	6/2/2019	Force Majeure
Oak Forest	Patapsco	10/31/2019	Reset VFD settings & change O&M plan
Frederick Road	Patapsco	10/31/2019	Design project to reduce I&I
Frederick Road	Patapsco	11/5/2019	Repair check valves

According to CD Paragraph 7.C.vi, the County is required to submit an action plan and schedule for certain discharges from Pump Station SSO Structures that are caused by an event other than complete loss of pumping capacity of the pump station.

On March 25, 2019, the County submitted to EPA/MDE a letter stating that the February 24, 2019 SSO at the Kings Point Pump Station was caused by high winds that caused intermittent power fluctuations on both independent power feeds. The power fluctuations resulted in a variable frequency drive (VFD) fault and pump shutdown. The independent feeds are the approved backup power plan for that pump station; therefore, the County considers this to be a force majeure event for which an action plan and schedule was not required.

On June 25, 2019, the County submitted to EPA/MDE a letter stating that the June 2, 2019 SSO that occurred at the Randallstown Pump Station was the result of power fluctuation of the station's electrical feed that caused an overvoltage fault of the VFDs of both pumps. The power fluctuation was not long enough to automatically transfer power to the on-site generator and the generator is the approved backup power; therefore, the County considers the power fluctuation to be a force majeure event for which an action plan and schedule was not required.

On December 18, 2019, the County submitted to EPA/MDE an action plan for the October 31, 2019 SSO at the Oak Forest Pump Station. As stated in the action plan, a post-SSO forensic investigation determined that the VFD for one of the pumps was mistakenly set to 50 Hertz, which



limited the pump's hydraulic capacity; therefore, the pump station was not operating at full capacity when wet weather flow was being conveyed to the station. The County revised the monthly preventive maintenance inspection to include confirming the VFD settings at all pump stations; therefore, the County developed and has implemented the action plan.

On January 10, 2020 the County submitted to EPA/MDE an action plan for the October 31, 2019 SSO at the Frederick Road Pump Station. As stated in the action plan, the County is in the design phase for a sewer rehabilitation improvement project to reduce wet weather flow to the pump station. The project is included in the EPA/MDE-approved Patapsco Sewershed Sewer Repair, Rehabilitation and Replacement Plan. On October 28, 2018 the County submitted to EPA/MDE a potential delay notification for the improvement project due to private property right of way acquisition obstacles. After completing the improvement project, the County will complete post-construction flow monitoring and an inflow/infiltration analysis to determine the project's effectiveness in reducing wet weather flow and to revise the existing hydraulic model.

On January 10, 2020 the County submitted to EPA/MDE an action plan for the November 5, 2019 SSO at the Frederick Road Pump Station. As stated in the action plan, a post-SSO forensic investigation determined that an air pocket located inside a valve precluded the valve from closing, which allowed the force main to drain back. To avoid a similar future incident, the County replaced the gaskets and bolts of all the check valves and revised the pump lockout timer from 15 seconds to 10 minutes; therefore, the County has implemented the action plan.

ii. Rainfall and Flow Monitoring Plan Compliance

- (a) Summarize results of annual evaluation of numbers and placement of rain gauges and flow monitors

In accordance with Paragraph 9.B.i, the County continued to collect rainfall data as necessary to allow the characterization of flow from sewershed service areas, the characterization of known SSOs, the development or improvement of hydraulic models for the sewersheds, and evaluate the effectiveness of measures implemented to reduce I/I and to increase system capacity.

- (b) Report any changes to the locations of gauges or flow monitors

A summary of the flow monitoring locations as of December 31, 2019 is provided in Attachment B. Maps of flow monitoring and rain gauge locations are provided in Attachments 1 and 2.

- (c) Report on any deviations from the approved plan

None.

iii. Evaluation of Rainfall and Flow Monitoring Data

- (a) Inflow/infiltration (I/I) evaluation progress (due 60 days prior to date of SRRR plan submittal)

This task is complete.

- (b) Long-term capacity/peak flow management evaluation (due 60 days prior to date of SRRR plan submittal)

This task is complete.



iv. Fats, Oils and Grease (FOG) Program Updates

- (a) Provide the results of the annual evaluation of the effectiveness of the modified FOG control program

