90b – Status of Implementation Actions Taken Pursuant to S4F.3.D

On August 19, 2016, Ecology modified the Phase I Permit to include Appendix 13 – Adaptive Management Requirements. Appendix 13 requires adaptive management response plans for discharges from the City of Seattle's (City) municipal separate stormwater system (MS4) to the Lower Duwamish Waterway (LDW). In accordance with S4.F.3 the City must comply with the specific requirements identified in Appendix 13. Per the requirement of S4.F.3.d, Seattle is providing the status of implementation and the results of any monitoring, assessment or evaluation efforts conducted during 2018 related to Appendix 13 Adaptive Management requirements.

This Annual Report combines the City's required source control activities for the LDW and related information related to these Adaptive Management Response Plans into one report. SPU provided Ecology with a Source Control Implementation Plan (SCIP) in March of 2015, and SPU has implemented the actions contained in the SCIP through August 2016. Beginning August 19, 2016, SPU has been implementing actions that Ecology has approved as an S4.F.3.b Adaptive Management Response Plan.

The following sections describe the actions that the City has taken to implement the adaptive management plan as described in Appendix 13 of the August 19, 2016, Phase I Municipal Stormwater Permit.

Background

An S4.F notification was submitted in 2007 to notify Ecology of potential water quality problems that may be related to discharges from the City's MS4 for the LDW. Ecology determined that a report under S4.F.2.a was not necessary, with that determination conditioned on certain City actions. Ecology required the City, beginning with its Phase I Permit Annual Report for 2008, to include a summary of its stormwater management efforts in basins that discharge to the LDW. The City was to notify Ecology if Seattle's involvement in federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and associated Source Control Strategy processes changed or new information became available regarding phthalate recontamination in the LDW.

An S4F notification was submitted on December 5, 2013, to notify Ecology of potential sediment quality problems that may be related to discharges from the City's MS4 for the LDW. Ecology accepted the notification (June 4, 2014) as a general notification for all MS4 discharges to the LDW for all LDW sediment chemicals of concern (COC). The City's draft SCIP (November 2013) fulfilled the City's requirement for submittal under S4.F.3.a of an expanded adaptive management response. The City revised the SCIP, and a final draft of the SCIP was submitted to Ecology on March 31, 2015.

Though not for the LDW or adaptive management, a S4F notification was submitted on September 5, 2014 to notify Ecology of potential sediment quality problems that may be related to discharges from the City's MS4 for the East Waterway (EW) of the Duwamish Waterway. To satisfy the permit requirements, the City continues to engage in business inspections, source tracing, line cleaning, and other programs regarding the EW, as well as ongoing source control efforts to support the EW CERCLA cleanup.

Appendix 13 - Adaptive Management Requirements Reporting

Source Tracing and Sampling Activities

SPU collects samples of storm drain solids from with the City MS4 to characterize the quality of material discharged to and from the City's drainage system. Samples include 1) grabs from private onsite catch basins and catch basins located in the public right-of-way, 2) grabs from inline maintenance holes in the conveyance system, and 3) inline sediment trap samples. Data generated from these samples are used to identify potential contaminant sources and to prioritize source tracing/control activities. Between January and December 2018, SPU collected 72 samples of storm drain solids from the City's MS4.

SPU has received funding from Ecology to investigate, experiment and develop new tools to help SPU and others conduct source control. These projects (detection dog and sediment trap pilot tests) are not required by the Phase I permit but are part of the City's SCIP.

Detection dog pilot test

The University of Washington Conservation Canine Program successfully trained a detection dog (Sampson) to identify PCBs in industrial areas. Work was conducted under a Stormwater Financial Assistance Program Grant WQC-2015-SeaPUD-00196 with Ecology and was completed in 2017[1]. Sampson was able to quickly and effectively screen large areas on industrial sites to find sources of PCBs. Sampson was able to detect PCBs in a variety of media types during field testing. He was particularly effective at identifying PCB-contaminated caulk/paint on buildings.

PCBs monitoring is not a requirement of the City's NPDES MS4 permit, but the detection dog aids in permit required activities such as source control. The detection dog can screen an area for PCBs in an afternoon and help pin point potential sources of PCBs so that SPU inspectors can work with private parties to implement best management practices to prevent the PCBs from entering the environment.

The final report describing the pilot test results was submitted to Ecology in October 2017. SPU considers the pilot study a success.

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[1] Windward and University of Washington. 2017. PCB detection dog pilot study data report, final. Prepared for Seattle Public Utilities by Windward Environmental LLC in consultation with University of Washington Center for Conservation Biology, Conservation Canine, Seattle, WA.

In 2018, SPU obtained another Stormwater Financial Assistance Grant from Ecology (WQC-2018-SeaPUD-00233) to continuing SPU's work with UW Conservation Canines. Work in 2019 will involve training an additional detection dog and developing protocols for incorporating detection dog services into SPU's source tracing efforts.

Sediment trap pilot test

While not a specific requirement of Appendix 13, SPU has been testing a new sediment trap design to provide more effective collection of storm drain solids to support source tracing efforts that are required by Appendix 13. Work has been supported by an Ecology grant. In 2018, SPU continued field testing two prototype designs at two locations in the LDW (S Myrtle St and Diagonal Ave S CSO/SD storm drain systems). Results of the 2018 testing were presented in a progress report to Ecology[2].

Effectiveness Monitoring Program

SPU is on track to install or collect one sample per calendar year from each outfall and near-end-of-pipe location in Tables 1 and 2 of Appendix 13. Source tracing data collected from January through December 2018 are provided in Attachment A of this report and will be loaded into EIM[3].

Business Inspection Program

In support of the LDW cleanup efforts, multi-media inspections are conducted, which cover stormwater pollution prevention compliance and triage for referrals for hazardous waste management and industrial waste management. In 2018, SPU conducted 226 inspections in the LDW. Each business is inspected for compliance with the City's Stormwater Code and required to be brought into compliance with all relevant best management practices (BMP) for stormwater pollution prevention. The inspections resulted in 107 Corrective Action Letters, and four of these sites were referred to Ecology for potential NPDES Industrial Stormwater permit coverage. Seven facilities were issued NOV's for non-compliance with the City's Stormwater Code.

The SCIP described several planned enhancements to streamline the business inspection program in the LDW. The status of these efforts is provided in the following sections.

Shortened business compliance period

Seattle Public Utilities continues to seek ways to most effectively require that businesses come into compliance and remain in compliance. In January 2016, SPU Source Control conducted a Kaizen (Japanese for "improvement') workshop to improve the stormwater code compliance inspection processes and improve our customers' experience. The Kaizen

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[2] SPU. 2019. Sediment trap pilot project: field testing results. Seattle Public Utilities, Seattle, WA.

[3] Results for samples collected and validated since the 2018 annual report.

event was a 5-day workshop at which source control team members mapped out the current business inspection process, evaluated the process to identify waste steps and actions and ultimately, identify areas where a new process would improve efficiency. The goal was to accomplish these efficiency changes before implementing a mobile inspection data collection system. One of the inefficiencies that was identified in this Kaizen process was that inspected businesses with code violations were taking too long to return to compliance. Because of the workshop, SPU Source Control modified the business inspection process to reduce the return-to-compliance period by eliminating an unnecessary and time-wasting step, the "second and final letter."

Prior to the Kaizen workshop the Source Control inspection return-to-compliance process progressed through a series of inspections followed by compliance letters and ending with a closure letter whenever compliance was achieved in this process:

- Initial inspection
- Corrective action letter + 30 days
- Follow-up inspection
- Second and final letter + 15 days
- Follow-up inspection
- Notice of Violation with deferred penalty + 15 days
- Follow-up inspection (and penalty if still in non-compliance)
- Acknowledgement of Completion letter.

The typical return-to-compliance process was taking on average 55 days. Under the pre-Kaizen process, businesses would get a site inspection, a corrective action letter, a re-inspection and then a "second and final" letter, which provided additional time to come into compliance before a Notice of Violation is issued. Now, the Inspector uses additional messaging in person during the inspection about the timeline for the process and a business has 30 days to come into compliance after receiving the corrective action letter, and if the corrections are not made, a Notice of Violation is issued. Extensions may be issued on a case by case basis. This change has resulted in a reduction of process time, allowing SPU to inspect more businesses.

SPU also has implemented a procedure whereby if a business has been inspected multiple times, it can be immediately issued a Notice of Violation for not maintaining best management practices between inspection cycles. Elimination of the "second and final letter" step requires less time to re-inspect, write letters, and input data. This move is intended to impress upon businesses the importance of maintaining stormwater best management practices, rather than implementing them just for an inspection period and should shorten future inspection cycles. At the closing of an inspection cycle, businesses are alerted that they may be issued a Notice of Violation immediately upon the next inspection if compliance is not sustained. This process is used on a case by case basis, for businesses that SPU has inspected multiple times with no sustained improvement between inspection cycles.

Following the Kaizen event, the new inspection protocol implemented is as follows;

- Initial inspection
- Corrective action letter + 30 days
- Follow-up inspection
- Notice of violation with deferred penalty + 15 days
- Follow-up inspection (and penalty if still in non-compliance)
- Acknowledgement of Completion letter.

Revisions to Business Inspection Information Gathering Protocols

For many years, the SPU Source Control Team had used a lengthy inspection checklist that covered not only City Stormwater Code compliance but included multimedia inspection observations for compliance with air, hazardous waste, and industrial waste regulations. The data were recorded on the inspection checklist and entered into the SPU inspection database. Data collection could be time consuming and cause confusion about the specific authority of SPU regarding City source control measures required by City code. Referrals from these observations were made to state, county, and regional agencies with code authority. Indication from other agencies is that they rarely used the data collected in the SPU inspection process. To improve efficiency with the inspection process, SPU decided in 2017 that the data entry for these Non-City Stormwater Code violations would be discontinued. Inspectors still act as a "triage" for other agencies (King County Industrial Waste and Ecology Hazardous Waste and Water Quality); as part of "triage," the inspector may refer issues or problem sites to another agency for follow up and will be part of that agency's enforcement activity for resolving the issue. These changes have helped to shorten SPU's inspection time onsite, without compromising the integrity of the inspection and still providing important compliance information to other partner agencies.

Transition to Electronic Information Collection

SPU has used paper inspection forms and two Microsoft Access databases to track business inspections, stormwater facility inspections, water quality complaints and spills since 2003. These databases are near the end of their useful life, and mobile devices such as cellular telephones and tablets have made a paper-based inspection system obsolete.

SPU conducted a Kaizen event in 2016 to identify ways that the Source Control Team could become more efficient and develop a team culture that supports continuous improvement.

A focus of the Kaizen event was to map out the team's process so that business requirements could be developed. The business requirements formed the basis of a SPU business case document that authorized funding and resources to develop a replacement database and mobile solution.

SPU has completed the design and build of the replacement database. The database was "live" on July 31, 2018 and the Source Control Team has been using and adjusting the database since that time.

Effectiveness Evaluation of the Enhanced Business Inspection Program

SPU submitted a final report to Ecology on July 18, 2018 to meet the Appendix 13 requirement to develop and implement the following Business Inspection Program Enhancements no later than July 31, 2018. Below is a brief summary of the findings of the evaluation.

In January 2016, Seattle Public Utilities (SPU) used the Kaizen process to bring businesses into compliance more quickly and efficiently. These changes were part of SPU's efforts to develop an enhanced program for source control inspections of businesses to meet NPDES permit requirements (Appendix 13) established by the Washington Department of Ecology. The business inspection team conducted a one-week Kaizen event, facilitated by OfficeRocket, a consulting organization, in which the team worked together to identify goals for the process transformation, barriers to efficiency, opportunities for improvement, and a plan to implement improvements. In 2018, SPU commissioned Cascadia Consulting Group to conduct an independent evaluation of the program regarding whether the Kaizen process met its goals of improving effectiveness of SPU's source control program.

Based on an analysis of inspection data, the changes have substantially improved the effectiveness of SPU's source control business inspection program.

The median time that businesses take to come into compliance has decreased substantially from 61 days before the event to 36 days after the program changes.

After the Kaizen event, 44% of inspection cases that required corrective actions came into compliance within 30 days, compared to 11% before.

- In addition, 75% of these cases the event came into compliance within 60 days, compared to 50% before the Lean transformation.
- The percentage of corrective action cases that were not corrected within 90 days decreased from 27% to 13% after the changes.

Based on interviews with program management and staff, the most important changes contributing to these improvements were that the program:

- Created a new Corrected Closing procedure to correct certain issues immediately onsite during the initial inspection and sending a Corrected Closing letter noting the correction. At least three-quarters of Corrected Closings recorded in the database were related to signing up businesses to receive a free spill kit, plan, or training from an SPU contractor. This efficiency saved a re-inspection to the business to verify things like spill kit drop off or a dumpster lid being closed.
- Removed the 2nd and Final warning letter before issuing a Notice of Violation. Previously, businesses were told they would receive a warning if they did not come into compliance within 30 days; now businesses are told they will receive a notice of violation if they do not come into compliance within 30 days. As an alternative,

inspectors can provide extensions to businesses that are demonstrably making progress on their corrective actions but will not come into compliance within 30 days. After the event, 14% of cases requiring corrective action received extensions, compared to 17% who received 2nd and Final warning letters before.
- Improved messaging and letter templates were developed to use common talking points with businesses during inspections and in follow-up letters so that businesses received consistent messaging from the Source Control Team.

Other efficiencies that contributed to program success included:

- Getting smartphones to schedule inspections from the field and access email and inspection related inspection information from the field
- Moving to a field facility and being co-located with other Source Control Division teams.

Some key challenges with the process changes and related program changes identified by program management and staff included:

- Limited management availability during and after the process due to management transitions in 2016 and staff relocation to the Ballard location.
- Lack of staff time available to spend time on continuous improvement, a key element of Kaizen implementation, in part due to not being fully staffed.
- Staff dissatisfaction with stand-up meetings due to lack of clarity regarding their purpose, amount of time required to conduct them, and perception that they occurred too frequently.
- Inspector dissatisfaction with the length and structure of the inspection checklist form, lack of clarity regarding what information the regulatory staff require inspectors to collect, and concerns that these issues will remain in the electronic form associated with the new database.

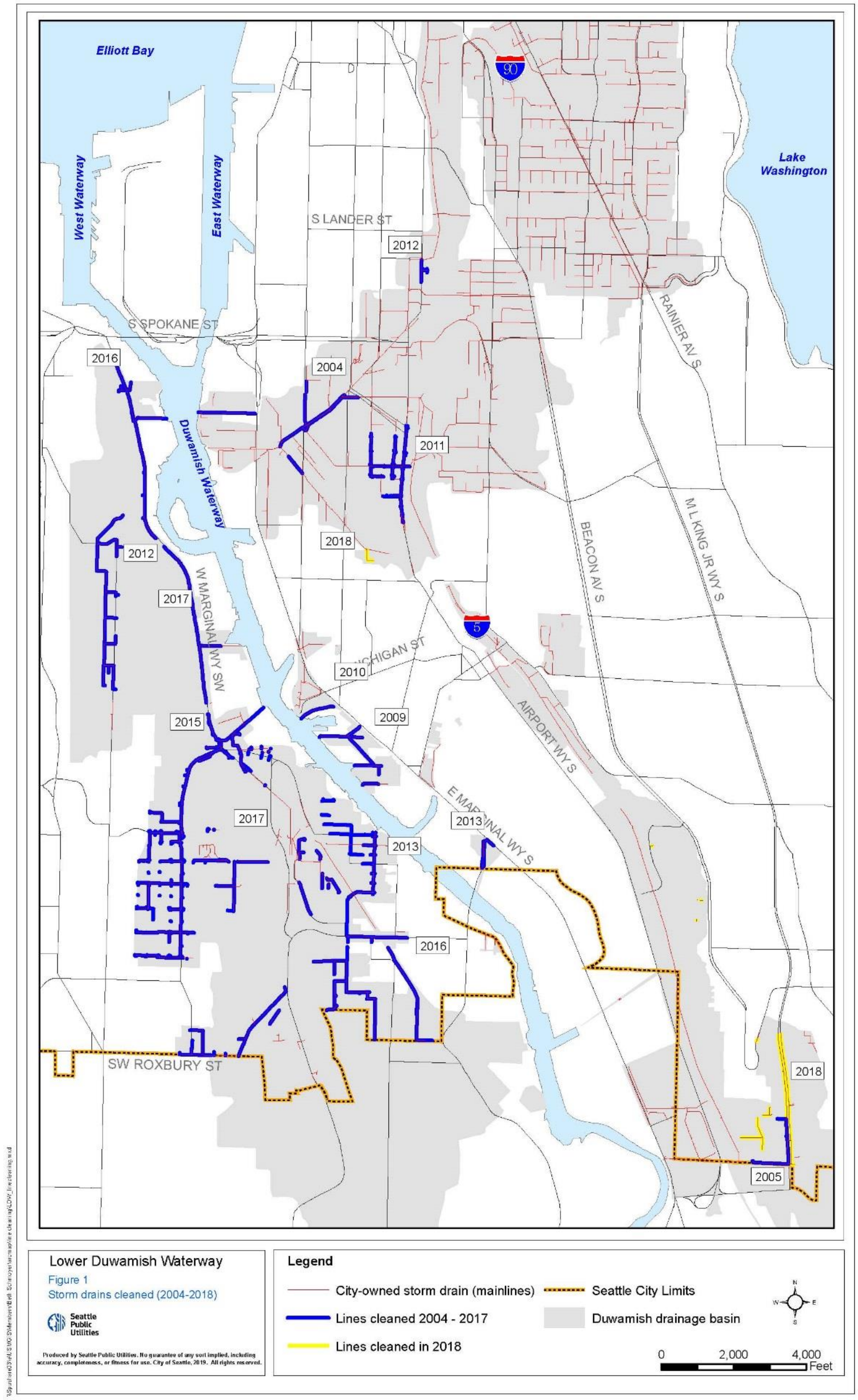
Based on manager and staff interviews, some key potential future changes to consider include:

- Dedicating time in staff work plans to process improvements and increasing recognition for staff who identify and implement changes.
- Creating and clearly communicating management support for an easy and flexible way for staff to request and make changes throughout the year as staff identify opportunities for improvement.
- Having the Program Manager accompany inspectors more regularly to learn more about their work in the field and increase visible Manager presence.
- Identifying options for improving messaging in Notice of Violation letters and for streamlining and accelerating their review.