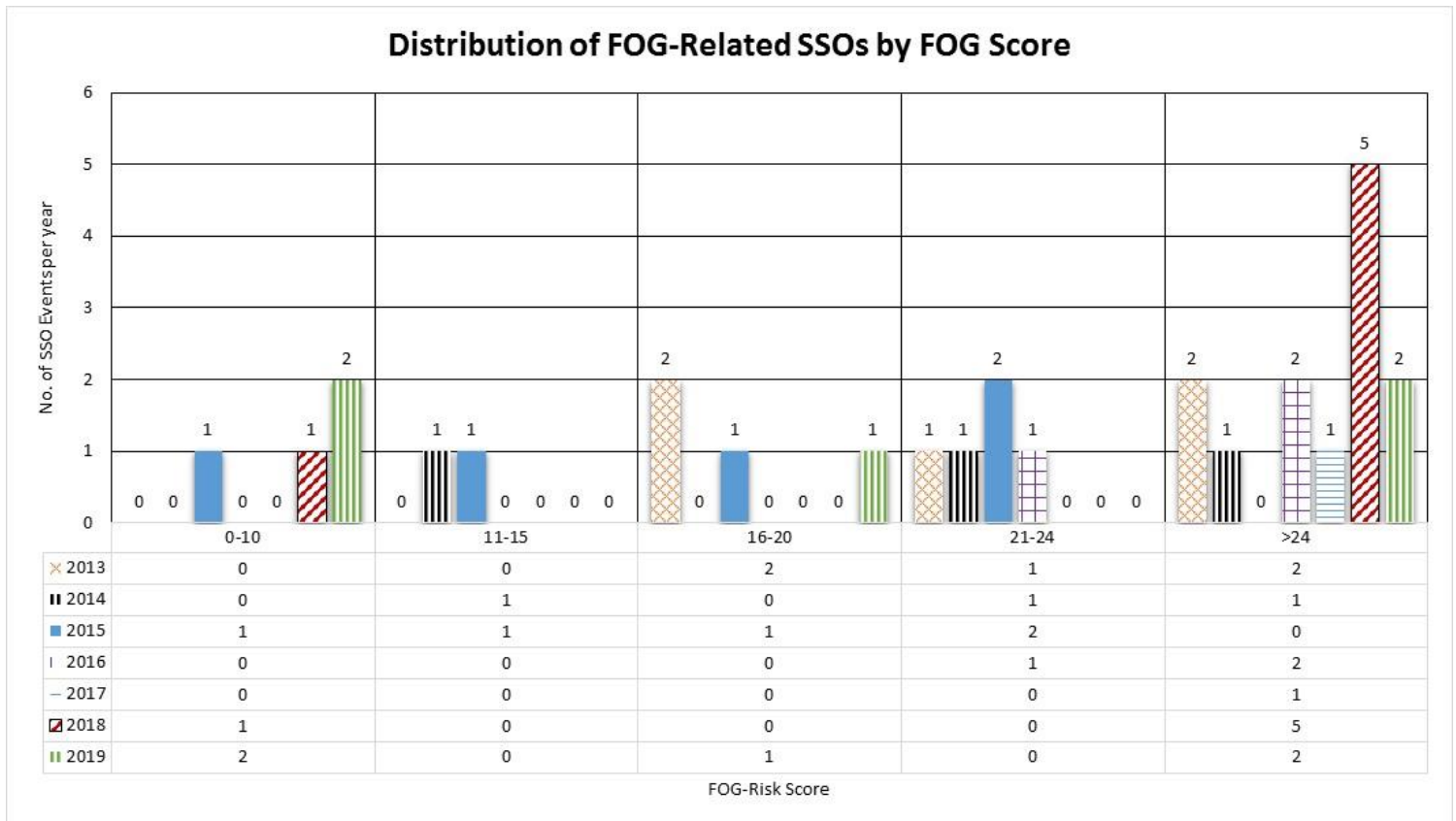
In accordance with Paragraph 11.I of the Consent Decree, the County continues to use the food service facility inspection results and the performance indicators to evaluate the effectiveness of the modified FOG Program. The evaluation results are summarized in Paragraph (c) below.

- (b) Provide an updated database and map of grease generating facilities

A map and database of grease generating facilities are provided in Attachment 3.

- (c) Evaluate the effectiveness of the modified FOG program

The evaluation of the modified FOG program attempted to determine a correlation between the number of SSO discharges and the proximity and FOG discharge risk score of FOG-generating facilities. Below are the analysis results:



The graph indicates that facilities with a FOG discharge risk score of >16 may have a higher incidence of localized grease-related sewer overflows. The County will further analyze the data to confirm this possible correlation.



v. Illegal Stormwater Discharges

During the reporting period, the County identified 23 illegal stormwater connections. A summary of the actions taken in response to each instance is provided in Appendix C.

vi. Pumping Station Status

- (a) Report on the required annual evaluation of the backup power program

Baltimore County completed the evaluation of the effectiveness of its existing Pump Station backup power program, including the use of portable generators as backup power for multiple stations, in preventing SSOs relating to power outages.

During the reporting period, the fleet of six (6) portable generators that supplement on-site backup power at the County's stations was adequate to meet the emergency power needs. The percent of Pump Stations which are now equipped with on-site backup emergency power has been increased to ninety five percent (95%).

On March 24, 2019 a storm event at the Kings Point Pump Station resulted in a power loss from both independent electrical services. The power outage was caused by high winds, which damaged the two independent electrical feeds. The dual independent electrical feeds were installed at the station as an MDE-accepted back-up power source and; therefore, the portable generator used to mitigate the overflow is not included in the annual evaluation.

On June 2, 2019 electrical feed power fluctuations at the Randallstown Pump station caused an overvoltage fault of the VFDs of both pumps resulting in a SSO discharge of 9, 500 gallons. The power fluctuation was not long enough to automatically transfer power to the on-site generator. Since the power fluctuation is considered a force majeure event, this event was not considered as a deficiencies in the back –up power evaluation.

- (b) Report on the development and implementation of any plans related to overflows due to power outages at pumping stations

None. The back-up power evaluation did not indicate any deficiencies in the portable generator fleet, therefore no remedial plan is required.

- (c) Pump station inspection deficiencies list

A report on the deficiencies discovered during the inspections of our pumping stations is provided in Attachment D.

- (d) Pump station deficiencies discovered during Engineering Evaluation/Condition Assessments

This task is complete.

- (e) Summarize the progress in implementing a pump station information management system

This task is complete.

vii. Collection System Model Implementation Status

This task is complete.



viii. Supplemental Collection System Inspection Progress

For Paragraph 15.B.i.b inspections, the progress made during this reporting period is detailed in Attachment E. In summary, approximately 4.6 miles of sewer and 74 manholes and other appurtenances were inspected during the specified period. It is anticipated that required collection system inspections will be completed by the September 20, 2020 compliance deadline.

ix. Sewer Cleaning Progress

The County has completed the initial Consent Decree requirements and is executing the maintenance cleaning program as described in the MDE/EPA-approved Operation and Maintenance Plan.

x. Collection System Inventory Progress

This task is complete.

xi. Emergency Response Plan

On July 2, 2019 the County submitted to EPA/MDE the updated plan.

xii. Building Backup Report

Maps of Building Backups since the last submission are provided in Attachment 4.

There were 80 reported building backups (including occurrences with zero gallon volumes) during the reporting period, as summarized in Attachment F. A summary of reported building backup history is provided below:

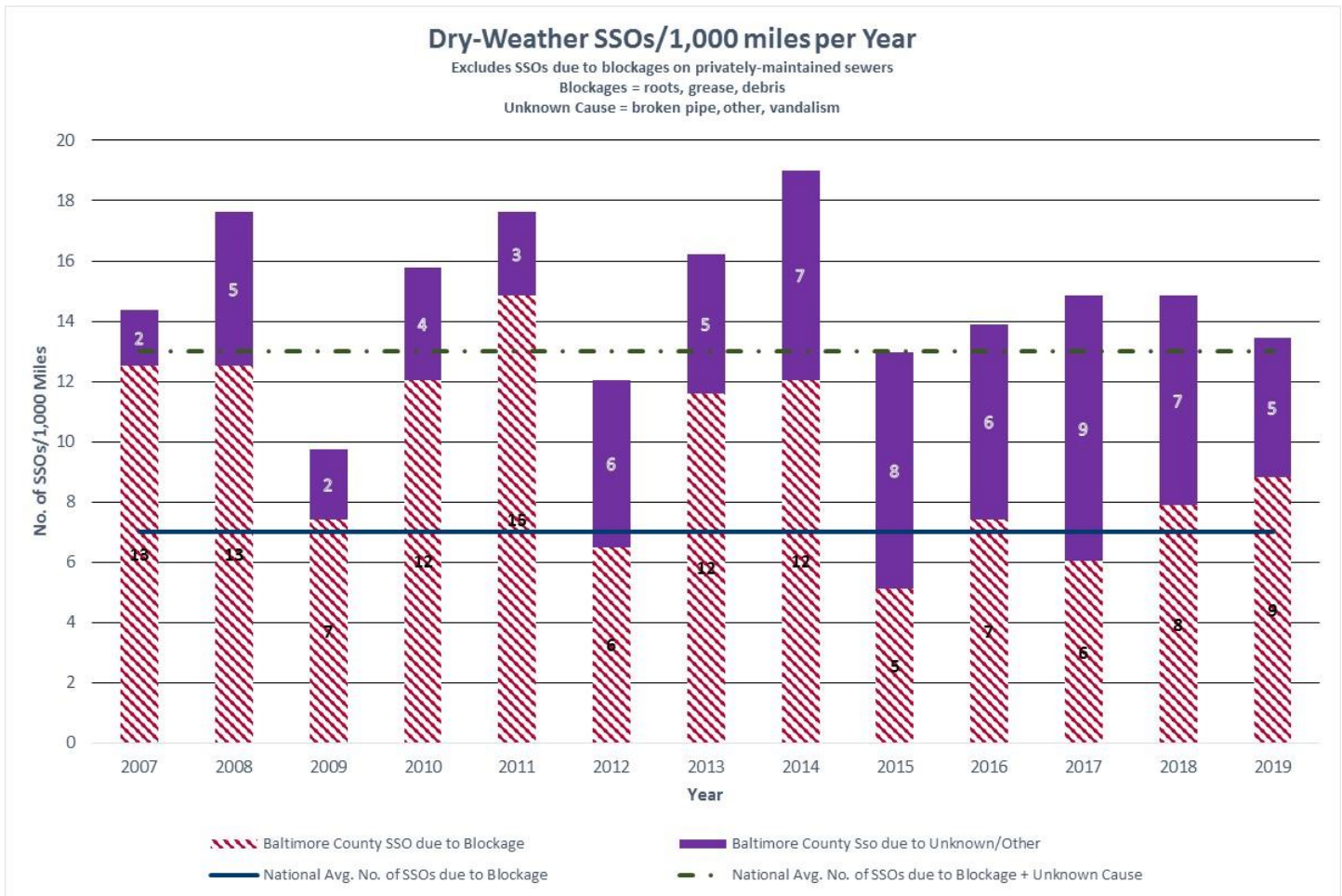
Year	Total Number of Reported Backups (ea)	Percent Increase/Decrease from Previous Year (%)
2006	113	---
2007	48	-57.5
2008	77	60.4
2009	44	-42.9
2010	90	104.5
2011	241	167.8
2012	139	-42.3
2013	217	56.1
2014	346	59.5
2015	143	-58.6
2016	136	-4.9
2017	71	-47.8
2018	345	386
2019	80	-76.8



xiii. Annual Update of SSO Characterization Report

In accordance with Paragraph 7.B.ii of the Consent Decree, the updated SSO characterization maps are provided in Attachment 5.

Based on the data available in EPA’s report to Congress titled “Impacts and Control on CSOs and SSOs”, dated August 2004, there are, on average, approximately 7 dry-weather SSOs due to pipeline blockages per 1,000 miles per year and an additional 6 dry-weather SSOs with unknown causes per 1,000 miles per year. Below is a summary per year of Baltimore County’s dry-weather SSOs due to a pipeline blockage.



As shown in the above graph, since 2015, the number of SSOs per year due roots, grease and debris is approximately equal to the national average; however, in the same time period, the number of SSOs per year due to unknown/other causes, such as broken pipe, vandalism, etc. has significantly increased compared to the prior 7 year (2007-2014). Since 2015 the total number of SSOs per year has approximately doubled due to unknown/other causes.



I certify under penalty of law that this information was 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 directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete.

Thomas Kiefer, PE
Chief, Bureau of Engineering and Construction

- Attachments:
- 1) Flow Meter Site Location Maps
 - 2) Rain Gauge Site Location Maps
 - 3) Maps and Database of Grease Generating Facilities
 - 4) Basement Backup Characterization Maps
 - 5) SSO Characterization Maps