Operations & Maintenance

In 2018, SPU cleaned approximately 11,500 linear feet of pipe in the MLK Wy Jr sub-basin of the S Norfolk CSO/EOF/SD drainage system, and 500 linear feet of pipe in the Diagonal

Ave S CSO/SD system (Figure 1). Both basins were identified as priority basins in the City's 2015 SCIP. SPU has identified and controlled several sources in the Norfolk system, but it continues to exhibit elevated levels of PAHs. The line was cleaned to facilitate future source tracing activities. The short segment in the Diagonal Ave CSO/SD was cleaned to remove PCB- (1,413 ug/kg dw) and arsenic-contaminated (123 mg/kg) material that was found during routine source tracing sampling. This work is conducted to remove solids that have accumulated in the MS4, in order to prevent them from discharging into the LDW and to facilitate source tracing efforts. Water generated during line cleaning operations was treated and discharged to the sanitary sewer under a discharge authorization with King County. Solids were dewatered and transported to Waste Management's reload facility in Seattle, for eventual disposal.



Elliott Bay
West Waterway
East Waterway
Lake Washington
S LANDER ST
2012
S SPOKANE ST
2016
2004
Duwamish Waterway
2011
RAINIER AV S
M L KING JR WY S
BEACON AV S
2018
2012
2017
W MARGINAL WY SW
90
5
2010
2009
AIRPORT WY S
2015
2017
2013
2013
2016
SW ROXBURY ST
2018
2005
Lower Duwamish Waterway
Figure 1
Storm drains cleaned (2004-2018)
Seattle Public Utilities
Produced by Seattle Public Utilities. No guarantee of any sort implied, including accuracy, completeness, or fitness for use. City of Seattle, 2019. All rights reserved.
Legend
City-owned storm drain (mainlines)
Lines cleaned 2004 - 2017
Lines cleaned in 2018
Seattle City Limits
Duwamish drainage basin
0
2,000
4,000
Feet

Operation and Maintenance for Duwamish Source Control Needs

SPU conducted an evaluation of existing operation and maintenance work for catch basin and flow control/water quality facilities in the MS4 basins that discharge to the LDW to determine if programmatic strategies could be implemented to assist with Source Control. The evaluation was delivered to Ecology in February 2018 (180 days prior to the expiration date of the permit).

The results of this evaluation are that SPU will continue with the current approach to inspection and maintenance of catch basins owned or operated by the permittee. The schedule will be to inspect all catch basin annually, and to perform maintenance as needed within 6 months. The performance target is the target contained in the permit under S5.C.9.d.iii: inspect all catch basins and achieve at least 95% of required inspections.

SPU will continue with the current approach to annual inspection and maintenance of stormwater facilities owned and operated by the permittee. The performance target is the target contained in the permit under S5.C.9.c iii: inspect all sites and achieve at least 95% of required inspections.

SPU will continue with the current approach to line cleaning in the Lower Duwamish SCIP basins as detailed in Section 7 of the 2015-2020 Source Control Implementation plan, which is designed to clean a minimum of 4,000 linear feet of storm drain line each year. SPU will be working to establish consistent preventative maintenance (PM) frequencies as part of the refinements to planning and scheduling associated with the line cleaning program in the Lower Duwamish Waterway. SPU will hold an annual meeting between the Source Control Team and the Drainage and Wastewater Maintenance team to coordinate line cleaning efforts between contracted crews and SPU crews.

Identification and Prioritization of Priority Capital Projects to Improve Roadway Surfaces in the LDW MS4 Basins

For the entire City, a key element for identifying locations for roadway surface improvement is pavement condition. SDOT evaluates arterial road conditions once every three years based on ASTMD standards. The most recent pavement condition inventory for both arterial and non-arterial roads was completed in 2018 and evaluated nearly 100% of the roadways in the City. Most of SDOT's pavement repair budget targets arterial streets.

SDOT has several programs aimed at maintenance and improvement of roadway surfaces throughout the City. SDOT has reviewed each program to identify relevant projects. Once a project is funded, it progresses through a series of milestones that lead up to construction. These milestones are planning start, design start, design (10%, 30%, 60%, 90%, 100%), bid advertisement, bid award, and construction start. The farther along the milestone path the project has progressed, the more certain the scope and schedule become.

SDOT has evaluated paving programs and identified funded priority pavement improvement projects within the Lower Duwamish drainage basins. These projects are described below.

Move Seattle

In 2015 Seattle voters passed the Move Seattle nine-year, $930 million property tax levy which is a significant source of funding for the transportation budget. This levy replaces funds previously obtained from the Bridging the Gap levy that helped fund SDOT between 2006 and 2015. The Move Seattle funds support on-going pavement maintenance and corridor improvement projects. The Move Seattle 10-year Strategic Vision for Transportation set forth methods for identifying streets as priority corridors for investment and ranking projects proposed for these corridors. The Move Seattle methodology used several factors including leveraging opportunities, funding availability, community support, SDOT's existing commitments, geographic equity, and avoidance of major maintenance to prioritize capital projects. SDOT has identified the Move Seattle priority projects, listed by project type below, that are located within the Lower Duwamish drainage basins and can reduce pollutants in the roadway runoff and/or improve the effectiveness of operational BMPs.

Corridor Projects

Corridor projects install a suite of improvements within a specific geographic area. These improvements can focus on bike facilities, safety improvements, utility upgrades, providing greenways, traffic revisions, transit lanes, and freight corridors, but they also frequently include pavement improvements.

23rd Avenue Phase II

This project will repave 5,429 feet of roadway on 23rd Avenue between South Jackson Street and Rainier Avenue South. SDOT will mill and overlay asphalt portions of the roadway, install concrete on selected portions of the roadway and repair the roadway base where it has broken. The repaving will reduce the amount of sediment generated since the deteriorated portion of the roadway that produces sediment will be replaced and the renewed surface will reduce areas where sediment can accumulate. Twenty-Third Avenue is a road within the Diagonal Avenue S. combined sewer overflow (CSO)/storm drain (SD) Lower Duwamish drainage basin that SDOT sweeps to improve water quality. The renewed pavement surface will increase the effectiveness of the sweeping BMP. The project is currently 100% designed and ready to advertise for construction bids. It is scheduled to be completed by mid-2019.

23rd Avenue Phase I

The 23rd Phase I project repaved 2,770 feet of roadway on 23rd Avenue between Cherry and South Jackson Streets in 2017. This project was the first phase of the 23rd Avenue repaving and is located within the Diagonal Avenue S CSO/SD Lower Duwamish drainage basin. The anticipated sediment reduction results are the same as those described for the 23rd Avenue Phase II Project.

SPU Drainage Partnership -South Park

The project is a partnership with Seattle Public Utilities (SPU) that will rebuild priority roads and stormwater conveyance to direct stormwater to a planned pump station and water quality treatment facility. The project is located within the 7th Avenue S SD and the 2nd Avenue S SD Lower Duwamish drainage basins.

Several roads in the proposed project area are in need of repair, the worst of which are deteriorated to the point that they produce sediment. SDOT will decide whether or not rebuilds will occur based upon several factors and considerations. SDOT is currently working with SPU to finalize which streets to rebuild based on the drainage improvement plan footprint, the technical feasibility, the cost of the roadway improvements and available funding. The streets selected for rebuilding are located near the 1,880 linear foot portion of South Portland Street that SDOT rebuilt in 2015 for $3.4 M. As with the Portland Street rebuild, the South Park Partnership project is expected to significantly reduce the quantity of solids generated from the roadway and entering the roadway runoff.

SDOT has allocated $10M for the rebuild of arterial and non-arterial roadways for the South Park project. The current milestone status for this project is 10% design. The SDOT goal is to complete the South Park road improvements by the end of 2022. This schedule and actual completion of this project are subject to change based on the identification of the needed drainage improvements, changes in scope identified during the design process, SPU/SDOT project delivery decisions, technical feasibility and other competing City priorities. At this time the paving for the SPU/SDOT partnership is expected to cover approximately 3,100 linear feet of roadway.

Arterial Asphalt and Concrete Program (AAC)

This on-going program rehabilitates major arterials. The Move Seattle Levy funds are expected to repave up to 180 lane-miles of arterial streets, maintaining and modernizing 35% of Seattle's busiest streets carrying the most people and goods, over nine years. For 2016-2024, the arterials where SDOT plans AAC projects have been identified based upon pavement condition, traffic volume, use of the roadway, geographic equity, social justice equity, coordination with utility partners (SPU, SCL) and funding leverage (grants). Three of the projects are within the Diagonal Avenue S. CSO/SD Lower Duwamish drainage basin. Schedule and actual completion of particular projects is subject to change depending on project scope adjustments and funding.

The projects will mill and overlay asphalt portions of the roadway, install concrete on selected portions of the roadway and repair of the roadway base where it has broken. The repaving will reduce the amount of sediment generated since the deteriorated portion of the roadway that produces sediment will be replaced and the renewed surface will reduce areas where sediment can accumulate. The projects are located on streets that SDOT sweeps to improve water quality. The renewed pavement surface will increase the effectiveness of the sweeping BMP. Details of the projects are listed below.

AAC-Dearborn

The project repaved approximately 2,000 feet of roadway located on South Dearborn Street from the Interstate-5 Dearborn offramp to Rainier Avenue South. The project was completed in December 2018.

AAC- 15th Avenue S, S Spokane Street and Columbian Way

The project will repave approximately 5,200 feet of roadway located on 15th Avenue S between South Spokane Street and S Angeline St; S Spokane St between Columbian Way and Beacon Ave S; and. Columbian Way between 14th Ave S and 15th Avenue S. . The current milestone status for this project is 30% design, and the scheduled completion date is June 2021.

Rapid Ride Corridor-Rainier /Jackson AAC Portion

The project will repave 2,775 feet of roadway on Rainier Avenue South between South Dearborn and South Massachusetts Streets. The current milestone status of this project is Planning Start, and the projected completion date is April 2022.

Additional Paving Programs

In addition to the capital project programs discussed above, SDOT operates paving programs that are implemented by SDOT's in-house crews and a micro-surfacing program that is normally scheduled each summer if funds are available. Schedule and actual completion of particular projects depend upon funding, project scopes, and competing work priorities. In 2018 SDOT completed approximately 54,800 square feet of crew-led roadway improvements. Due to budget constraints, micro-surfacing was not completed in 2018, however approximately 44 lane miles is scheduled to be completed in 2019. The projects were located within in the 1st Ave S SD, the Highland Park Way SW SD, the 7th Avenue S SD, SW Idaho SD, and the Diagonal Avenue S SD/CSO lower Duwamish basins. The programs are described below.

Micro-surfacing

Micro-surfacing, the application of a protective seal coat to extend pavement life, has been an on-going program managed by SDOT's Capital Project Division since 2014. The streets chosen for micro-surfacing are selected based on pavement age, pavement maintenance history and inspection results from Maintenance Operations Division. They are mostly low-volume, non-arterial streets.

Arterial Major Maintenance (AMM)

This is a program implemented by SDOT in-house Maintenance Operation crews. The program typically has funds to repair approximately 8 lane miles per year at about 65 targeted locations. The jobs typically consist of one to three blocks of mill and overlay or replacement of eight to ten concrete panels. No project exceeding $120,000 in value can be constructed by crews, so only projects that do not trigger drainage improvements per Seattle Stormwater Code are undertaken. About 65% of work is planned about a year in advance, the remainder is complaint-driven. For the planned portion of AMM projects there are several areas that are repaired annually because they fail repeatedly but have not been upgraded by an AAC project. AMM priority locations are near schools, hospitals, or bike routes or in an area where the work can be combined with other City departments. As much as 35% of the AMM budget is spent constructing ramps for ADA compliance.

Non-Arterial Street Resurfacing and Restoration (NASRR)

This is a program operated in the same manner as the AMM program except that the streets repaired are non-arterials. This is the only SDOT maintenance program that addresses pavement conditions on non-arterials, and its budget covers about 2 lane-miles per year.

Pothole Repair

Maintaining safe roadways is the main priority of the pothole repair program. The locations of the pothole repairs are based on public complaints. According to the Maintenance Operation personnel who implement the program, the Greater Duwamish area may have a higher pothole repair rate because freight trucks tend to break up roads.

Chip Sealing

SDOT no longer has a chip sealing program. The last chip sealing was performed in 2013. Going forward chip sealing will not be used to improve pavement surfaces in the Lower Duwamish storm drainage basins.

Report on weekly sweeping of S. Myrtle St.

S. Myrtle St. was swept by SDOT 43 times in 2018 as part the Street Sweeping for Water Quality Program (SS4WQ).

Report on quarterly inspection of catch basins and maintenance holes on S. Myrtle St.

SPU conducted quarterly inspections of catch basins and mainline maintenance holes from 2011 – 2018.

The data for catch basin and mainline maintenance hole measurements from 2011 to 2018 are provided in Table 1. Measurement locations on shown on Figure 2. The data from 2011 to 2017 were evaluated as part of the evaluation of existing operation and maintenance work for catch basin and flow control/water quality facilities in the MS4 basins that discharge to the LDW, to determine if programmatic strategies could be implemented to assist with Source Control. The evaluation determined that the catch basins on S. Myrtle Street accumulate solids or require maintenance similar to those in the rest of the LDW MS4 basins. However, Per Ecology's direction, SPU will continue quarterly inspections of catch basins and mainline maintenance holes.

Table 1: S Myrtle St maintenance hole measurements.