Control Document No. 299



Attachment A – Non-Pump Station Overflow Structure



Non-Pump Station Overflow Structures

Name	Address	SSO ID	Grid	Key-sheet	Active	Assigned SSA	Date Removed	End of Post-Elimination Monitoring	Notes
Croydon Rd	Off Liberty Road	106	33C04	LNE	No	83-23-03-01	7/2/2015	1/2/2017	Post-elimination flow monitoring underway
Overbrook & Banbury	748 Overbrook Road	36	27E11	NSW	No	33-16-10-00	7/2/2015	1/2/2017	Post-elimination flow monitoring underway
Anneslie Rd	740 Anneslie Road	37	27D11	NSW	No	33-16-10-00	7/2/2015	1/2/2017	Post-elimination flow monitoring underway
Abbie Place	Subet & Abbie Place	20	33A02	LNE	No	83-28-02-00	6/29/2016	12/29/2017	CD Elimination Deadline 9/20/2016; Post-elimination flow monitoring underway
Bagley Ave	7845 Bagely Ave.	130	28D11	NSE	No	01-05-31-02	6/14/2016	12/14/2017	CD Elimination Deadline 6/30/2016; Post-construction flow monitoring underway
Alter Road	Alter Road & Southern Cross	22	33G02	KNW	Yes	83-06-05-07	On 9/3/2019, the County issued the notice to proceed for the Phase I construction project. Right-of-way and environmental permits are required for Phase II construction. (Powder Mill Interceptor Relief Sewer)		Original CD elimination deadline was 3/22/2017. Extension request, with undefined SSO elimination date submitted on 2/14/2017. Second time extension request with definitive SSO elimination date will be submitted after right-of-way acquisition, environmental permits obtained and construction notice to proceed is issued.
Southern Cross Dr	Southern Cross Drive & Parsons Avenue	23A	33G01	KNW	Yes	83-06-05-07			
Southern Cross	3909 Southern Cross Drive	23B	33G01	KNW	Yes	83-06-05-10			
Patterson Ave	3902 Patterson Avenue	24	33G03	KNW	Yes	83-06-05-03			
Aiken Avenue	7829 Aiken Ave Near Taylor	41	28A10	NSE	Yes	33-93-03-00	On 10/3/2019 the County awarded the construction		Original CD elimination deadline was 3/20/2018.



Name	Address	SSO ID	Grid	Key-sheet	Active	Assigned SSA	Date Removed	End of Post-Elimination Monitoring	Notes
Queen Anne Dr	Queen Anne Dr. @Hillcrest Ave.	129	28A10	NSE	Yes	33-92-00-00	project. (East Branch Herring Run Relief Sewer)		Extension request with undefined SSO elimination date submitted on 10/4/2017. Second time extension request with defined SSO elimination date will be submitted after County receives construction baseline schedule.
Marnat Rd	Marnat & Hatton Rd	113	25J11	OSW	Yes	45-10-22-01	Construction complete prior to 9/20/2016 Consent Decree deadline. City improvements required to eliminate SSO structures.		Original CD elimination deadline was 9/20/2016. Extension requests with undefined SSO elimination date submitted on 6/22/2016. Second time extension with a defined SSO elimination date will be submitted after the County receives from the City the proposed downstream sewer improvements and associated construction schedule. Continuing post-construction flow monitoring.
Nunnery Lane	North of Frederick Road	116	41G02	GNW	Yes	81-52-00-00			
Briarwood Rd	North of Frederick Rd	117	41G02	GNW	Yes	81-54-00-00			
Overbrook Rd	Overbrook Near Medwick Garth	118	41H02	GNW	Yes	81-50-01-00			



Attachment B – Flow Monitor Summary



Sewershed	Manhole ID	Comments
Dead Run	3838	Westhills Pkwy
Dead Run	8666	Dogwood Rd (Flo-Dar)
Dead Run	10632	Charring Cross
Dead Run	18080	Tallow Ct
Dead Run	21472	Craigmont
Dead Run	30666	Glen Spring
Dead Run	30669	Rolling Rd
Dead Run	45442	Parallel Dr
Dead Run	901956	Moorehead Rd.
Dead Run	8670	
Dead Run	13314	
Dead Run	15239	
Dead Run	15247	
Dead Run	8675	
Dead Run	8686	
Dead Run	18054	
Dead Run	17330	
Dead Run	17324	
Dead Run	41070	
Dead Run	23207	
Dead Run	10230	
Dead Run	18074	
Dead Run	30667	
Dead Run	18081	
Dead Run	57869	
Essex	3216	
Gwynns Falls	9010	Abbie Pl.
Gwynns Falls	10954	Montbel
Gwynns Falls	11060	Southern Cross Dr. @ Alter
Gwynns Falls	16432	Patterson
Gwynns Falls	16837	Southern Cross "A" U/S
Gwynns Falls	17280	Croydon Rd.
Gwynns Falls	17802	Southern Cross "A" live
Gwynns Falls	19152	Kelox @ Talles
Gwynns Falls	31241	Pembroke Rd
Gwynns Falls	47179	Purnell Dr
Gwynns Falls	71240	Sussex Rd @ Liberty Rd
Gwynns Falls	901891	Southern Cross Dr. "B"
Gwynns Falls	8070 city	Northern Pkwy @ Liberty Rd
Herring Run	694	Queen Anne & Hillcrest
Herring Run	722	Banbury
Herring Run	726	Anneslie Rd.
Herring Run	6566	Perring Pkwy
Herring Run	6572	Intcpt @ Raq club
Herring Run	6584	Berrywood 12"
Herring Run	11481	Aiken Ave.
Herring Run	32117	Falkirk
Herring Run	32927	Intcpt S. of Taylor



Sewershed	Manhole ID	Comments
Herring Run	71591	Walker Ave
Jones Falls	793	Marnet SSO
Jones Falls	2403	Charles St. Ave
Jones Falls	6883	Jones Falls Interceptor
Jones Falls	7289	Gerard Ave
Jones Falls	9862	Northbrook & Hatton
Jones Falls	9863	Slade & Northbrook
Jones Falls	16379	Jones Falls Interceptor
Jones Falls	43819	Joppa Rd
Jones Falls	44223	Falls Rd, RO Valley Inn
Longquarter	12292	Medbury
Longquarter	45483	Shetland Hills
Patapsco	1335	IFO 12 Dutton Ct
Patapsco	1396	Southwest Blvd at MARC station
Patapsco	3374	IFO 1309 Elm Ave
Patapsco	3454	IFO 1308 Midvale Ave
Patapsco	6330	Patapsco S.P. Closest to the stream
Patapsco	8435	IFO 5601 Ashbourne
Patapsco	8959	IFO 2610 Willow Ave
Patapsco	9725	Parking Lot @ 5820 SW Blvd
Patapsco	10141	New York & Baltimore ST
Patapsco	12881	Michigan & Baltimore North
Patapsco	12883	Vermont & Baltimore
Patapsco	13969	R/O 1011 Linden Ave
Patapsco	15064	BGE R/W off Hammonds Ferry Rd
Patapsco	15963	Oak Forest PS
Patapsco	18569	Oella Ave & Waters Ave
Patapsco	34917	R/W South of Cedar Ave
Patapsco	39362	Inwood Shop storage lot
Patapsco	49168	Patapsco S.P. Fartherest from the stream (Flo-Dar)
Patapsco	63915	Patapsco SP (Herbert Run)
Patapsco	900335	IFO 5625 Ashbourne
Rehouse Run	38847	Chesaco Park PS
Stemmers Run	2149	Daniels Rd R/W
Stemmers Run	17620	Daniels Rd R/W
Stemmers Run	23123	End Of Essex
Stemmers Run	72137	Garnet Rd R/W
Stemmers Run	72138	Garnet Rd R/W
Stemmers Run	902030	Dubois Ave
Texas	29635	
Texas	38747	
Texas	38002	
Texas	36713	
Texas	48822	
Texas	35448	
West Low Level	296	Edmondson Ave
West Low Level	347	Hillside Rd



Sewershed	Manhole ID	Comments
West Low Level	352	Edmondson Ridge Rd
West Low Level	371	Overbrook Rd. @ Medwick Garth U/S
West Low Level	410	Frederick Rd @ Nunnery Ln
West Low Level	7368	Nunnery Ln. U/S
West Low Level	7783	Woodlawn Ave
West Low Level	7792	Stoney Lane
West Low Level	34894	Edmonson Ave.
West Low Level	902029	Briarwood Alley
West Low Level	902029	Briarwood Alley
West Low Level	22346	
West Low Level	275	
West Low Level	9860	
West Low Level	352	
West Low Level	8059	
West Low Level	7790	
West Low Level	18635	



Attachment C – List of Illegal Stormwater Discharges



**Illegal Stormwater Discharges
Discovered During Inspection Process**

Date of Observation	Sewer ID	Street	Problem Description	Repair Date
01/04/19	1269-1268	N BEECHWOOD AVE	CLEAN OUT CAP; MISSING	02/18/20
01/04/19	1284-1269	N BEECHWOOD AVE	STORM DRAIN; INLET	02/18/20
01/04/19	1290-1287	N BEECHWOOD AVE	CLEAN OUT CAP; MISSING	02/18/20
01/04/19	17495-17494	N BEECHWOOD AVE	STAND PIPE; PIPE	02/18/20
06/14/19	10646-10645	WHITLOCK RD	REPLACE CLEAN OUT CAP	07/18/19
06/14/19	10646-10645	WHITLOCK RD	CLEAN OUT CAP; BROKEN NUT	02/20/20
05/29/19	3838-TCM14	WEST HILLS PKWY	STAND PIPE; FERRULE	02/18/20
05/29/19	3837-3836	WEST HILLS PKWY	CLEAN OUT CAP; BROKEN NUT	02/18/20
05/29/19	10638-10634	WEST HILLS PKWY	STAND PIPE; FERRULE	02/18/20
05/29/19	10646-10645	WEST HILLS PKWY	CLEAN OUT CAP; BROKEN NUT	02/18/20
05/29/19	10645-10644	WEST HILLS PKWY	STAND PIPE; FERRULE	02/18/20
05/29/19	10637-10636	WEST HILLS PKWY	CLEAN OUT CAP; BROKEN NUT	02/18/20
05/29/19	10637-10636	WEST HILLS PKWY	CLEAN OUT CAP; BROKEN NUT	02/18/20
05/29/19	10636-10635	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
05/29/19	10632-14322	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
05/29/19	10649-10632	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
05/29/19	10649-10632	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
03/27/19	3838-TCM14	WEST HILLS PKWY	STAND PIPE; FERRULE	02/21/20
07/16/19	1269-1268	BEECHWOOD AVE	CLEAN OUT CAP; MISSING	02/21/20
05/29/19	10649-10632	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
05/29/19	3820-3819	WEST HILLS PKWY	STAND PIPE; FERRULE	02/18/20
05/29/19	3835-3836	WEST HILLS PKWY	CLEAN OUT CAP; MISSING	02/18/20
06/17/19	10637-10636	CHANNING RD	CLEAN OUT CAP; BROKEN NUT	02/20/20



Attachment D – List of Deficiencies found during the Inspection of Pumping Stations