EQNUM	576148	576126	576140	576158	576162	576145	576165	943593	599350	599353	599354
Location	S Myrtle St cul-de-sac, west	S Myrtle St cul-de-sac, north	north side S Myrtle St, west of SIM	south side S Myrtle St, west of SIM	south side S Myrtle St, east of SIM	S Myrtle St and Fox Ave S	south side S Myrtle St at 7th Ave S	north side S Myrtle St, east of SIM	S Myrtle St cul-de-sac	S Myrtle St at SIM	S Myrtle St at 7th Ave S
Type	CBL	CBL	CBL	CBL	CBL	CBL	CBL	CBL	MH	MH	MH
Outlet pipe size	8	8	8	8	8	8	8	8			
Casting Width	1'-4"	1'-4"	NA	1'-4"	1'-4"	1'-4"	1'-4"	1'-8"	NA	NA	NA
Casting Length	2'-7"	2'-7"	NA	2'-7"	2'-7"	2'-7"	2'-7"	2'-0"	NA	NA	NA
Structure Depth (ft)	6.45	7.90	NA	7.22	6.4	6.61	5.76	6.2	7.45	7.35	5.76
Sump Depth (ft)	3	2.4	2.6	2.4	2.9	2.9	2.5	2.3	NA	NA	NA
2011 percent full											
04/21/11	0%	0%	4%	0%	13%	3%	46%	11%	0%	0%	0%
07/14/11	0%	0%	3%	8%	29%	13%	1%	21%	0%	0%	0%
2012 percent full											
01/05/12	0%	1%	10%	11%	50%	13%	19%	27%	0%	0%	0%
06/22/12	1%	19%	11%	16%	57%	11%	41%	20%	0%	0%	0%
10/11/12	1%	9%	16%	27%	62%	14%	45%	27%	0%	0%	0%
2013 percent full											
02/11/13	9%	22%	22%	38%	69%	14%	53%	28%	0%	0%	0%
05/01/13	12%	24%	23%	48%	3%	23%	52%	33%	0%	0%	0%
10/28/13	2%	2%	29%	50%	8%	28%	49%	34%	0%	0%	0%
12/23/13	4%	5%	31%	58%	9%	17%	51%	29%	0%	0%	0%
2014 percent full											
03/14/14	4%	13%	30%	68%	19%	38%	49%	26%	0%	0%	0%
06/23/14	5%	15%	38%	73%	21%	27%	55%	37%	0%	0%	0%
09/29/14	6%	13%	42%	72%	22%	29%	55%	36%	0%	0%	0%
12/29/14	6%	15%	43%	81%	30%	28%	50%	36%	0%	0%	0%
2015 percent full											
03/27/15	7%	16%	43%	80%	33%	32%	53%	44%	0%	0%	0%
06/29/15	8%	17%	40%	2%	36%	32%	55%	41%	0%	0%	0%
09/22/15	10%	28%	50%	2%	37%	31%	0%	45%	0%	0%	0%
12/29/15	9%	15%	43%	12%	40%	39%	8%	37%	0%	0%	0%
2017 percent full											
02/22/17	14%	30%	56%	49%	63%	48%	34%	55%	0%	0%	0%
05/25/17	16%	30%	0%	5%	5%	45%	41%	0%	0%	0%	0%
08/17/17	20%	36%	0%	5%	0%	43%	38%	0%	0%	0%	0%
11/22/17	24%	38%	0%	14%	8%	48%	42%	0%	0%	0%	0%
2018 percent full											
03/12/18	20%	36%	1%	15%	4%	48%	38%	0%	0%	0%	0%
05/23/18	23%	37%	3%	21%	5%	28%	41%	-6%	0%	0%	0%
08/29/18	22%	40%	1%	24%	-1%	46%	33%	-5%	0%	0%	0%
12/07/18	23%	0%	13%	21%	8%	2%	20%	1%	0%	0%	0%
Times Exceeded Maintenance Threshold (60% full)	0 in 6 years	0 in 6 years	0 in 6 years	1 in 6 years	3 in 6 years	0 in 6 years	0 in 6 years	0 in 6 years	0 in 6 years	0 in 6 years	0 in 6 years

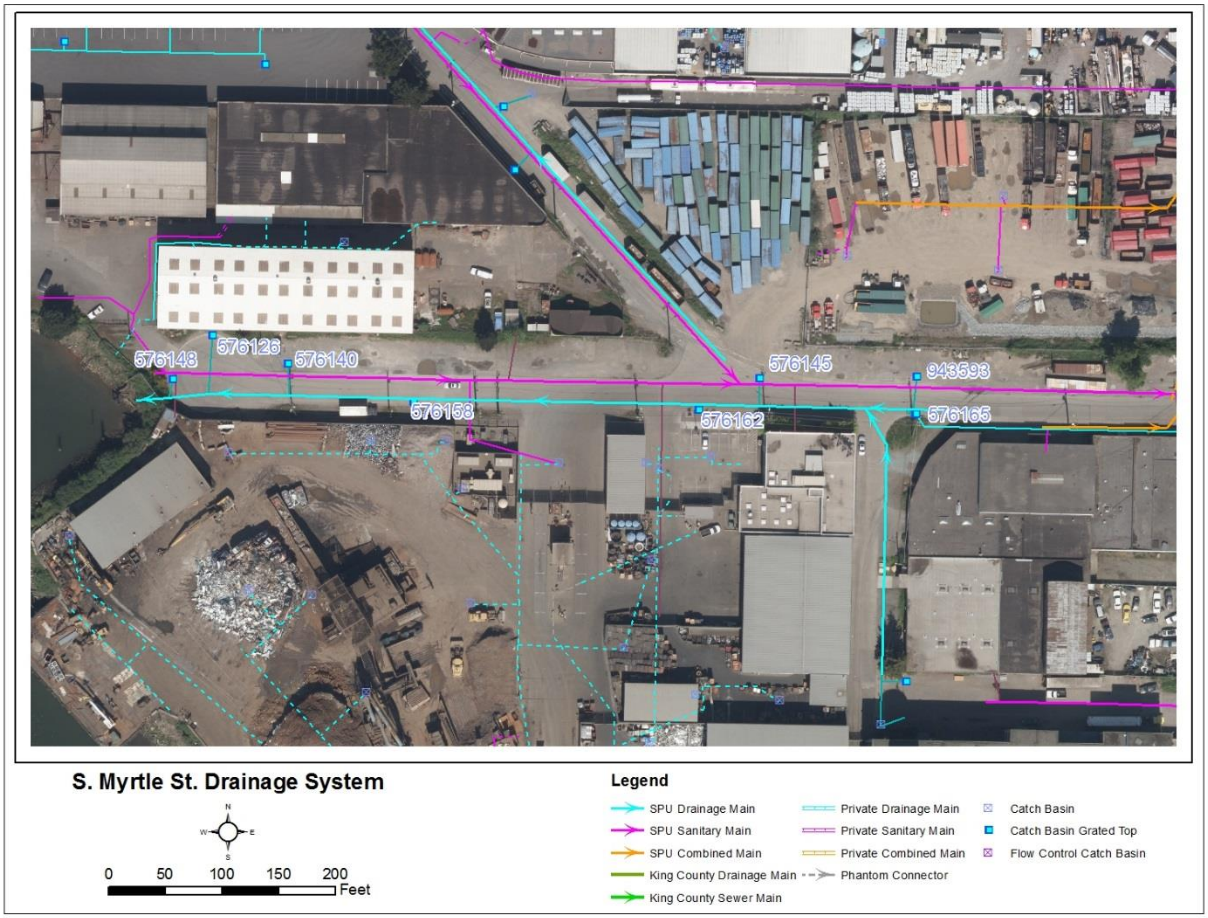


Figure 2: Catch basin and maintenance holes measuring locations on S. Myrtle St.

Structural Controls

South Park Water Quality Stormwater Treatment Facility

The South Park Water Quality Facility will treat stormwater runoff from the 7th Ave S drainage system. In 2018, SPU conducted a preliminary feasibility analysis of bioretention treatment and determined that bioretention could be used to treat runoff from this 230-acre drainage basin but would require more space for construction than a mechanical treatment system. Work in 2019 will focus on identifying a site for the treatment system and beginning analysis of treatment options.

Street Sweeping Expansion – Arterials

This program has expanded the City's arterial street sweeping program, per commitments in the Plan to Protect Seattle's Waterways (aka Integrated Plan).

During 2018, the team continued implementing the expanded program. Key tasks completed included:

- Swept 16,100 broom-miles draining to waterways to capture 149 dry tons of total suspended solids (TSS) equivalent (22 percent positive variance from plan);
- Continued to utilize overtime to address difficulties maintaining a full crew due to a tight labor market and high turnover;
- Commissioned and utilized a new Ecology grant-funded regenerative air sweeper;

During 2019, the team will continue to implement the plan and adapt as needed to meet the regulatory targets. The key tasks planned for this year include:

- Continue sweeping new arterial routes.
- Use SDOT's day shift staff as available to alleviate the current difficulty maintaining a night crew of six.

Terminal 117 Adjacent Streets and Drainage Project

SPU retrieved the end-of-pipe trap installed in the 17th Ave S storm drain in June 2018, but there was insufficient material for analysis. SPU collected grab samples from the pre-settling cells on two of the bioretention cells (C and D) in 2019. Sampling locations are shown on Figure 3 and results are provided in Attachment A.

SPU also collected samples of treated stormwater flowing out the bottom of Bioretention Cell B and Filterra™ unit D (see Figure 3) to assess the condition of the filter media in accordance with the T117 Long Term Maintenance and Monitoring Plan (AECOM and Integral 2018)[4]. Sample dates are summarized in Table 1.

Table 1: T117 underdrain samples collected in 2018.

Date	Sample Description	Cell C	Cell E	Filterra-D
June 15	Equipment blanks	✓	✓	✓
November 26	Stormwater samples	Equip failure	No underdrain flow	◎
December 10	Stormwater samples	✓	No underdrain flow	✓
December 13-14	Stormwater samples	✓	No underdrain flow	✓

[4] AECOM and Integral. 2018. Final Joint Long-Term Monitoring and Maintenance Plan, Lower Duwamish Waterway Superfund Site, T-117 Early Action Area. Prepared for the Port of Seattle and City of Seattle by AECOM and Integral Consulting, Inc., Seattle, WA.

Date	Sample Description	Cell C	Cell E	Filterra-D
December 17	Stormwater samples	✓	No underdrain flow	✓
December 18	Stormwater samples	✓	No underdrain flow	✓

Annual Prioritization

Validated data from storm drain solids samples collected between approximately August 2014 and December 2018[5] were compiled and reviewed to assess potential changes in the chemical characteristics of storm drain solids. This information was then used to re-evaluate the priorities presented in the SCIP.

Data Review

Comparisons for the major risk drivers in LDW sediment that are monitored in storm drain solids (arsenic, PCBs, and cPAH), are provided in Figures 4-9[6]. These figures present data for the following outfalls that were sampled between August 2014 and December 2018[7]:

East Side of Waterway

- S Nevada St SD
- Diagonal Ave S CSO/SD
- 1st Ave S SD (east)
- S River St SD
- S Brighton St SD
- S Myrtle St SD
- I-5 SD at Slip 4[8]
- KCIA SD#1[8]
- Norfolk CSO/EOF/SD

West Side of Waterway

- SW Dakota St SD
- SW Idaho St SD
- 1st Ave S SD (west)
- SW Kenny St SD
- Highland Park Ave SW SD
- 2nd Ave S SD[8]
- 7th Ave S SD
- 17th Ave S SD

The relatively low number of samples collected from some of the outfalls between August 2014 and December 2018 makes it difficult to draw strong conclusions about trends in storm drain solids chemistry.

[5] Data for samples collected and validated since the SCIP was completed in 2015.

[6] Dioxins/furans have been identified as a risk driver in LDW sediment, but these chemicals are not routinely analyzed in storm drain solids samples.

[7] Includes data for samples collected and validated since the SCIP was completed in 2015.

[8] Samples collected at downstream end of City MS4 system that contributes to these outfalls.

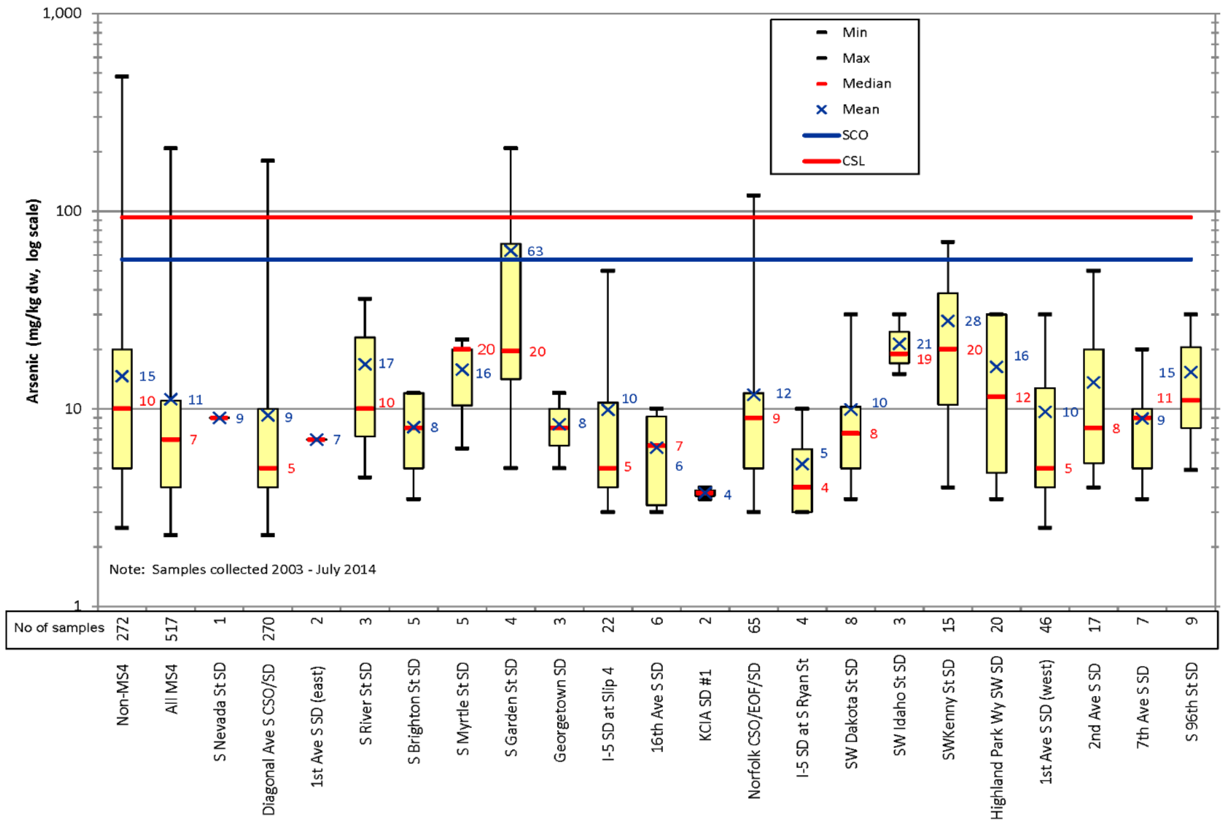


Figure 4: Arsenic s boxplot from the 2015 SCIP (2003 through July 2014 samples).

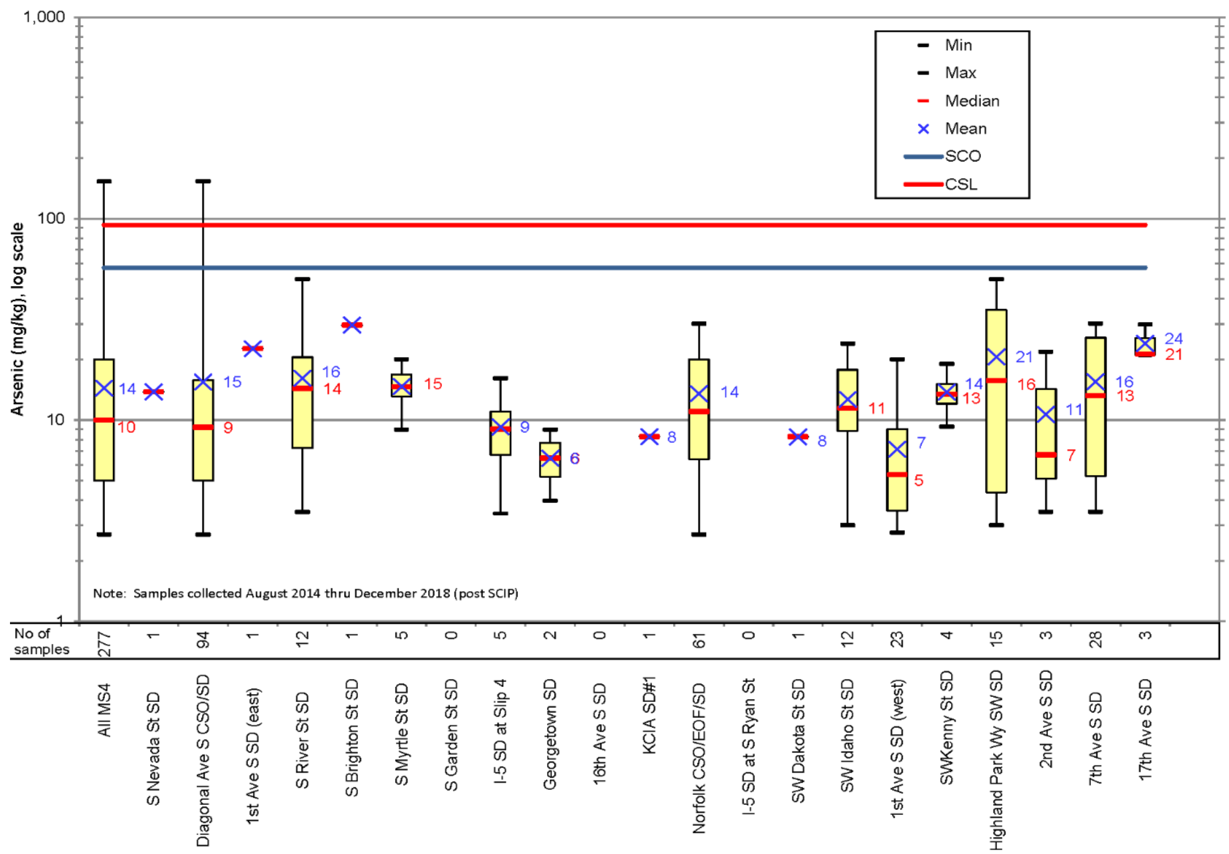


Figure 5: Arsenic boxplot (August 2004 – December 2018 samples).