Station	Sewershed	Date	Equipment	Problem	Nature of Repair	Completed date	Priority	Reason for Delay if Open>6 Months
Duck Creek	Duck Creek	1/2/2019	Generator	Generator won't start	Replaced batteries	1/14/2019	3	
White Marsh (New)	White Marsh	1/4/2019	VFD 4	VFD fault	Replaced VFD	2/28/2019	2	
Windlass	Stemmers Run	1/15/2019	Pump 3	Malfunctioning hacker valve	Replaced cylinder seals	2/27/2019	2	
Stemmers Run (New)	Stemmers Run	1/21/2019	Pump 1	Broken impeller and wear ring	Installed new impeller and wear rings	1/23/2019	2	
Gray Manor	Gray Manor	2/1/2019	Auxiliary suction #3	Coupling came off of shaft	Installed new motor	9/5/2019	2	Delay in ordering, manufacturer lead time and drawing approval
Gray Manor	Gray Manor	2/1/2019	Aux suction valve Pump 1	Cylinder needs replacement			2	New cylinder arrived but damaged during shipping. Waiting on replacement cylinder
West Inverness	Gray Manor	2/6/2019	Pump 2	Malfunctioning pressure ring	Removed air and added oil to pressure ring	2/10/2019	2	
Baurenschmidt	Duck Creek	2/7/2019	Pump 2	RAD clutch burned up	Will pull generator to site when station has a power failure.	2/28/2019	2	
Stemmers Run (New)	Stemmers Run	2/14/2019	Pump 4	Broken impeller	Replaced impeller and wear rings	2/19/2019	2	
Texas	Texas	2/26/2019	Surge Relief Valve	Clogged valve	Unchoked valve and adjusted	3/12/2019	2	
Windlass	Stemmers Run	2/27/2019	Pump 2	Malfunctioning hacker valve	Replaced cylinder seals	3/3/2019	2	
Texas	Texas	3/1/2019	Pump 5	VFD ground fault	Repaired pump	5/9/2019	2	
Cape May	Duck Creek	3/7/2019	Generator	Bad bearings	Will operate on automatic when there is a power failure	4/23/2019	2	
Dundalk	Dundalk	3/7/2019	Spare Pump	Shaft locked up	Repaired pump	8/1/2019	3	
Randallstown	Gwynns Falls	3/8/2019	Pump 2	Seal failure	Installed repaired pump and put back online	6/28/2019	3	
Masseth Avenue	Delmar	3/11/2019	Influent grinder	Shorted motor	Replaced motor	9/5/2019	2	



Station	Sewershed	Date	Equipment	Problem	Nature of Repair	Completed date	Priority	Reason for Delay if Open>6 Months
Forge Acres	Bird River	3/18/2019	Pump 1	Failed cone valve cylinder seal	Replaced seals	4/10/2019	2	
Temple Gate	Bread & Cheese	3/19/2019	Generator	Gas leak on piping feeding the generator	Repaired leak	3/20/2019	3	
Old Battle Grove	Gray Manor	4/6/2019	Pump 2	Pump won't stay running	Replaced VFD phase monitor	4/8/2019	3	
Forge Acres	Bird River	4/14/2019	Pump 3	Failed cone valve cylinder	Repaired cylinder	4/29/2019	2	
Corsica Road	Duck Creek	5/1/2019	Pump 2	Pump needs to be rebuilt	Repaired pump	8/1/2019	3	
Bear Creek	Gray Manor	5/3/2019	Generator	Primer leaking	Replaced fuel pump	5/9/2019	2	
Loveton Estates	Cockeysville	5/30/2019	Pump 2	Failed seal	Repaired pump	7/16/2019	3	
Red House Run	Red House Run	6/13/2019	Pump 1	Replace VFD	Replaced VFD	2/25/2020	2	Delay in ordering and manufacturer lead time
Orems Road	Orems	6/18/2019	Pump 2	Bad bearing	Repaired motor	8/12/2019	3	
Forge Acres	Bird River	6/28/2019	Cone Valve 1	Malfunctioning cone valve	Repaired valve and replaced cylinder seals	8/5/2019	3	
Stemmers Run (New)	Stemmers Run	7/1/2019	VFD 3	Replace VFD			2	VFD series is discontinued. Creating capital project
Red House Run	Red House Run	7/9/2019	VFD 3	Replace VFD	Replaced VFD	2/25/2020	2	Delay in ordering and manufacturer lead time
Beachwood Estates	Gray Manor	7/9/2019	Pump 2	Bad bearings	Repaired pump	9/11/2019	2	
Randallstown	Gwynns Falls	7/14/2019	Pump 2	Failed seal	Repaired pump	9/12/2019	3	
Ravens Complex	Gwynns Falls	8/11/2019	Pump 1	Not pumping to capacity	Repaired pump	9/18/2019	3	
Gray Manor	Gray Manor	8/28/2019	Emergency H/W tuning fork	Malfunctioning sensor and tuning fork	Replaced tuning fork	9/24/2019	2	



Station	Sewershed	Date	Equipment	Problem	Nature of Repair	Completed date	Priority	Reason for Delay if Open>6 Months
Ravens Complex	Gwynns Falls	8/31/2019	Primary controller	Replace controller	Replaced controller	9/4/2019	3	
Long Quarter	Long Quarter	9/15/2019	VFD 1	Faulting VFD	Installed new DMO board	10/4/2019	2	
Beachwood Estates	Gray Manor	11/3/2019	Pump 1	Bad bearings	Replaced pump	2/3/2020	2	
Millers Island	Delmar	11/4/2019	Pump 2	Replace VFD	Replaced VFD	11/13/2019	3	
Greenhill Cove	Gray Manor	11/4/2019	Generator	Gas leak	Repaired leak	11/6/2019	2	
Dundalk	Dundalk	11/5/2019	Pump 1	Seal failure			2	Repair shop is waiting on replacement parts from manufacturer
Orems Road	Orems	11/8/2019	Cone valve 3	Malfunctioning valve	Repaired leak	11/14/2019	2	
Greenhill Cove	Greenhill Cove	11/12/2019	Pump 1	Bad bearings	Repaired pump	1/7/2020	2	
Helena Avenue	Helena Avenue	11/12/2019	Generator	Radiator leaking	Replaced radiator	12/11/2019	2	
Hawthorne 1	Hawthorne 1	11/18/2019	Generator	Leaking radiator	Replaced radiator	12/17/2019	2	
Cedar Beach	Cedar Beach	11/18/2019	Generator	Leaking radiator	Replaced radiator	1/2/2020	2	
Gunpowder	Gunpowder	11/27/2019	VFD 4	Malfunctioning cooling fan	Replaced fan control card	12/11/2019	2	
Long Quarter	Long Quarter	12/3/2019	Pump 3 suction gate	Missing sealing gasket			2	In process of ordering a replacement sluice gate.
Long Quarter	Long Quarter	12/3/2019	Pump 3	Malfunctioning pressure ring			2	This can't be repaired until suction gate is repaired.
Stemmers Run (New)	Stemmers Run (New)	12/11/2019	Cone valve 4	Malfunctioning valve	Replaced PLC	12/12/2019	2	



Station	Sewershed	Date	Equipment	Problem	Nature of Repair	Completed date	Priority	Reason for Delay if Open>6 Months
Dundalk	Dundalk	12/13/2019	Pump 4	Failed seal			2	Pump was sent to repair shop
Long Quarter	Long Quarter	12/20/2019	Aux suction valve Pump 1	Malfunctioning positioner			2	Ordering new position indicator



The pump station deficiencies listed below were outstanding in the 2017 and 2018 Annual Reports. The repair status and/or reason for repair delay are provided below.