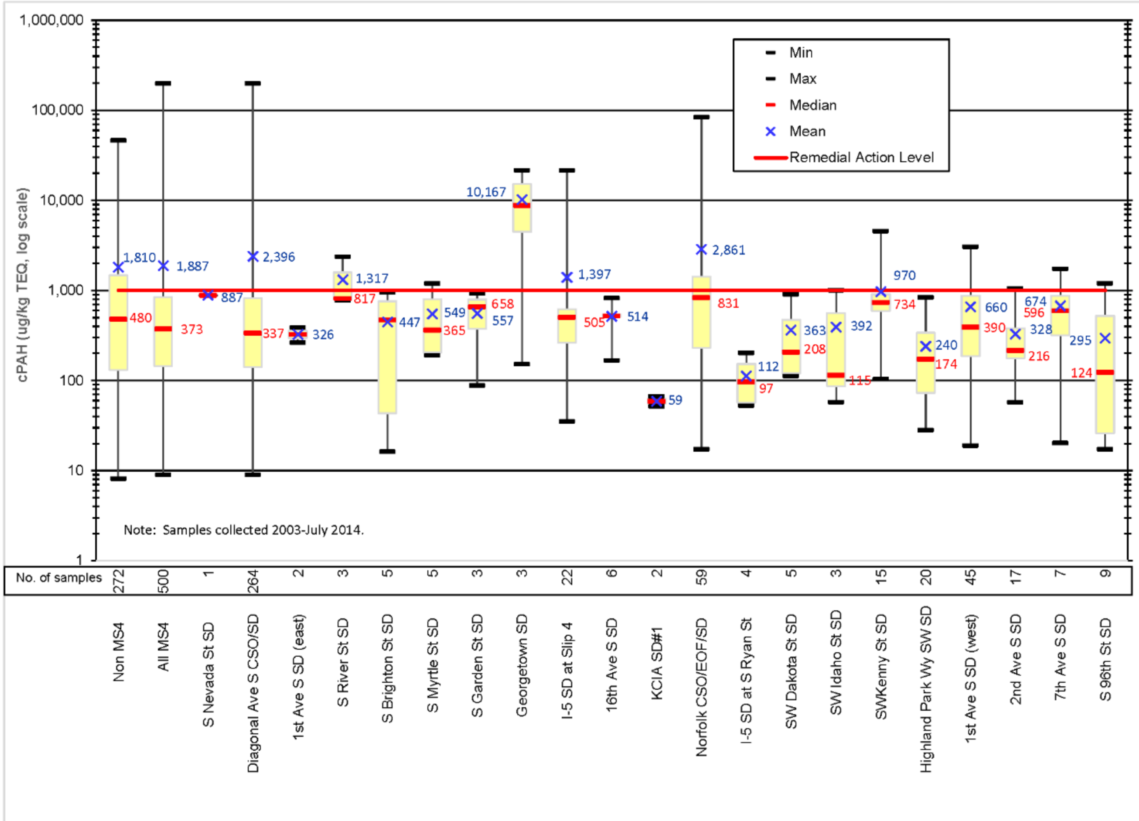


Figure 6: cPAH boxplot from the SCIP (2003 through July 2014 samples).

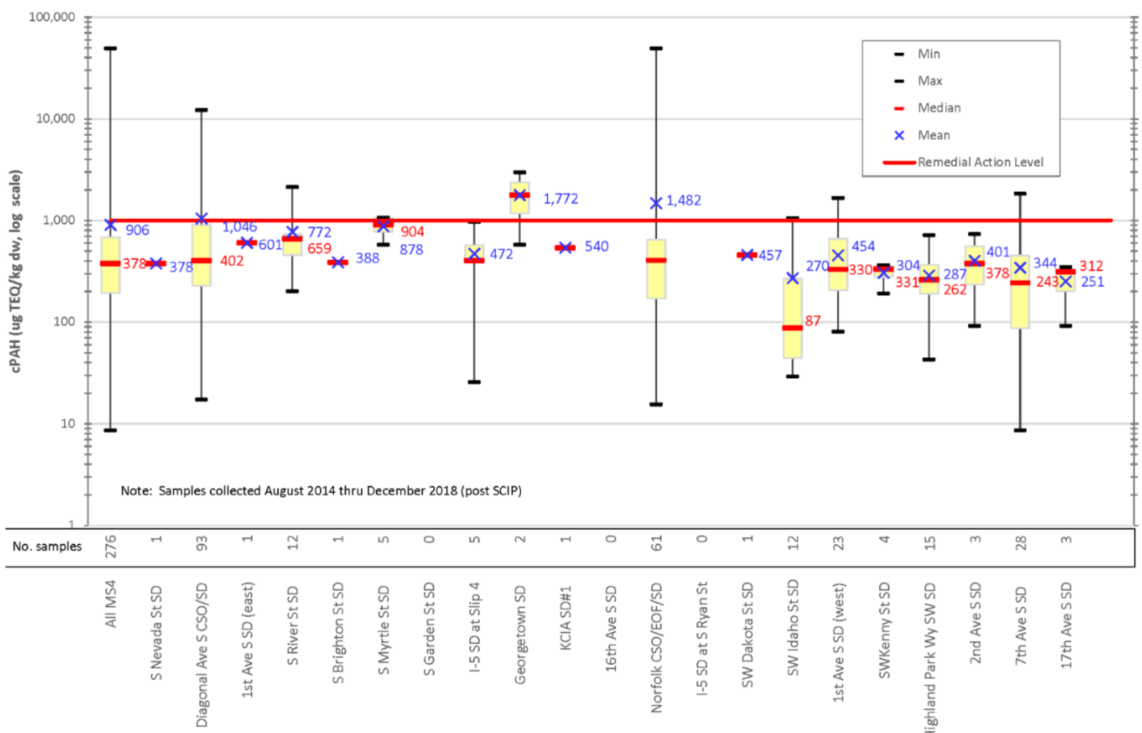


Figure 7: cPAH boxplot (August 2004 through December 2018 samples).

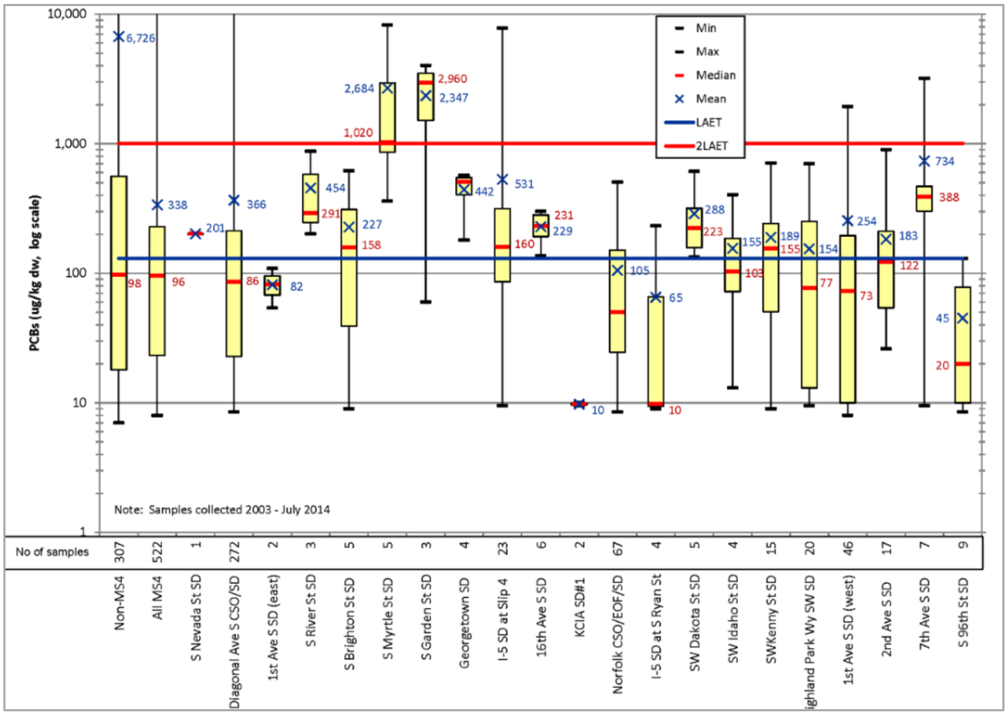


Figure 8: PCB boxplot from SCIP (2003 through July 2014 samples).

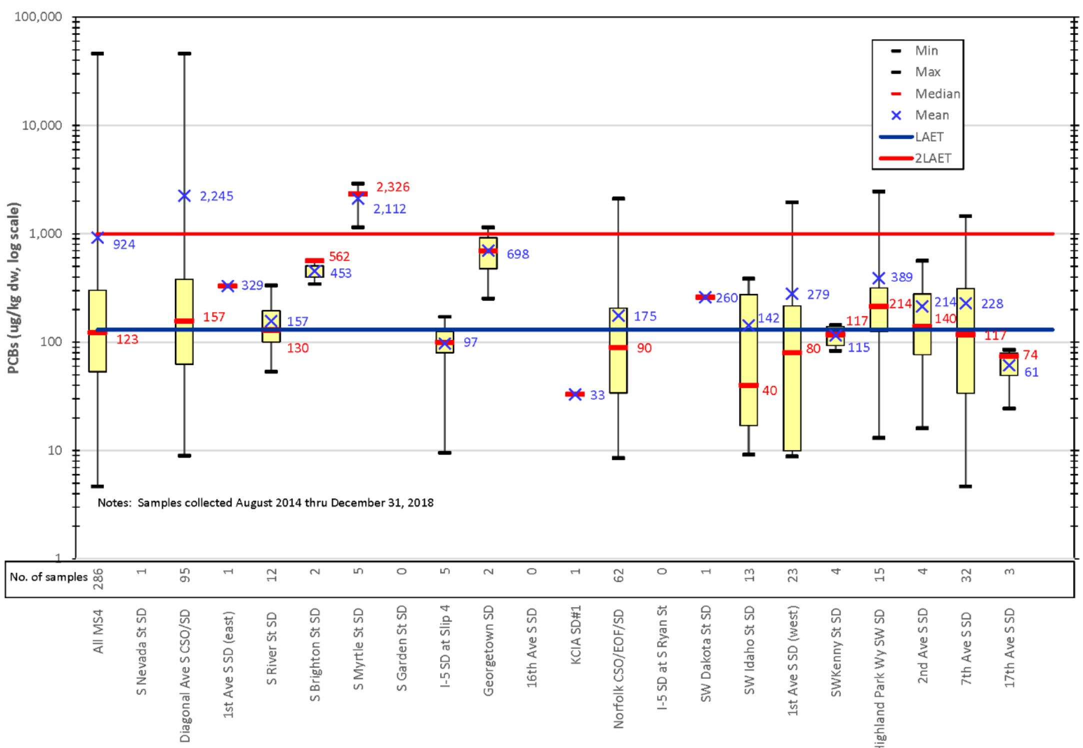


Figure9: PCB boxplot (August 2014 through December 2018 samples).

Outfalls that have not been sampled since the SCIP include:

- S Garden St SD
- S 96th St SD.
- 16th Ave S SD (east)
- I-5 SD at S Ryan St

SPU intends to sample the city-owned portions of these systems in 2019 to check whether the City MS4 in these areas continues to be low priority. SPU cleaned the city-owned portions of the 16th Ave S SD (east) system in 2013, and Boeing has disconnected its drainage system from this outfall. The downstream end of this system was also modified in 2014 when King County reconstructed the South Park bridge. Runoff from the approach to the bridge is now treated in a wet vault and discharges to the waterway via a new 24-inch outfall. However, runoff from portions of 16th Ave S and E Marginal Way S is not conveyed to the treatment vault and continues to discharge to the waterway via the old 8-inch outfall. SPU intends to sample the city-owned portion of the drainage system that discharges to the old outfall in 2019.The median concentrations of arsenic measured in each outfall between August 2014 and December 2018, were either slightly lower or similar to the concentrations reported in the SCIP. Exceedances of the sediment cleanup objective (SCO) for arsenic (57 mg/kg) were low in the older samples (2 percent exceeded the SCO). Only two of the 277 sample collected between July 2014 and December 2018 exceeded the SCO. One sample was collected in October 2017 from MH29, which is located just downstream of an old flush tank on the sanitary sewer which has since been converted to a storm drain[9]. The flush tank is old and no longer used. SPU cleaned this pipe in 2018. The other sample was collected in February 2018 at a private catch basin in an area where scrap wood is stored. SPU required the company to cover treated lumber.

Median PCB concentrations in the July 2014 – December 2018 samples also remained fairly similar to the concentrations reported in the SCIP. The main exceptions are the 7th Ave S SD, S River St, and the SW Idaho St SD, where median PCB concentrations were lower in the more recent samples and the Diagonal Ave S CSO/SD, S Brighton St SD and S Myrtle St SD where the median concentrations in August 2014- December 2018 samples were higher than the values reported in the SCIP (Table 2).

Table 2: Outfalls where PCBs changed between SCIP and recent samples.

Outfall	Results from SCIP		Results from 2014-2018 samples	
	Median concentration (ug/kg dw PCBs)	n	Median concentration (ug/kg dw PCBs)	n
7th Ave S SD	388	7	117	32
S River St SD	291	3	130	12
SW Idaho St SD	103	4	40	13
S Brighton St SD	158	5	562	5
S Myrtle St SD	1,020	5	2.326	5
Diagonal Ave S CSO/SD	86	222	157	95

[9] The 12-inch sanitary sewer was converted to a storm drain as part of the Diagonal Avenue S CSO Control Project constructed in the early 1990s.

The 7th Ave S, S River St, and SW Idaho St drainage systems were cleaned in 2013, 2010, and 2012, respectively. Data presented in the SCIP included only the post-cleaning samples, but the new data indicate that PCB concentrations may be declining in these three systems. The S Myrtle St drainage system was also cleaned in 2010, but as reported in the SCIP, there is an ongoing source in the S Myrtle St system. Five samples were collected from the S Myrtle St MS4between August 2014- December 2018. Analysis of these samples indicates that elevated levels of PCBs and mercury continue to be present in this system. Additional sampling will be conducted after additional source control actions required of Seattle Iron and Metal, Inc. as part of the recent settlement with Puget Soundkeeper Alliance are completed.

The median concentration of PCBs in the Diagonal Ave S CSO/SD has increased by nearly a factor of two over the past four years. This change may be due to the emphasis on following up in areas where the detection dog detected PCBs or where SPU inspectors suspected potential PCB sources. SPU installed three additional traps in the S Snoqualmie sub-basin in 2018 to assist in tracing elevated levels of PCBs found in the maintenance hole located on S Snoqualmie St at 6th Ave S.

With the exception of a few outfalls, median cPAH concentrations in the August 2014- December 2018 samples were fairly similar to the concentrations reported in the SCIP (Table 3):

Table 3: Outfalls where cPAHs changed between SCIP and recent samples.

Outfall	Results from SCIP		Results from 2014—2018 samples	
	Median cPAH (ug/ TEQ/kg)	n	Median cPAH (ug/ TEQ/kg)	n
7th Ave S SD	596	7	243	28
Norfolk CSO/EOF/SD	831	59	405	61
SW Kenny St SD	734	15	331	4
2nd Ave S SD	216	17	378	3
S Myrtle St SD	365	5	904	5

n = number of samples

Median concentrations of cPAH have declined in the 7th Ave S, Norfolk, and SW Kenny St storm drains. As mentioned above, the data presented in the SCIP for the 7th Ave S and SW Idaho St storm drains included only post-cleaning samples, so the recent data may indicate that cPAH concentrations in these two systems are continuing to decline. The August 2014- December 2018 dataset for the Norfolk system is fairly robust (61 samples), because SPU conducted a focused investigation in this basin to identify source(s) of PAHs, which involved intensive inspections and sampling. However, no specific sources were found. Over the past 5 years, a number of PAH sources have been identified and controlled in this system. SPU cleaned most of the MLK Wy Jr. sub-basin of the S Norfolk drainage system in 2018.

Although the recent data indicate that cPAH concentrations may be increasing in the 2nd Ave S and S Myrtle St storm drains, there are not enough samples to confirm whether this is the case. SPU intends to continue sampling in these two basins.

Priorities for 2018

Source Tracing/Sampling

Source tracing priorities for 2019 will largely remain the same as described in the SCIP. Changes identified based on recent sampling and business inspections are summarized below:

- Collect additional samples in the S Brighton St SD to determine whether there are active sources of PCBs in this basin.[10]
- Collect additional samples in the 2nd Ave S SD to determine whether there are active sources of cPAH in this basin.
- Resample the S Norfolk drainage system following the 2018 cleaning.
- Continue searching for the source(s) of PCBs in the S Snoqualmie sub-basin of the Diagonal Ave S CSO/SD.

Line Cleaning

The solids decanting/dewatering site in South Park that has been used the past few years is no longer be available. MTCA grant funding for line cleaning ran out in 2017. In 2016, the end date of this grant was extended from 2017 to 2019, but no additional money was provided. Line cleaning in 2019 will focus on:

- Finish cleaning the S Norfolk CSO/EOF/SD drainage system[11]A lateral on the S River St SD system that was missed during the 2010 cleaning

- Clean lines in industrial areas within the Diagonal Ave S CSO/SD drainage system.
  - S Dakota St sub-basin
  - Ohio Ave S sub-basin
  - 6th Ave S / S Hinds St sub-basin
  - Bush Pl sub-basin.

SPU intends to clean at least 4,000 linear feet of storm drain lines in 2019 to comply with Appendix 13 requirements.