Station	Sewershed	Date	Equipment	Problem	Nature of Repair	Completed date	Priority	Reason for Delay if Open>6 Months
Old Stemmers Run	Stemmers Run	5/2/2017	Pump 1 VFD	Failed VFD	VFD section is blown up	2	2/28/19	VFD series is discontinued. Delay in ordering and installation replacement.
Old Stemmers Run	Stemmers Run	12/6/2017	Pump 2 VFD	Failed VFD	VFD output section is bad and soft start needs parts	2	2/28/19	VFD series is discontinued. Delay in ordering and installation replacement.
Gray Manor	Gray Manor	2/20/2018	Pump 3 VFD	Failed VFD	Replaced VFD	2	3/6/19	VFD series is discontinued. Delay in ordering and installation replacement.
Ravens Complex	Gwynns Falls	8/2/2018	Generator	Generator does not produce correct voltage under load	Replaced generator	3	1/23/19	
White Marsh (New)	White Marsh	9/19/2018	Pump 2	Sleeve spinning on shaft	Repaired shaft	2	5/9/19	The impellers had an 18-24-week lead time.
Kings Point	Gwynns Falls	9/22/2018	Pump 2	Pressure ring problem	Rebuilt pressure ring	2	6/4/19	Delay in finding the root cause of problem.
Stantonwood	Jones Falls	10/14/2018	Pump 2	Pump has seal failure	Repaired pump	2	2/8/19	Only explosion proof certified manufacturer could complete repair.
White Marsh (New)	White Marsh	12/7/2018	Pump 2	Multilin was removed and put into VFD 4	Replaced Multilin	2	4/16/19	Model is discontinued. Delay in ordering replacement.
Masseth Avenue	Delmar	12/29/2018	Pump 2	VFD is shorted	Replaced VFD	2	1/3/19	
Dundalk	Dundalk	12/29/2018	Pump 4	Will not rotate	Repaired pump	2	9/4/19	Delay in manufacturer lead time
Marlyn Avenue	Essex	12/29/2018	Pump 2	Will not rotate	Repaired pump	2	3/19/19	



Attachment E – Detail of Footage Inspected per 15.B.i.b



Paragraph 15.B.i (b): CCTV Inspection
Completion scheduled for September 20, 2020

Miles Remaining to be inspected Beginning of Year	Miles Inspected and/or Attempted this Year	Miles Attempted but not Completed to Date	Miles Remaining
7.5 ⁽¹⁾	5.4	2.0	2.1 ⁽²⁾
Appurtenances to be Inspected Beginning of Year	Appurtenances Inspected and/or Attempted this Year	Appurtenances Attempted but not Completed to Date	Appurtenances Remaining
93 ⁽¹⁾	74	40	19 ⁽²⁾

⁽¹⁾ From 2019 first Quarterly Report
⁽²⁾ From 2019 fourth Quarterly Report



Attachment F – Building Backups



Building Backups

ADDRESS	ZIP CODE	DATE	WORK ORDER	CAUSE	VOLUME
1205 WAKEFORD CIR	21239	7-Jan-19	20193675203	CLEANING	1
7397 EDSWORTH RD	21222	8-Jan-19	20193697701	DEFECTIVE PIPE	53.6
6206 HADDON AVE	21212	12-Jan-19	20193720201	ROOTS	465
1025 MARLEIGH CIR	21204	18-Jan-19	20193759601	GREASE	1072
3007 DELAWARE AVE	21227	20-Jan-19	20193765301	ROOTS	15
8704 SILVER KNOLL DR	21128	24-Jan-19	20193804701	GREASE	3397
6903 MORNINGTON RD	21222	29-Jan-19	20193848401	ROOTS	15
1866 YAKONA RD	21234	2-Feb-19	20193876501	ROOTS	28
2005 S HAWTHORNE RD	21220	7-Feb-19	20193954801	GREASE	12047
1230 KAHLER AVE	21237	12-Feb-19	20193986801	GREASE	1436
504 VIRGINIA AVE	21221	13-Feb-19	20194002602	UNKNOWN/OTHER	UNKNOWN ¹
814 HATHERLEIGH RD	21212	15-Feb-19	20194026001	DEFECTIVE PIPE	UNKNOWN ¹
6521 MAPLEWOOD RD	21212	16-Feb-19	20194027801	DEFECTIVE PIPE	236
7612 PARKWOOD RD	21222	24-Feb-19	20194073801	GREASE	993
1 HATHAWAY RD	21093	26-Feb-19	20195410601	CLEANING	2
6601 YORK RD	21212	28-Feb-19	20195410701	CLEANING	0.5
6608 LAUREL DR	21207	9-Mar-19	20194218401	ROOTS	8
8 ARTHUR AVE	21228	18-Mar-19	20194271305	CLEANING	1
2517 CREIGHTON AVE	21234	20-Mar-19	20195416901	CLEANING	1
8235 DEL HAVEN RD	21222	21-Mar-19	20194307401	DEBRIS	7
2413 WINDSOR RD	21234	21-Mar-19	20182234760	HIGH WATER	30
1723 HILLTOP AVE	21221	21-Mar-19	20194304101	GREASE	126
7335 BERKSHIRE RD	21224	21-Mar-19	20194307701	DEBRIS	UNKNOWN ¹
2415 WINDSOR RD	21234	21-Mar-19	20182234759	HIGH WATER	UNKNOWN ¹
8503 LA SALLE RD	21286	5-Apr-19	20194469101	GREASE	71
6105 HAMILTON AVE	21237	11-Apr-19	20194509103	CLEANING	233
6106 HAMILTON AVE	21237	11-Apr-19	20194509101	DEBRIS	1132
6909 HOMEWAY	21222	12-Apr-19	20194523401	ROOTS	31
1609 SAILAWAY CIR	21221	17-Apr-19	20194562901	DEBRIS	2
8414 WINANDS RD	21208	21-Apr-19	20194659601	RAGS	5
3417 OLD COURT RD	21208	23-Apr-19	20194687002	UNKNOWN/OTHER	23
5 MANOR PL	21237	29-Apr-19	20194720701	UNKNOWN/OTHER	11
1301 DORCHESTER AVE	21207	5-May-19	20194796301	ROOTS	5
3007 DELAWARE AVE	21227	5-May-19	20194796901	GREASE	15
7341 YORKTOWNE DR	21204	10-May-19	20194847901	CLEANING	2
5 MANOR PL	21237	11-May-19	20194854601	CLEANING	5
6507 MAPLEWOOD RD	21212	11-May-19	20194853101	GREASE	11175