Citywide Programs that Support Source Control Efforts in the LDW

In addition to the specific adaptive management elements, SPU conducts other citywide programs that support these efforts. The following is a summary of the 2018 accomplishments in these citywide programs:

- Stormwater Facility Inspections: While inspecting a business for source control BMPs, the flow control and/or treatment facility is also inspected. Within the LDW, 54 facilities were inspected for Code compliance with regard to flow control and treatment system code requirements during 2018.

- Illicit Discharge Detection and Elimination (IDDE): SPU conducts sediment sampling of onsite catch basins, right of way catch basins and drainage system

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[10] S Brighton St SD was not sampled in 2017 as planned. This system will be sampled in 2018.

[11] Portions of the S Norfolk St CSO/EOF/SD system were cleaned in 2018.

mainlines to identify sources of contamination and potential illicit discharges and illicit connections. Sampling is conducted in tandem with business inspections to identify and terminate sources of pollution. Samples are analyzed for the LDW contaminants of concern, including total organic carbon, semi-volatile organic compounds, TPH-Dx, metals, polychlorinated biphenyls, grain size, and occasionally site-specific parameters, such as pH, additional metals, and volatile organic compounds.

The Diagonal Ave S MS4 basins, which is 2,664 acres in area, was screened from June to September of 2018 based on IDDE protocol. 214 sample points were investigated, with 152 samples taken. Various triggers were received, including potassium, conductivity, and bacteria (fecal coliform). Two illicit connections were discovered, both from elevated fecal coliform samples. The first was from a large food processing operation and the second from eight newly constructed townhomes. The townhomes were replumbed to discharge to the sanitary sewer, and the food processor has stopped all discharges from the facility and is awaiting permits to replumb the facility. Additionally, a broken side sewer at a fueling station was discovered after receiving elevated fecal coliform in a storm drainage mainline. The side sewer was repaired. An illicit discharge of grease was visually traced in the mainline to a catch basin located in a fast food parking lot. After investigating the drain, it was determined a neighboring grocery store had been pouring waste grease into this drain. Three additional trigger investigations remain open: two of elevated bacteria, and one of elevated fluoride and potassium. These will be investigated during dry weather opportunities throughout 2019 to determine their source. The SW Idaho St SD, which is 328 acres, was screened in September of 2018. Three sample locations were screened, with one sample taken and two visual determinations of no flow. No trigger values were obtained in this basin.

- Water Quality Complaints: Inspectors respond to complaints as they are received through the water quality hotline, webpage or agency referrals. In 2018, 76 water quality complaints were reported in the LDW and EW basins that resulted in 6 business inspections. When a complaint is reported at a business, a full business inspection is completed.
- Spill Response: Spills are dispatched through the SPU Operations Response Center to on-call Spill Coordinators as they are received. In 2018, SPU responded to 92 spills within the LDW and EW basins.
- Education and Outreach: SPU funds the Resource Venture, a conservation service for Seattle businesses. Resource Venture implements the City's Spill Kit Incentive Program, which provides free spill kits, assistance in developing spill plan and site-specific technical assistance to Seattle businesses. Approximately 30 businesses in the LDW MS4 basins received spill kits, either stemming from a business inspection or through targeted outreach. Surveys conducted of spill kit recipients statistically show that businesses which participate in this program show an improved understanding of stormwater pollution prevention.

Attachment A: Source tracing data collected from June 2016 through December 2018

Location			MH39
Sample Date			25 May 2018
Sample Name			MKJ-052518-3
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			1st Ave S SD (east)
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*94.1 U*
1,2-Dichlorobenzene	ug/kg	50	*94.1 U*
1,3-Dichlorobenzene	ug/kg		94.1 U
1,4-Dichlorobenzene	ug/kg	110	94.1 U
1-Methylnaphthalene	ug/kg		94.1 U
2,2'-Oxybis(1-chloropropane)	ug/kg		94.1 U
2,4,5-Trichlorophenol	ug/kg		470 U
2,4,6-Trichlorophenol	ug/kg		470 U
2,4-Dichlorophenol	ug/kg		470 U
2,4-Dimethylphenol	ug/kg	29	*470 U*
2,4-Dinitrophenol	ug/kg		941 U
2,4-Dinitrotoluene	ug/kg		470 U
2,6-Dinitrotoluene	ug/kg		470 U
2-Chloronaphthalene	ug/kg		94.1 U
2-Chlorophenol	ug/kg		94.1 U
2-Methylnaphthalene	ug/kg	670	72.4 J
2-Methylphenol	ug/kg	63	*94.1 U*
2-Nitroaniline	ug/kg		470 U
2-Nitrophenol	ug/kg		94.1 U
3,3`-Dichlorobenzidine	ug/kg		470 U
3-Nitroaniline	ug/kg		470 U
4,6-Dinitro-2-Methylphenol	ug/kg		941 U
4-Bromophenyl phenyl ether	ug/kg		94.1 U
4-Chloro-3-Methylphenol	ug/kg		470 U
4-Chloroaniline	ug/kg		470 U
4-Chlorophenyl Phenylether	ug/kg		94.1 U
4-Methylphenol	ug/kg	670	93.8 J
4-Nitroaniline	ug/kg		470 U
4-Nitrophenol	ug/kg		470 U
Acenaphthene	ug/kg	500	28.1 J
Acenaphthylene	ug/kg	1300	39.1 J
Anthracene	ug/kg	960	147
Aroclor 1016	ug/kg		19.4 U
Aroclor 1221	ug/kg		19.4 U
Aroclor 1232	ug/kg		19.4 U
Aroclor 1242	ug/kg		19.4 U
Aroclor 1248	ug/kg		67.5
Aroclor 1254	ug/kg		151
Aroclor 1260	ug/kg		110
Arsenic	mg/kg	93	22.6

Benzo(A)anthracene	ug/kg	1600	455
Benzo(A)pyrene	ug/kg	1600	382
Benzo(G,H,I)perylene	ug/kg	720	533
Benzofluoranthenes, Total	ug/kg	3600	1010
Benzoic acid	ug/kg	650	*941 U*
Benzyl alcohol	ug/kg	73	*94.1 U*
bis(2-Chloroethoxy) methane	ug/kg		94.1 U
Bis-(2-chloroethyl) ether	ug/kg		94.1 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*4660*
Butylbenzylphthalate	ug/kg	900	*256*
Carbazole	ug/kg		61.9 J
Chrysene	ug/kg	2800	888
Coarse Sand	%		9.2
Copper	mg/kg	390	185
cPAH	ug/kg	100	601.44
Dibenzo(A,H)anthracene	ug/kg	230	86.4 J
Dibenzofuran	ug/kg	540	46.3 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	719
Diethylphthalate	ug/kg	1200	94.1 U
Dimethylphthalate	ug/kg	160	*94.1 U*
Di-N-Butylphthalate	ug/kg	1400	111
Di-N-Octylphthalate	ug/kg	6200	314
Fine Gravel	%		0.3
Fine Sand	%		6.9
Fluoranthene	ug/kg	2500	807
Fluorene	ug/kg	540	65.1 J
Hexachlorobenzene	ug/kg	70	*94.1 U*
Hexachlorobutadiene	ug/kg	120	*94.1 U*
Hexachlorocyclopentadiene	ug/kg		470 U
Hexachloroethane	ug/kg		94.1 U
HPAH	ug/kg	17000	5434.4
Indeno(1,2,3-Cd)pyrene	ug/kg	690	295
Isophorone	ug/kg		94.1 U
Lead	mg/kg	530	115 J
LPAH	ug/kg	5200	798.3
Medium Sand	%		10
Mercury	mg/kg	0.59	0.131
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*3100*
Naphthalene	ug/kg	2100	109
Nitrobenzene	ug/kg		94.1 U
N-Nitroso-Di-N-Propylamine	ug/kg		94.1 U
N-Nitrosodiphenylamine	ug/kg	40	*54.1 J*
Pentachlorophenol	ug/kg	690	*470 U*
Phenanthrene	ug/kg	1500	410
Phenol	ug/kg	1200	84.7 J
Polychlorinated Biphenyls	ug/kg	1000	*328.5*
Pyrene	ug/kg	3300	978
Solids, Total	%		56.34
Total Organic Carbon	%		6.8

Very Coarse Sand	%		5.4
Very Fine Sand	%		7.8
Zinc	mg/kg	960	*1020*

Location			MH5	NST1	NST1	NST3	NST4
Sample Date			13 Apr 2018	16 Apr 2018	16 Apr 2018	16 Apr 2018	17 Apr 2018
Sample Name			MKJ-041318-1	NST1-041618	NST1-041618-G	NST3-041618	NST4-041718
Drainage Type			SD	SD	SD	SD	SD
Sample Method			Grab-Manual	SedTrap	Grab-Manual	SedTrap	SedTrap
Location Type			Inline	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap
Project							
Outfall			S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD
Analyte	Unit	CSL/2LAET					
1,2,4-Trichlorobenzene	ug/kg	51	200 U	99.2 U	99.4 U	96.4 U	296 U
1,2-Dichlorobenzene	ug/kg	50	200 U	99.2 U	99.4 U	96.4 U	296 U
1,3-Dichlorobenzene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
1,4-Dichlorobenzene	ug/kg	110	200 U	99.2 U	99.4 U	96.4 U	296 U
1-Methylnaphthalene	ug/kg		200 U	99.2 U	46.8 J	96.4 U	296 U
2,2'-Oxybis(1-chloropropane)	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2,4,5-Trichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4,6-Trichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4-Dichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4-Dimethylphenol	ug/kg	29	998 U	496 U	497 U	482 U	1480 U
2,4-Dinitrophenol	ug/kg		2000 U	992 U	994 U	964 U	2960 U
2,4-Dinitrotoluene	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,6-Dinitrotoluene	ug/kg		998 U	496 U	497 U	482 U	1480 U
2-Chloronaphthalene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2-Chlorophenol	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2-Methylnaphthalene	ug/kg	670	200 U	43.3 J	75.5 J	96.4 U	296 U
2-Methylphenol	ug/kg	63	200 U	99.2 U	99.4 U	96.4 U	296 U
2-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
2-Nitrophenol	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
3,3`-Dichlorobenzidine	ug/kg		998 U	496 U	497 U	482 U	1480 U
3-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4,6-Dinitro-2-Methylphenol	ug/kg		2000 U	992 U	994 U	964 U	2960 U
4-Bromophenyl phenyl ether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
4-Chloro-3-Methylphenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Chloroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Chlorophenyl Phenylether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
4-Methylphenol	ug/kg	670	200 U	1140	99.4 U	96.4 U	296 U
4-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Nitrophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
Acenaphthene	ug/kg	500	200 U	99.2 U	99.4 U	96.4 U	296 U
Acenaphthylene	ug/kg	1300	200 U	99.2 U	49.4 J	96.4 U	296 U
Anthracene	ug/kg	960	100 J	102	205	96.4 U	296 U
Aroclor 1016	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1221	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1232	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1242	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1248	ug/kg		19 U	19 U	130	17.6 U	29.6 U
Aroclor 1254	ug/kg		19 U	117	234	17.6 U	54.7
Aroclor 1260	ug/kg		63.5	35.9	120	17.6 U	51.7
Arsenic	mg/kg	93	13.1	15.2	15.3	6.13 U	35.8 U
Benzo(A)anthracene	ug/kg	1600	419	269	804	87.9 J	169 J
Benzo(A)pyrene	ug/kg	1600	553	279	1070	132	257 J
Benzo(G,H,I)perylene	ug/kg	720	284	493	787	114	202 J
Benzofluoranthenes, Total	ug/kg	3600	1180	682	2070	283	710
Benzoic acid	ug/kg	650	2000 U	2650	555 J	964 U	1930 J
Benzyl alcohol	ug/kg	73	200 U	1930	371	96.4 U	577
bis(2-Chloroethoxy) methane	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Bis-(2-chloroethyl) ether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	13400	7160	8500	352	746
Butylbenzylphthalate	ug/kg	900	256	250	1160	96.4 U	296 U
Carbazole	ug/kg		200 U	99.2 U	147	96.4 U	296 U
Chrysene	ug/kg	2800	723	486	1350	135	330
Coarse Sand	%		3.8		2.3		
Copper	mg/kg	390	160	133	129	30.8	85.3
cPAH	ug/kg	100	778.83 J	422.1	1519	194.54 J	424.2 J
Dibenzo(A,H)anthracene	ug/kg	230	200 U	99.2 U	231	96.4 U	296 U
Dibenzofuran	ug/kg	540	200 U	99.2 U	55.5 J	96.4 U	296 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	2150	882	888	123	565
Diethylphthalate	ug/kg	1200	200 U	99.2 U	99.4 U	96.4 U	296 U
Dimethylphthalate	ug/kg	160	200 U	99.2 U	99.4 U	96.4 U	296 U
Di-N-Butylphthalate	ug/kg	1400	180 J	168	179	47.9 J	296 U
Di-N-Octylphthalate	ug/kg	6200	441	4190	1910	96.4 U	296 U
Fine Gravel	%		0.1		0.5		
Fine Sand	%		4.8		6.5		
Fluoranthene	ug/kg	2500	1080	748	2380	196	462
Fluorene	ug/kg	540	49.7 J	99.2 U	111	96.4 U	296 U
Hexachlorobenzene	ug/kg	70	200 U	99.2 U	99.4 U	96.4 U	296 U
Hexachlorobutadiene	ug/kg	120	200 U	99.2 U	99.4 U	96.4 U	296 U
Hexachlorocyclopentadiene	ug/kg		998 U	496 U	497 U	482 U	1480 U
Hexachloroethane	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
HPAH	ug/kg	17000	5776 J	4054.6	11879	1210.3 J	2969 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	187 J	233	557	96.4 U	168 J
Isophorone	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Lead	mg/kg	530	71.4	57.5	79.8	14.4	285
LPAH	ug/kg	5200	629.3 J	701.4 J	1463.9 J	307.9 J	940 J
Medium Sand	%		6.3		2.8		
Mercury	mg/kg	0.59	0.139	0.196	0.162	0.0328 U	0.185 U
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	6720	3080	2860	1090	871
Naphthalene	ug/kg	2100	73.6 J	61.6 J	98.5 J	96.4 U	296 U
Nitrobenzene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
N-Nitroso-Di-N-Propylamine	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
N-Nitrosodiphenylamine	ug/kg	40	200 U	99.2 U	99.4 U	96.4 U	296 U
Pentachlorophenol	ug/kg	690	998 U	496 U	497 U	482 U	1480 U
Phenanthrene	ug/kg	1500	406	389	1000	66.9 J	200 J
Phenol	ug/kg	1200	88.2 J	325	165	96.4 U	126 J
Polychlorinated Biphenyls	ug/kg	1000	63.5	200.4	484	17.6 U	180.4
Pyrene	ug/kg	3300	1350	815	2630	166	523
Solids, Total	%		43.29	42.02	35.65	76.13	13.53
Total Organic Carbon	%		6.7	8.95 J	6.51	3.27 J	3.72 J
Very Coarse Sand	%		1.4		3.3		
Very Fine Sand	%		8.4		10.2		
Zinc	mg/kg	960	721	600	934	169	300

Location			7TH-ST1	7TH-ST1	7TH-ST2	7TH-ST2	7TH-ST3	CB154	ODS60
Sample Date			18 Apr 2018	18 Apr 2018	17 Apr 2018	17 Apr 2018	19 Apr 2018	15 Feb 2018	20 Jun 2018
Sample Name			7TH-ST1-041818	7TH-ST1-041818-G	7TH-ST2-041718	7TH-ST2-041718-G	7TH-ST3-041918	CEW-021518-2	MKJ-062018-3
Drainage Type			SD	SD	SD	SD	SD	SD	SD
Sample Method			SedTrap	Grab-Manual	SedTrap	Grab-Manual	SedTrap	Grab-Manual	Grab-Manual
Location Type			Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	CB	ODS
Project									
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD
Analyte	Unit	CSL/2LAET							
1,2,4-Trichlorobenzene	ug/kg	51	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
1,2-Dichlorobenzene	ug/kg	50	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
1,3-Dichlorobenzene	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
1,4-Dichlorobenzene	ug/kg	110	105	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
1-Methylnaphthalene	ug/kg		96.3 U	98.8 U	8.1 J	97.7 U	34.8 J	213	18.9 U
2,2'-Oxybis(1-chloropropane)	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
2,4,5-Trichlorophenol	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2,4,6-Trichlorophenol	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2,4-Dichlorophenol	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2,4-Dimethylphenol	ug/kg	29	482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2,4-Dinitrophenol	ug/kg		963 U	988 U	192 U	977 U	992 U	964 U	189 U
2,4-Dinitrotoluene	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2,6-Dinitrotoluene	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2-Chloronaphthalene	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
2-Chlorophenol	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
2-Methylnaphthalene	ug/kg	670	40.5 J	98.8 U	7.9 J	97.7 U	47.2 J	467	18.9 U
2-Methylphenol	ug/kg	63	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
2-Nitroaniline	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
2-Nitrophenol	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
3,3`-Dichlorobenzidine	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
3-Nitroaniline	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
4,6-Dinitro-2-Methylphenol	ug/kg		963 U	988 U	192 U	977 U	992 U	964 U	189 U
4-Bromophenyl phenyl ether	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
4-Chloro-3-Methylphenol	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
4-Chloroaniline	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
4-Chlorophenyl Phenylether	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
4-Methylphenol	ug/kg	670	1010	318	19.2 U	97.7 U	95 J	627	18.9 U
4-Nitroaniline	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
4-Nitrophenol	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
Acenaphthene	ug/kg	500	79.8 J	98.8 U	7.4 J	97.7 U	99.2 U	96.4 U	18.9 U
Acenaphthylene	ug/kg	1300	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Anthracene	ug/kg	960	85.7 J	98.8 U	19.2 U	55.1 J	77.5 J	40.6	18.9 U
Aroclor 1016	ug/kg		19.9 U	18.3 U	17.8 U	19.5 U	19.9 U	95.1 U	18.9 U
Aroclor 1221	ug/kg		19.9 U	18.3 U	17.8 U	19.5 U	19.9 U	95.1 U	18.9 U
Aroclor 1232	ug/kg		19.9 U	18.3 U	17.8 U	19.5 U	19.9 U	95.1 U	18.9 U
Aroclor 1242	ug/kg		19.9 U	18.3 U	17.8 U	19.5 U	19.9 U	95.1 U	18.9 U
Aroclor 1248	ug/kg		66.5	18.3 U	17.8 U	19.5 U	19.9 U	477	18.9 U
Aroclor 1254	ug/kg		90.8	20.9	17.8 U	19.5 U	19.9 U	671	18.9 U
Aroclor 1260	ug/kg		63.3	18.9	17.8 U	19.5 U	43	306 J	19.3
Arsenic	mg/kg	93	20	7.29 U	8.67	5.85	23.6	17.4	12.2
Benzo(A)anthracene	ug/kg	1600	217	98.8 U	27.3	155	263	216	8.1 J
Benzo(A)pyrene	ug/kg	1600	315	98.8 U	23	168	289	215	18.9 U
Benzo(G,H,I)perylene	ug/kg	720	281	98.8 U	19.2 U	88.7 J	278	360 J	16.9 J
Benzofluoranthenes, Total	ug/kg	3600	673	133 J	42.3	376	776	575	39.8
Benzoic acid	ug/kg	650	577 J	988 U	333	862 J	677 J	964 U	88.6 J
Benzyl alcohol	ug/kg	73	409	160	367	97.7 U	602	2520	18.9 U
bis(2-Chloroethoxy) methane	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Bis-(2-chloroethyl) ether	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	3280	96.4 U	18.9 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	5960	877	106	804	6550	20400	212
Butylbenzylphthalate	ug/kg	900	96.3 U	98.8 U	98.1	97.7 U	99.2 U	354	18.9 U
Carbazole	ug/kg		54.1 J	98.8 U	19.2 U	54.4 J	110	70.9	18.9 U
Chrysene	ug/kg	2800	493	111	34.6	224	522	548	18 J
Coarse Sand	%			3.4		15.2		11.8	
Copper	mg/kg	390	156	38.8	13.4	17.4	97.3	635	39
cPAH	ug/kg	100	450.39	93.45 J	35.106	250.44 J	429.96	348.98	19.58 J
Dibenzo(A,H)anthracene	ug/kg	230	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	76.5	18.9 U
Dibenzofuran	ug/kg	540	96.3 U	98.8 U	7.4 J	97.7 U	99.2 U	41	18.9 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	1000	133	10.6	5.86 U	390	2260	7.69
Diethylphthalate	ug/kg	1200	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Dimethylphthalate	ug/kg	160	49.4 J	98.8 U	19.2 U	97.7 U	99.2 U	112	18.9 U
Di-N-Butylphthalate	ug/kg	1400	161	49.6 J	19.2 U	72.1 J	111	771	46.1
Di-N-Octylphthalate	ug/kg	6200	368	98.8 U	19.2 U	97.7 U	279	786	18.9 U
Fine Gravel	%			0.1		4.6		1.1	
Fine Sand	%			33.1		2.5		7.3	
Fluoranthene	ug/kg	2500	723	136	70.7	477	758	849 J	16.3 J
Fluorene	ug/kg	540	96.3 U	98.8 U	19.2 U	32.7 J	99.2 U	47.1	18.9 U
Hexachlorobenzene	ug/kg	70	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Hexachlorobutadiene	ug/kg	120	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Hexachlorocyclopentadiene	ug/kg		482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
Hexachloroethane	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
HPAH	ug/kg	17000	3625.15	523 J	288.7	1965.3 J	3832.6	3844.5 J	127.4 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	222	98.8 U	19.2 U	75.6 J	120	188	13.8 J
Isophorone	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Lead	mg/kg	530	97.3	16.2	10.3	4.67	69	127	98.6
LPAH	ug/kg	5200	670.5	47.5 J	90.4 J	387.8 J	687.4	758.7	15.1 J
Medium Sand	%			22.1		11.8		11.7	
Mercury	mg/kg	0.59	0.178	0.0526	0.0371 U	0.0224 U	0.165	0.112	0.0916
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	3120	546	50.8	17.8	2120	7770	51.5
Naphthalene	ug/kg	2100	48.7 J	98.8 U	7.6 J	97.7 U	68.1 J	184	5 J
Nitrobenzene	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
N-Nitroso-Di-N-Propylamine	ug/kg		96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
N-Nitrosodiphenylamine	ug/kg	40	96.3 U	98.8 U	19.2 U	97.7 U	99.2 U	96.4 U	18.9 U
Pentachlorophenol	ug/kg	690	482 U	494 U	96.2 U	488 U	496 U	482 U	94.6 U
Phenanthrene	ug/kg	1500	360	47.5 J	46.6	300	393	487	10.1 J
Phenol	ug/kg	1200	202	98.8 U	45	97.7 U	351	259	107
Polychlorinated Biphenyls	ug/kg	1000	260.4	39.8	17.8 U	19.5 U	102.7	1454 J	19.3
Pyrene	ug/kg	3300	653	143	62	401	777	817	14.5 J
Solids, Total	%		46.72	67.39	67.45	84.46	31.08	47.97	
Total Organic Carbon	%		4.83 J	0.94	3.45 J	0.23	9.22 J	7.04	
Very Coarse Sand	%			0.9		9.3		8.9	
Very Fine Sand	%			19.8		0.6		10.8	
Zinc	mg/kg	960	613	133	85.7	52.3	555	752	142

Location			RCB85
Sample Date			18 Dec 2018
Sample Name			MBS-121818-1
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			RCB
Project			
Outfall			16th Ave S
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*97.9 U*
1,2-Dichlorobenzene	ug/kg	50	*97.9 U*
1,3-Dichlorobenzene	ug/kg		97.9 U
1,4-Dichlorobenzene	ug/kg	110	97.9 U
1-Methylnaphthalene	ug/kg		97.9 U
2,2'-Oxybis(1-chloropropane)	ug/kg		97.9 U
2,4,5-Trichlorophenol	ug/kg		489 U
2,4,6-Trichlorophenol	ug/kg		489 U
2,4-Dichlorophenol	ug/kg		489 U
2,4-Dimethylphenol	ug/kg	29	*489 U*
2,4-Dinitrophenol	ug/kg		979 U
2,4-Dinitrotoluene	ug/kg		489 U
2,6-Dinitrotoluene	ug/kg		489 U
2-Chloronaphthalene	ug/kg		97.9 U
2-Chlorophenol	ug/kg		97.9 U
2-Methylnaphthalene	ug/kg	670	51.3 J
2-Methylphenol	ug/kg	63	*97.9 U*
2-Nitroaniline	ug/kg		489 U
2-Nitrophenol	ug/kg		97.9 U
3,3`-Dichlorobenzidine	ug/kg		489 U
3-Nitroaniline	ug/kg		489 U
4,6-Dinitro-2-Methylphenol	ug/kg		979 U
4-Bromophenyl phenyl ether	ug/kg		97.9 U
4-Chloro-3-Methylphenol	ug/kg		489 U
4-Chloroaniline	ug/kg		489 U
4-Chlorophenyl Phenylether	ug/kg		97.9 U
4-Methylphenol	ug/kg	670	97.9 U
4-Nitroaniline	ug/kg		489 U
4-Nitrophenol	ug/kg		489 U
Acenaphthene	ug/kg	500	97.9 U
Acenaphthylene	ug/kg	1300	97.9 U
Anthracene	ug/kg	960	50.6 J
Aroclor 1016	ug/kg		19.6 U
Aroclor 1221	ug/kg		19.6 U
Aroclor 1232	ug/kg		19.6 U
Aroclor 1242	ug/kg		19.6 U
Aroclor 1248	ug/kg		19.6 U
Aroclor 1254	ug/kg		184
Aroclor 1260	ug/kg		272
Arsenic	mg/kg	93	19.3 U
Benzo(A)anthracene	ug/kg	1600	233
Benzo(A)pyrene	ug/kg	1600	322
Benzo(G,H,I)perylene	ug/kg	720	399
Benzofluoranthenes, Total	ug/kg	3600	1000
Benzoic acid	ug/kg	650	*2960*
Benzyl alcohol	ug/kg	73	*2050*
bis(2-Chloroethoxy) methane	ug/kg		97.9 U
Bis-(2-chloroethyl) ether	ug/kg		4530
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*12800*
Butylbenzylphthalate	ug/kg	900	*97.9 U*

Location			RCB85
Sample Date			18 Dec 2018
Sample Name			MBS-121818-1
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			RCB
Project			
Outfall			16th Ave S
Carbazole	ug/kg		98.4
Chrysene	ug/kg	2800	585
Coarse Sand	%		17.1
Copper	mg/kg	390	146
cPAH	ug/kg	100	525.25
Dibenzo(A,H)anthracene	ug/kg	230	114
Dibenzofuran	ug/kg	540	97.9 U
Diesel Range Hydrocarbons	mg/kg	2000	746
Diethylphthalate	ug/kg	1200	97.9 U
Dimethylphthalate	ug/kg	160	*88.9 J*
Di-N-Butylphthalate	ug/kg	1400	580
Di-N-Octylphthalate	ug/kg	6200	461
Fine Gravel	%		0.7
Fine Sand	%		10.2
Fluoranthene	ug/kg	2500	725
Fluorene	ug/kg	540	97.9 U
Hexachlorobenzene	ug/kg	70	*97.9 U*
Hexachlorobutadiene	ug/kg	120	*97.9 U*
Hexachlorocyclopentadiene	ug/kg		489 U
Hexachloroethane	ug/kg		97.9 U
HPAH	ug/kg	17000	4354
Indeno(1,2,3-Cd)pyrene	ug/kg	690	285
Isophorone	ug/kg		97.9 U
Lead	mg/kg	530	61.3
LPAH	ug/kg	5200	431 J
Medium Sand	%		16
Mercury	mg/kg	0.59	0.0878 J
Motor Oil Range	mg/kg	2000	*3570*
Naphthalene	ug/kg	2100	66.4 J
Nitrobenzene	ug/kg		97.9 U
N-Nitroso-Di-N-Propylamine	ug/kg		97.9 U
N-Nitrosodiphenylamine	ug/kg	40	*97.9 U*
Pentachlorophenol	ug/kg	690	*489 U*
Phenanthrene	ug/kg	1500	314
Phenol	ug/kg	1200	*648*
Polychlorinated Biphenyls	ug/kg	1000	*456*
Pyrene	ug/kg	3300	691
Solids, Total	%		41.26
Total Organic Carbon	%		6.65
Very Coarse Sand	%		14.8
Very Fine Sand	%		8.1
Zinc	mg/kg	960	*601*

Location			RCB76
Sample Date			18 Dec 2018
Sample Name			MBS-121818-2
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			RCB
Project			
Outfall			17th Ave S SD
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*95.8 U*
1,2-Dichlorobenzene	ug/kg	50	*95.8 U*
1,3-Dichlorobenzene	ug/kg		95.8 U
1,4-Dichlorobenzene	ug/kg	110	95.8 U
1-Methylnaphthalene	ug/kg		95.8 U
2,2'-Oxybis(1-chloropropane)	ug/kg		95.8 U
2,4,5-Trichlorophenol	ug/kg		479 U
2,4,6-Trichlorophenol	ug/kg		479 U
2,4-Dichlorophenol	ug/kg		479 U
2,4-Dimethylphenol	ug/kg	29	*479 U*
2,4-Dinitrophenol	ug/kg		958 U
2,4-Dinitrotoluene	ug/kg		479 U
2,6-Dinitrotoluene	ug/kg		479 U
2-Chloronaphthalene	ug/kg		95.8 U
2-Chlorophenol	ug/kg		95.8 U
2-Methylnaphthalene	ug/kg	670	95.8 U
2-Methylphenol	ug/kg	63	*95.8 U*
2-Nitroaniline	ug/kg		479 U
2-Nitrophenol	ug/kg		95.8 U
3,3`-Dichlorobenzidine	ug/kg		479 U
3-Nitroaniline	ug/kg		479 U
4,6-Dinitro-2-Methylphenol	ug/kg		958 U
4-Bromophenyl phenyl ether	ug/kg		95.8 U
4-Chloro-3-Methylphenol	ug/kg		479 U
4-Chloroaniline	ug/kg		479 U
4-Chlorophenyl Phenylether	ug/kg		95.8 U
4-Methylphenol	ug/kg	670	95.8 U
4-Nitroaniline	ug/kg		479 U
4-Nitrophenol	ug/kg		479 U
Acenaphthene	ug/kg	500	95.8 U
Acenaphthylene	ug/kg	1300	95.8 U
Anthracene	ug/kg	960	95.8 U
Aroclor 1016	ug/kg		19.7 U
Aroclor 1221	ug/kg		19.7 U
Aroclor 1232	ug/kg		19.7 U
Aroclor 1242	ug/kg		19.7 U
Aroclor 1248	ug/kg		19.7 U
Aroclor 1260	ug/kg		63.3
Arsenic	mg/kg	93	12.2
Benzo(A)anthracene	ug/kg	1600	452

Benzo(A)pyrene	ug/kg	1600	554
Benzo(G,H,I)perylene	ug/kg	720	407
Benzofluoranthenes, Total	ug/kg	3600	1730
Benzoic acid	ug/kg	650	*3170*
Benzyl alcohol	ug/kg	73	*8730*
bis(2-Chloroethoxy) methane	ug/kg		95.8 U
Bis-(2-chloroethyl) ether	ug/kg		95.8 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*89000*
Butylbenzylphthalate	ug/kg	900	*1150*
Carbazole	ug/kg		95.8 U
Chrysene	ug/kg	2800	*1540*
Coarse Sand	%		17.8
Copper	mg/kg	390	93.8
cPAH	ug/kg	100	867
Dibenzo(A,H)anthracene	ug/kg	230	124
Dibenzofuran	ug/kg	540	95.8 U
Diesel Range Hydrocarbons	mg/kg	2000	690
Diethylphthalate	ug/kg	1200	95.8 U
Dimethylphthalate	ug/kg	160	*1230*
Di-N-Butylphthalate	ug/kg	1400	679
Di-N-Octylphthalate	ug/kg	6200	654
Fine Gravel	%		3.4
Fine Sand	%		6.4
Fluoranthene	ug/kg	2500	360
Fluorene	ug/kg	540	95.8 U
Hexachlorobenzene	ug/kg	70	*95.8 U*
Hexachlorobutadiene	ug/kg	120	*95.8 U*
Hexachlorocyclopentadiene	ug/kg		479 U
Hexachloroethane	ug/kg		95.8 U
HPAH	ug/kg	17000	5945
Indeno(1,2,3-Cd)pyrene	ug/kg	690	298
Isophorone	ug/kg		95.8 U
Lead	mg/kg	530	28.5
LPAH	ug/kg	5200	257.4 J
Medium Sand	%		12.9
Mercury	mg/kg	0.59	0.0471 U
Motor Oil Range	mg/kg	2000	*3180*
Naphthalene	ug/kg	2100	60.4 J
Nitrobenzene	ug/kg		95.8 U
N-Nitroso-Di-N-Propylamine	ug/kg		95.8 U
N-Nitrosodiphenylamine	ug/kg	40	*95.8 U*
Pentachlorophenol	ug/kg	690	*479 U*
Phenanthrene	ug/kg	1500	197
Phenol	ug/kg	1200	*910*
Polychlorinated Biphenyls	ug/kg	1000	63.3
Pyrene	ug/kg	3300	480
Solids, Total	%		52.92
Total Organic Carbon	%		7.5
Very Coarse Sand	%		24.6