ADDRESS	ZIP CODE	DATE	WORK ORDER	CAUSE	VOLUME
2917 EASTERN BLVD	21220	19-May-19	20194913601	DEBRIS	94
2919 BACK RIVER BRG	21220	19-May-19	20194913602	UNKNOWN/OTHER	UNKNOWN ¹
626 STEVENSON LN	21286	20-May-19	20194925201	ROOTS	1
6900 BELAIR RD	21206	28-May-19	20194981901	UNKNOWN/OTHER	UNKNOWN ¹
7938 32ND ST	21237	6-Jun-19	20195112801	ROOTS	UNKNOWN ¹
8202 SAGRAMORE RD	21237	13-Jun-19	20195163801	CLEANING	1.5
1330 REISTERSTOWN RD	21208	24-Jun-19	20195242701	STONES/ROCKS	97
4 EASTSHIP RD	21222	5-Jul-19	20195378701	ROOTS	15
6623 QUEENS FERRY RD	21239	5-Jul-19	20195377001	GREASE	UNKNOWN ¹
3001 TEXAS AVE	21234	11-Jul-19	20195435101	HIGH WATER	15
3013 TEXAS AVE	21234	11-Jul-19	20195427201	HIGH WATER	98
1821 WILDWOOD AVE	21234	11-Jul-19	20195426701	HIGH WATER	196
3101 TEXAS AVE	21234	11-Jul-19	20195426601	HIGH WATER	466
2601 IVY PL	21234	11-Jul-19	20195426901	HIGH WATER	10098
3017 TEXAS AVE	21234	11-Jul-19	20195427101	UNKNOWN/OTHER	UNKNOWN ¹
229 FALLSBROOK RD	21093	30-Jul-19	20195656901	CLEANING	0.5
8046 PHILADELPHIA RD	21237	1-Aug-19	20195657101	CLEANING	1
5533 WINDSOR MILL RD	21207	6-Aug-19	20195666501	ROOTS	36
4751 BELLE FORTE RD	21208	9-Aug-19	20195694901	GREASE	34
2912 LIBERTY PKWY	21222	9-Aug-19	20195692701	GREASE	47
4781 BONNIE BRAE RD	21208	9-Aug-19	20195694903	GREASE	67
6763 GRACELAND AVE	21224	13-Aug-19	20195711001	UNKNOWN/OTHER	15
1828 ABERDEEN RD	21234	15-Aug-19	20195735802	ROOTS	23
706 49TH ST	21224	20-Aug-19	20195730003	CLEANING	UNKNOWN ¹
511 ANNESLIE RD	21212	23-Aug-19	20195793401	RAGS	UNKNOWN ¹
519 ANNESLIE RD	21212	23-Aug-19	20195796101	RAGS	UNKNOWN ¹
518 ANNESLIE RD	21212	23-Aug-19	20195796201	RAGS	UNKNOWN ¹
35 ADMIRAL BLVD	21222	27-Aug-19	20195826801	GREASE	UNKNOWN ¹
39 ADMIRAL BLVD	21222	27-Aug-19	20195826901	GREASE	UNKNOWN ¹
10 QUAILS NEST CT	21236	30-Aug-19	20195951501	CLEANING	UNKNOWN ¹
815 GOUCHER BLVD	21286	27-Sep-19	20196075801	GREASE	87
2407 HAMMONDS FERRY RD	21227	28-Sep-19	20196082101	ROOTS	UNKNOWN ¹
2 WESTBURY RD	21093	29-Sep-19	20196083401	GREASE	UNKNOWN ¹
7579 WESTFIELD RD	21222	3-Oct-19	20196165101	GREASE	UNKNOWN ¹
1313 BIDDLE CT	21228	9-Oct-19	20196201401	ROOTS	UNKNOWN ¹
4155 GLEN PARK RD	21236	15-Oct-19	20196234701	GREASE	UNKNOWN ¹



ADDRESS	ZIP CODE	DATE	WORK ORDER	CAUSE	VOLUME
22 STILLWAY CT	21030	18-Oct-19	20196259701	GREASE	UNKNOWN ¹
20 STILLWAY CT	21030	19-Oct-19	20196261301	GREASE	UNKNOWN ¹
823 SCOTTS HILL DR	21208	28-Oct-19	20196324201	GREASE	UNKNOWN ¹
823 SCOTTS HILL DR	21208	28-Oct-19	20196324202	RAGS	UNKNOWN ¹
6722 BROOKMONT DR	21207	31-Oct-19	20196358902	HIGH WATER	UNKNOWN ¹
6003 UPDALE CT	21207	31-Oct-19	20196359101	HIGH WATER	UNKNOWN ¹
7107 WINDSOR MILL RD	21244	7-Nov-19	20196444901	UNKNOWN/OTHER	UNKNOWN ¹

(1) County not granted access to verify quantities.