Very Fine Sand	%		4.3
Zinc	mg/kg	960	*500*

Location			CB309	CB322	CB323	CB324	CB331
Sample Date			24 Jan 2018	24 Jan 2018	15 Feb 2018	15 Feb 2018	12 Oct 2018
Sample Name			CEW-012418-1	CEW-012418-2	CEW-021518-1	MKJ-021518-1	CEW-101218-2
Drainage Type			SD	SD	SD	SD	SD
Sample Method			Grab-Manual	Grab-Manual	Grab-Manual	Grab-Manual	Grab-Manual
Location Type			CB	CB	CB	CB	CB
Project							
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD
Analyte	Unit	CSL/2LAET					
1,2,4-Trichlorobenzene	ug/kg	51	289 U	298 U	97.1 U	99.2 U	59.6 U
1,2-Dichlorobenzene	ug/kg	50	289 U	298 U	97.1 U	99.2 U	59.6 U
1,3-Dichlorobenzene	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
1,4-Dichlorobenzene	ug/kg	110	289 U	298 U	97.1 U	99.2 U	59.6 U
1-Methylnaphthalene	ug/kg		289 U	298 U	33	120	40.4 J
2,2'-Oxybis(1-chloropropane)	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
2,4,5-Trichlorophenol	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2,4,6-Trichlorophenol	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2,4-Dichlorophenol	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2,4-Dimethylphenol	ug/kg	29	1440 U	1490 U	486 U	496 U	298 U
2,4-Dinitrophenol	ug/kg		2890 U	2980 U	971 U	992 U	596 U
2,4-Dinitrotoluene	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2,6-Dinitrotoluene	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2-Chloronaphthalene	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
2-Chlorophenol	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
2-Methylnaphthalene	ug/kg	670	289 U	298 U	68.5	221	89.1
2-Methylphenol	ug/kg	63	289 U	298 U	97.1 U	99.2 U	89.4
2-Nitroaniline	ug/kg		1440 U	1490 U	486 U	496 U	298 U
2-Nitrophenol	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
3,3`-Dichlorobenzidine	ug/kg		1440 U	1490 U	486 U	496 U	298 U
3-Nitroaniline	ug/kg		1440 U	1490 U	486 U	496 U	298 U
4,6-Dinitro-2-Methylphenol	ug/kg		2890 U	2980 U	971 U	992 U	596 U
4-Bromophenyl phenyl ether	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
4-Chloro-3-Methylphenol	ug/kg		1440 U	1490 U	486 U	496 U	298 U
4-Chloroaniline	ug/kg		1440 U	1490 U	486 U	496 U	298 U
4-Chlorophenyl Phenylether	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
4-Methylphenol	ug/kg	670	974	298 U	671	209	164
4-Nitroaniline	ug/kg		1440 U	1490 U	486 U	496 U	298 U
4-Nitrophenol	ug/kg		1440 U	1490 U	486 U	496 U	298 U
Acenaphthene	ug/kg	500	289 U	298 U	29.5	1510	59.6 U
Acenaphthylene	ug/kg	1300	289 U	298 U	24.7	181	59.6 U
Anthracene	ug/kg	960	289 U	101	51.4	9510 R	81.5
Aroclor 1016	ug/kg		19.5 U	18.7 U	99.3 U	19.9 U	19.8
Aroclor 1221	ug/kg		19.5 U	18.7 U	99.3 U	19.9 U	19.8
Aroclor 1232	ug/kg		19.5 U	18.7 U	99.3 U	19.9 U	19.8
Aroclor 1242	ug/kg		19.5 U	18.7 U	99.3 U	135	19.8
Aroclor 1248	ug/kg		28.5	167	177	19.9 U	50
Aroclor 1254	ug/kg		72.7	104	323	76.1	39.6
Aroclor 1260	ug/kg		32.6	42.3	126	124 J	31.2
Arsenic	mg/kg	93	14	35.3	15.6	153	8.92
Benzo(A)anthracene	ug/kg	1600	159	208	159	15500 R	230
Benzo(A)pyrene	ug/kg	1600	206	291	191	8310	266
Benzo(G,H,I)perylene	ug/kg	720	300	512	395 J	2990 J	331
Benzofluoranthenes, Total	ug/kg	3600	358	688	417	14200	685
Benzoic acid	ug/kg	650	1320	2980 U	447	992 U	508 J
Benzyl alcohol	ug/kg	73	289 U	298 U	112	309	63.9
bis(2-Chloroethoxy) methane	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
Bis-(2-chloroethyl) ether	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	7320	3100	12600	7740	43800
Butylbenzylphthalate	ug/kg	900	363	298 U	435	506	805
Carbazole	ug/kg		289 U	298 U	75.6	5580	76.2
Chrysene	ug/kg	2800	311	701	406	16000 R	689
Coarse Sand	%		11.2	0.9	16.9	21.1	6.1
Copper	mg/kg	390	127 J	140 J	128	277	114
cPAH	ug/kg	100	334.21	479.51	286.48	12240 J	412.45
Dibenzo(A,H)anthracene	ug/kg	230	289 U	298 U	49.8	1240	75.4
Dibenzofuran	ug/kg	540	289 U	298 U	38.2	836	55.3 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	422	713	325	942	431
Diesel Range Hydrocarbons	mg/kg	2000					
Diethylphthalate	ug/kg	1200	289 U	298 U	97.1 U	99.2 U	59.6 U
Dimethylphthalate	ug/kg	160	289 U	298 U	118	247	70.4
Di-N-Butylphthalate	ug/kg	1400	649	97.4	599	205	83.6
Di-N-Octylphthalate	ug/kg	6200	820	298 U	434	172	2020
Fine Gravel	%		0.1	0.1	1.1	0.6	0.1
Fine Sand	%		10.1	0.5	10.2	10.2	14.9
Fluoranthene	ug/kg	2500	459	884	635 J	41100 J	666
Fluorene	ug/kg	540	289 U	298 U	62.3	2700	63.1
Hexachlorobenzene	ug/kg	70	289 U	298 U	97.1 U	99.2 U	59.6 U
Hexachlorobutadiene	ug/kg	120	289 U	298 U	97.1 U	99.2 U	59.6 U
Hexachlorocyclopentadiene	ug/kg		1440 U	1490 U	486 U	496 U	298 U
Hexachloroethane	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
HPAH	ug/kg	17000	2347	4549	3127.8 J	134780	3868.4
Indeno(1,2,3-Cd)pyrene	ug/kg	690	156	323	139	3040	179
Isophorone	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
Lead	mg/kg	530	45.4	56.8	522	209	91.6
LPAH	ug/kg	5200	393	490	671.9	40680 J	861.6
Medium Sand	%		18.5	0.7	19.1	29.7	14.8
Mercury	mg/kg	0.59	0.0639	0.0653	0.125	0.182	0.0847
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	2430	3340	2130	3120	2710
Motor Oil Range	mg/kg	2000					
Naphthalene	ug/kg	2100	289 U	298 U	95	179	272
Nitrobenzene	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
N-Nitroso-Di-N-Propylamine	ug/kg		289 U	298 U	97.1 U	99.2 U	59.6 U
N-Nitrosodiphenylamine	ug/kg	40	289 U	298 U	97.1 U	99.2 U	67.8
Pentachlorophenol	ug/kg	690	1440 U	1490 U	486 U	496 U	298 U
Phenanthrene	ug/kg	1500	393	389	409	26600 R	445
Phenol	ug/kg	1200	183	298 U	158	149	133
Polychlorinated Biphenyls	ug/kg	1000	133.8	313.3	626	335.1 J	120.8
Pyrene	ug/kg	3300	398	942	736	32400 R	747
Solids, Total	%		55.66	52.27	50.37	51.56	54.59
Total Organic Carbon	%		2.82 J	2.97 J	3.97	3.65	5.47
Very Coarse Sand	%		5.8	0.3	13	13.1	2.1
Very Fine Sand	%		11.8	1	9.1	8.4	16.7
Zinc	mg/kg	960	515	692	725	1650	847

MH18 15 Feb 2018 MKJ-021518-4 SD Grab-Manual Inline Diagonal Ave S CSO/SD	MH18 15 Feb 2018 MKJ-021518-5 SD Grab-Manual Inline Diagonal Ave S CSO/SD	MH231 15 Feb 2018 MKJ-021518-6 SD Grab-Manual Inline Diagonal Ave S CSO/SD	MH40 15 May 2018 CEW-51518-1 SD Grab-Manual Inline Diagonal Ave S CSO/SD	MH46 12 Oct 2018 CEW-101218-1 SD Grab-Manual Inline Diagonal Ave S CSO/SD	ODS59 15 May 2018 CEW-51518-2 SD Grab-Manual ODS Diagonal Ave S CSO/SD	RCB60 12 Mar 2018 CEW-031218-1 SD Grab-Manual RCB Diagonal Ave S CSO/SD
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
84.2 J	72.4 J	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
290	253	96.9 U	101 U	19.7 U	57.4 J	99.7 U
132	103	96.9 U	101 U	11.9 J	98.9 U	51.3 J
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
979 U	977 U	969 U	1010 U	197 U	989 U	997 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
315	250	96.9 U	101 U	26.9	48.1 J	91.9 J
97.9 U	97.7 U	96.9 U	101 U	30.1	98.9 U	99.7 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
979 U	977 U	969 U	1010 U	197 U	989 U	997 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
193	184	96.9 U	101 U	35.2	98.9 U	6200
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
300	166	96.9 U	101 U	6.1 J	98.9 U	305
67.5 J	81.3 J	96.9 U	101 U	19.7 U	98.9 U	109
615	490	96.9 U	101 U	22.4	38.2 J	1490
196 U	976 U	19.2 U	19.6 U	19.9	18.9 U	19.4 U
196 U	976 U	19.2 U	19.6 U	19.9	18.9 U	19.4 U
196 U	976 U	19.2 U	19.6 U	19.9	18.9 U	19.4 U
31100	28600	27.5	19.6 U	19.9	18.9 U	19.4 U
196 U	976 U	19.2 U	30.4	28.3	18.9 U	48.9 J
13100	13300	19.2 U	61.5	30.9	104	93.9
1860	2440	19.2 U	70	14.6	459	189
30.2	27.5	9.39	15.4	133	25.2 U	22.2
2340	1840	96.9 U	150	65.1	114	2330
2480	2070	96.9 U	179	92.1	146	2330
1790	1340	45.7 J	330	124	265	1200
4610	3810	50.2 J	534	215	351	4380
586 J	977 U	969 U	1010 U	469	989 U	894 J
97.9 U	97.7 U	96.9 U	101 U	62.6	98.9 U	87.6 J
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
7540	7000	417	943	7780	1290	6290
3240	743	96.9 U	296	142	166	121
952	730	96.9 U	101 U	39.3	98.9 U	311
3100	2440	74.5 J	349	141	239	3650
10.6	10.2	13.2	8.3	9	6.5	4.1
270	248	49.3	151 J	64.8	137 J	134
3622.8	2931.8	83.285 J	293.07 J	140.32	231.77 J	
677	386	96.9 U	59.2 J	30	54.2 J	508
208	141	96.9 U	101 U	15.7 J	98.9 U	160
1810	1850	90.1	50.4 U	67.5	512	689
97.9 U	97.7 U	96.9 U	101 U	38	98.9 U	99.7 U
74.7 J	74.6 J	96.9 U	101 U	16.4 J	98.9 U	99.7 U
121	158	86 J	87.1 J	48	87.1 J	92 J
248	97.7 U	96.9 U	101 U	76.5	98.9 U	201
0.3	0.2	4.8	1.2	1.2	0.2	1.4
5	4.4	1.6	10.1	8.5	16.1	3.3
8090	6340	47.3 J	370	169	220	5170
329	249	96.9 U	101 U	8.9 J	98.9 U	311
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
489 U	489 U	484 U	504 U	98.5 U	494 U	499 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
30887	24376	296.1 J	2532.2	1097.2	1783.2	25718
1460	1180	96.9 U	185	68	152	1050
167	141	96.9 U	101 U	19.7 U	98.9 U	99.7 U
418	384	11.9	330	42.3	110	84.9
5805.5 J	3776.3 J	22.9 J	198.1	211.7 J	276.7	4599
5.7	6.3	3.7	23.2	15.7	27.3	2.9
4.72	4.29	0.0227	0.107	0.0586	0.216	0.338
4760	5110	524	418	503	1860	4070
224	170	96.9 U	28.1 J	61.3	95.5 J	114
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	99.7 U
97.9 U	97.7 U	96.9 U	101 U	19.7 U	98.9 U	60.7 J
489 U	489 U	484 U	504 U	119	494 U	499 U
4270	2620	22.9 J	170	113	143	2270
189	132	96.9 U	101 U	92.7	104	638
46060	44340	27.5	161.9	73.8	563	331.8 J
6340	4970	78.4 J	376	193	242	5100
49.01	47.93	83.32	99.08	32.43	49.47	36.43
4.63	6.16	0.71	6.45	3.28	4.69	6.74
15.7	15.9	30.4	6.6	6.9	3.3	5.5
9.8	9.6	0.7	20.3	10.4	15.8	5.8
657	625	181	1410 J	870	574 J	393

ST1 18 Apr 2018 ST1-041818 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST1 18 Apr 2018 ST1-041818-G SD Grab-Manual Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST2 23 Jul 2018 DIAGHAMLIN_072318 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST2 23 Jul 2018 DIAGNORTON_072318 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST2 23 Jul 2018 DIAGRORY_072318 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST2 23 Jul 2018 DIAGSIFT_072318 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST2 23 Jul 2018 DIAGTRENT_072318 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
62.3 J	18.3 J		26.4 J	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
995 U	197 U		586 U	597 U	582 U	597 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
94.4 J	22.9		39.5 J	26.7 J	25.4 J	40.3 J
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
498 U	98.5 U		293 U	298 U	291 U	298 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
995 U	197 U		586 U	597 U	582 U	597 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
4840	19.7 U		274	161	58.2 U	235
498 U	98.5 U		293 U	298 U	291 U	298 U
498 U	98.5 U		293 U	298 U	291 U	298 U
99.5 U	9 J		18 J	59.7 U	58.2 U	59.7 U
99.5 U	24.8		58.6 U	59.7 U	58.2 U	59.7 U
184	63.2		60.4	28.3 J	35.5 J	42.1 J
19.9 U	19.6 U		23.6 U	19.8 U	18.2 U	19.4 U
19.9 U	19.6 U		23.6 U	19.8 U	18.2 U	19.4 U
19.9 U	19.6 U		23.6 U	19.8 U	18.2 U	19.4 U
19.9 U	19.6 U		23.6 U	19.8 U	18.2 U	19.4 U
77.1	19.6 U		57.1	45	44.4	83.1
116	19.6 U		46.6	38.9	56.3	107
61.5	19.6 U		21.7 J	19.4 J	24.3	51.9
16.1	5.95 U		8.17 U	6.45 J	4.65 J	9.67 J
346	244 J		146	94.4	126	125
453	330 J		142	98.4	152	154
382	148 J		111	127	197	203
730	412		310	196	308	321
1600	197 U		284 J	282 J	423 J	627 J
99.5 U	19.7 U		58.6 U	116	58.2 U	179
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		138	59.7 U	58.2 U	59.7 U
7080	297 J		4340	3550	3600	6970
99.5 U	19.7 U		262	59.7 U	202	115
102	22		48.4 J	59.7 U	58.2 U	43.5 J
621	354 J		252	177	242	308
	22.8	15.8	3.1	2.4	6.4	4.2
150	34.7		96.5	95.9 J	69.4 J	169 J
608.71	437.16 J		209.79	148.01	227.38 J	225.22 J
99.5 U	55.8		58.6 U	59.7 U	43.9 J	32.1 J
99.5 U	7.8 J		58.6 U	59.7 U	58.2 U	59.7 U
660	59.5 U					
			433	503	273	754
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		35.4 J	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		22.8 J	34.8 J	39.2 J	44.9 J
2420	19.7 U		1110	200	209	413
	6.2	1.4	0.2	0.1	0.1	0.1
	0.1	15.1	12.5	11.7	17.7	9.7
874	240 J		340	212	306	335
99.5 U	18.4 J		35.5 J	59.7 U	22.2 J	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
498 U	98.5 U		293 U	298 U	291 U	298 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
4685.75	2247.8 J		1776.5	1235.4	1854.9 J	2015.1 J
220	157		79.5	68.6	120	107
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
68.2	11.3		55.9	60.1	45.8	93
1353.25	310.8 J		483.8 J	227 J	293.9 J	337.6 J
	3.2	38.1	14.6	16.7	43.9	14.8
0.131	0.0391		0.0388 U	0.0575	0.0386 U	0.0953
3270	259					
			2090	2920	1720	4360
471	15.4 J		82.9	51.7 J	47.2 J	70.5
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	59.7 U
99.5 U	19.7 U		58.6 U	59.7 U	58.2 U	49.5 J
498 U	98.5 U		293 U	298 U	291 U	298 U
549	180 J		287	147	189	225
518	19.7 U		88.8	72.3	109	125
294.4	19.6 U		125.4 J	103.3 J	125	242
1010	307 J		396	262	360	430
45.03	83.33		60.16	49.41	60.59	34.22
5.39 J	0.4		4.94	6.57	2.94	6.86
	31.8	4.7	1.1	1.1	0.2	0.8
	0.1	6.5	8.3	17.7	17.9	10.2
581	119		322	364	321	622

ST7 19 Apr 2018 ST7-041918 SD SedTrap Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD	ST7 19 Apr 2018 ST7-041918-G SD Grab-Manual Inline w/Active SPU Sed Trap Diagonal Ave S CSO/SD
98.3 U	*98 U*
98.3 U	*98 U*
98.3 U	98 U
98.3 U	98 U
1120	98 U
98.3 U	98 U
492 U	490 U
492 U	490 U
492 U	490 U
492 U	*490 U*
983 U	980 U
492 U	490 U
492 U	490 U
98.3 U	98 U
98.3 U	98 U
1540	98 U
98.3 U	*98 U*
492 U	490 U
98.3 U	98 U
492 U	490 U
492 U	490 U
983 U	980 U
98.3 U	98 U
492 U	490 U
492 U	490 U
98.3 U	98 U
1660	98 U
492 U	490 U
492 U	490 U
98.3 U	98 U
98.3 U	98 U
56.1 J	98 U
18.6 U	18 U
18.6 U	18 U
18.6 U	18 U
18.6 U	18 U
43.2	18 U
78.4	18 U
37.6 J	18 U
10.2	14.7 U
175	40.6 J
222	98 U
98.3 U	98 U
420	98.8 J
983 U	*980 U*
98.3 U	*98 U*
98.3 U	98 U
98.3 U	98 U
7440	565
98.3 U	98 U
98.3 U	98 U
273	74.6 J
	39.6
71.4	38.6
308.805	88.186 J
98.3 U	98 U
98.3 U	98 U
1630	63.5 U
98.3 U	98 U
98.3 U	98 U
98.3 U	98 U
428	98 U
	1.6
	1.9
407	67.3 J
50.3 J	98 U
98.3 U	*98 U*
98.3 U	98 U
492 U	490 U
98.3 U	98 U
2162.45	358.2 J
98.3 U	98 U
98.3 U	98 U
38.9	16.9
728.7	98 U
	29.2
0.0526	0.0215 U
4590	472
312	98 U
98.3 U	98 U
98.3 U	98 U
98.3 U	*98 U*
492 U	490 U
212	98 U
641	98 U
196.4 J	18 U
518	76.9 J
59	79.8
2.4 J	0.77
	18.2
	0.5
308	141

Location			MH23
Sample Date			12 Jun 2018
Sample Name			MKJ-061218-1
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			Georgetown SD
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*97.6 U*
1,2-Dichlorobenzene	ug/kg	50	*97.6 U*
1,3-Dichlorobenzene	ug/kg		97.6 U
1,4-Dichlorobenzene	ug/kg	110	97.6 U
1-Methylnaphthalene	ug/kg		97.6 U
2,2'-Oxybis(1-chloropropane)	ug/kg		97.6 U
2,4,5-Trichlorophenol	ug/kg		488 U
2,4,6-Trichlorophenol	ug/kg		488 U
2,4-Dichlorophenol	ug/kg		488 U
2,4-Dimethylphenol	ug/kg	29	*488 U*
2,4-Dinitrophenol	ug/kg		976 U
2,4-Dinitrotoluene	ug/kg		488 U
2,6-Dinitrotoluene	ug/kg		488 U
2-Chloronaphthalene	ug/kg		97.6 U
2-Chlorophenol	ug/kg		97.6 U
2-Methylnaphthalene	ug/kg	670	41.4 J
2-Methylphenol	ug/kg	63	*97.6 U*
2-Nitroaniline	ug/kg		488 U
2-Nitrophenol	ug/kg		97.6 U
3,3`-Dichlorobenzidine	ug/kg		488 U
3-Nitroaniline	ug/kg		488 U
4,6-Dinitro-2-Methylphenol	ug/kg		976 U
4-Bromophenyl phenyl ether	ug/kg		97.6 U
4-Chloro-3-Methylphenol	ug/kg		488 U
4-Chloroaniline	ug/kg		488 U
4-Chlorophenyl Phenylether	ug/kg		97.6 U
4-Methylphenol	ug/kg	670	82 J
4-Nitroaniline	ug/kg		488 U
4-Nitrophenol	ug/kg		488 U
Acenaphthene	ug/kg	500	108
Acenaphthylene	ug/kg	1300	34.5 J
Anthracene	ug/kg	960	404
Aroclor 1016	ug/kg		18.5 U
Aroclor 1221	ug/kg		18.5 U
Aroclor 1232	ug/kg		18.5 U
Aroclor 1242	ug/kg		18.5 U
Aroclor 1248	ug/kg		67.7
Aroclor 1254	ug/kg		98.1
Aroclor 1260	ug/kg		86.8
Arsenic	mg/kg	93	7.94 U

Benzo(A)anthracene	ug/kg	1600	*1800*
Benzo(A)pyrene	ug/kg	1600	*1990*
Benzo(G,H,I)perylene	ug/kg	720	*1490*
Benzofluoranthenes, Total	ug/kg	3600	*4560*
Benzoic acid	ug/kg	650	*748 J*
Benzyl alcohol	ug/kg	73	*111*
bis(2-Chloroethoxy) methane	ug/kg		97.6 U
Bis-(2-chloroethyl) ether	ug/kg		97.6 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*7040*
Butylbenzylphthalate	ug/kg	900	*599*
Carbazole	ug/kg		369
Chrysene	ug/kg	2800	*2810*
Coarse Sand	%		14.1
Copper	mg/kg	390	86.8
cPAH	ug/kg	100	2965.3
Dibenzo(A,H)anthracene	ug/kg	230	*433*
Dibenzofuran	ug/kg	540	71.8 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	355
Diethylphthalate	ug/kg	1200	97.6 U
Dimethylphthalate	ug/kg	160	*111*
Di-N-Butylphthalate	ug/kg	1400	190
Di-N-Octylphthalate	ug/kg	6200	97.6 U
Fine Gravel	%		0.2
Fine Sand	%		14.7
Fluoranthene	ug/kg	2500	*4680*
Fluorene	ug/kg	540	150
Hexachlorobenzene	ug/kg	70	*97.6 U*
Hexachlorobutadiene	ug/kg	120	*97.6 U*
Hexachlorocyclopentadiene	ug/kg		488 U
Hexachloroethane	ug/kg		97.6 U
HPAH	ug/kg	17000	*22913*
Indeno(1,2,3-Cd)pyrene	ug/kg	690	*1380*
Isophorone	ug/kg		97.6 U
Lead	mg/kg	530	65.7
LPAH	ug/kg	5200	3316.5 J
Medium Sand	%		22.6
Mercury	mg/kg	0.59	0.0845
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*2430*
Naphthalene	ug/kg	2100	90 J
Nitrobenzene	ug/kg		97.6 U
N-Nitroso-Di-N-Propylamine	ug/kg		97.6 U
N-Nitrosodiphenylamine	ug/kg	40	*97.6 U*
Pentachlorophenol	ug/kg	690	*488 U*
Phenanthrene	ug/kg	1500	*2530*
Phenol	ug/kg	1200	115
Polychlorinated Biphenyls	ug/kg	1000	*252.6*
Pyrene	ug/kg	3300	*3770*
Solids, Total	%		62.5
Total Organic Carbon	%		9.42 J

Very Coarse Sand	%		8.2
Very Fine Sand	%		13.2
Zinc	mg/kg	960	*432*

Location			MH41
Sample Date			31 Jul 2018
Sample Name			CEW-073118-1
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			Hamm Creek
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*97.5 U*
1,2-Dichlorobenzene	ug/kg	50	*97.5 U*
1,3-Dichlorobenzene	ug/kg		97.5 U
1,4-Dichlorobenzene	ug/kg	110	97.5 U
1-Methylnaphthalene	ug/kg		42.9 J
2,2'-Oxybis(1-chloropropane)	ug/kg		97.5 U
2,4,5-Trichlorophenol	ug/kg		487 U
2,4,6-Trichlorophenol	ug/kg		487 U
2,4-Dichlorophenol	ug/kg		487 U
2,4-Dimethylphenol	ug/kg	29	*487 U*
2,4-Dinitrophenol	ug/kg		975 U
2,4-Dinitrotoluene	ug/kg		487 U
2,6-Dinitrotoluene	ug/kg		487 U
2-Chloronaphthalene	ug/kg		97.5 U
2-Chlorophenol	ug/kg		97.5 U
2-Methylnaphthalene	ug/kg	670	39.6 J
2-Methylphenol	ug/kg	63	*97.5 U*
2-Nitroaniline	ug/kg		487 U
2-Nitrophenol	ug/kg		97.5 U
3,3`-Dichlorobenzidine	ug/kg		487 U
3-Nitroaniline	ug/kg		487 U
4,6-Dinitro-2-Methylphenol	ug/kg		975 U
4-Bromophenyl phenyl ether	ug/kg		97.5 U
4-Chloro-3-Methylphenol	ug/kg		487 U
4-Chloroaniline	ug/kg		487 U
4-Chlorophenyl Phenylether	ug/kg		97.5 U
4-Methylphenol	ug/kg	670	72.3 J
4-Nitroaniline	ug/kg		487 U
4-Nitrophenol	ug/kg		487 U
Acenaphthene	ug/kg	500	351
Acenaphthylene	ug/kg	1300	54.7 J
Anthracene	ug/kg	960	52.3 J
Aroclor 1016	ug/kg		19.8 U
Aroclor 1221	ug/kg		19.8 U
Aroclor 1232	ug/kg		19.8 U
Aroclor 1242	ug/kg		19.8 U
Aroclor 1248	ug/kg		19.8 U
Aroclor 1254	ug/kg		19.8 U
Aroclor 1260	ug/kg		19.8 U
Arsenic	mg/kg	93	37.6
Benzo(A)anthracene	ug/kg	1600	90.1 J
Benzo(A)pyrene	ug/kg	1600	128
Benzo(G,H,I)perylene	ug/kg	720	151
Benzofluoranthenes, Total	ug/kg	3600	293

Benzoic acid	ug/kg	650	*2300*
Benzyl alcohol	ug/kg	73	*142*
bis(2-Chloroethoxy) methane	ug/kg		97.5 U
Bis-(2-chloroethyl) ether	ug/kg		97.5 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	676
Butylbenzylphthalate	ug/kg	900	*320*
Carbazole	ug/kg		37.2 J
Chrysene	ug/kg	2800	262
Copper	mg/kg	390	62.1
cPAH	ug/kg	100	192.35 J
Dibenzo(A,H)anthracene	ug/kg	230	39.6 J
Dibenzofuran	ug/kg	540	316
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	132 U
Diethylphthalate	ug/kg	1200	97.5 U
Dimethylphthalate	ug/kg	160	*97.5 U*
Di-N-Butylphthalate	ug/kg	1400	42.8 J
Di-N-Octylphthalate	ug/kg	6200	97.5 U
Fluoranthene	ug/kg	2500	179
Fluorene	ug/kg	540	321
Hexachlorobenzene	ug/kg	70	*97.5 U*
Hexachlorobutadiene	ug/kg	120	*97.5 U*
Hexachlorocyclopentadiene	ug/kg		487 U
Hexachloroethane	ug/kg		97.5 U
HPAH	ug/kg	17000	1410.5 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	75.8 J
Isophorone	ug/kg		97.5 U
Lead	mg/kg	530	86.4
LPAH	ug/kg	5200	1169.6 J
Mercury	mg/kg	0.59	0.0653 U
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	747
Naphthalene	ug/kg	2100	31.6 J
Nitrobenzene	ug/kg		97.5 U
N-Nitroso-Di-N-Propylamine	ug/kg		97.5 U
N-Nitrosodiphenylamine	ug/kg	40	*97.5 U*
Pentachlorophenol	ug/kg	690	*487 U*
Phenanthrene	ug/kg	1500	359
Phenol	ug/kg	1200	*479*
Polychlorinated Biphenyls	ug/kg	1000	19.8 U
Pyrene	ug/kg	3300	192
Solids, Total	%		37.93
Total Organic Carbon	%		5.18
Zinc	mg/kg	960	*795*

Location			MH38
Sample Date			25 May 2018
Sample Name			MKJ-052518-2
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			Head of Slip 2 SD
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*94.3 U*
1,2-Dichlorobenzene	ug/kg	50	*49.1 J*
1,3-Dichlorobenzene	ug/kg		94.3 U
1,4-Dichlorobenzene	ug/kg	110	94.3 U
1-Methylnaphthalene	ug/kg		54.7 J
2,2'-Oxybis(1-chloropropane)	ug/kg		94.3 U
2,4,5-Trichlorophenol	ug/kg		472 U
2,4,6-Trichlorophenol	ug/kg		472 U
2,4-Dichlorophenol	ug/kg		472 U
2,4-Dimethylphenol	ug/kg	29	*472 U*
2,4-Dinitrophenol	ug/kg		943 U
2,4-Dinitrotoluene	ug/kg		472 U
2,6-Dinitrotoluene	ug/kg		472 U
2-Chloronaphthalene	ug/kg		94.3 U
2-Chlorophenol	ug/kg		94.3 U
2-Methylnaphthalene	ug/kg	670	66.4 J
2-Methylphenol	ug/kg	63	*94.3 U*
2-Nitroaniline	ug/kg		472 U
2-Nitrophenol	ug/kg		94.3 U
3,3`-Dichlorobenzidine	ug/kg		472 U
3-Nitroaniline	ug/kg		472 U
4,6-Dinitro-2-Methylphenol	ug/kg		943 U
4-Bromophenyl phenyl ether	ug/kg		94.3 U
4-Chloro-3-Methylphenol	ug/kg		472 U
4-Chloroaniline	ug/kg		472 U
4-Chlorophenyl Phenylether	ug/kg		94.3 U
4-Methylphenol	ug/kg	670	94.3 U
4-Nitroaniline	ug/kg		472 U
4-Nitrophenol	ug/kg		472 U
Acenaphthene	ug/kg	500	94.3 U
Acenaphthylene	ug/kg	1300	94.3 U
Anthracene	ug/kg	960	94.3 U
Aroclor 1016	ug/kg		19.3 U
Aroclor 1221	ug/kg		19.3 U
Aroclor 1232	ug/kg		19.3 U
Aroclor 1242	ug/kg		19.3 U
Aroclor 1248	ug/kg		19.3 U
Aroclor 1254	ug/kg		27.3
Aroclor 1260	ug/kg		19.3 U
Arsenic	mg/kg	93	14.8

Benzo(A)anthracene	ug/kg	1600	94.3 U
Benzo(A)pyrene	ug/kg	1600	94.3 U
Benzo(G,H,I)perylene	ug/kg	720	54.3 J
Benzofluoranthenes, Total	ug/kg	3600	189 U
Benzoic acid	ug/kg	650	*943 U*
Benzyl alcohol	ug/kg	73	*94.3 U*
bis(2-Chloroethoxy) methane	ug/kg		94.3 U
Bis-(2-chloroethyl) ether	ug/kg		94.3 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	458
Butylbenzylphthalate	ug/kg	900	*94.3 U*
Carbazole	ug/kg		94.3 U
Chrysene	ug/kg	2800	40.2 J
Coarse Sand	%		26.2
Copper	mg/kg	390	62.5
cPAH	ug/kg	100	85.292
Dibenzo(A,H)anthracene	ug/kg	230	94.3 U
Dibenzofuran	ug/kg	540	94.3 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	145
Diethylphthalate	ug/kg	1200	94.3 U
Dimethylphthalate	ug/kg	160	*94.3 U*
Di-N-Butylphthalate	ug/kg	1400	48.9 J
Di-N-Octylphthalate	ug/kg	6200	94.3 U
Fine Gravel	%		2.6
Fine Sand	%		2.5
Fluoranthene	ug/kg	2500	54.3 J
Fluorene	ug/kg	540	94.3 U
Hexachlorobenzene	ug/kg	70	*94.3 U*
Hexachlorobutadiene	ug/kg	120	*94.3 U*
Hexachlorocyclopentadiene	ug/kg		472 U
Hexachloroethane	ug/kg		94.3 U
HPAH	ug/kg	17000	227
Indeno(1,2,3-Cd)pyrene	ug/kg	690	94.3 U
Isophorone	ug/kg		94.3 U
Lead	mg/kg	530	79.8 J
LPAH	ug/kg	5200	207.5
Medium Sand	%		16
Mercury	mg/kg	0.59	0.0282
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	494
Naphthalene	ug/kg	2100	143
Nitrobenzene	ug/kg		94.3 U
N-Nitroso-Di-N-Propylamine	ug/kg		94.3 U
N-Nitrosodiphenylamine	ug/kg	40	*94.3 U*
Pentachlorophenol	ug/kg	690	*472 U*
Phenanthrene	ug/kg	1500	64.5 J
Phenol	ug/kg	1200	94.3 U
Polychlorinated Biphenyls	ug/kg	1000	27.3
Pyrene	ug/kg	3300	78.2 J
Solids, Total	%		76.37
Total Organic Carbon	%		0.53

Very Coarse Sand	%		14
Very Fine Sand	%		0.7
Zinc	mg/kg	960	198

Location			HP-ST4	HP-ST6	HP-ST6	MH36	RCB84
Sample Date			17 Apr 2018	18 Apr 2018	18 Apr 2018	12 Jan 2018	12 Jan 2018
Sample Name			HP-ST4-041718	HP-ST6-041818	HP-ST6-041818-G	CEW-011218-3	CEW-011218-1
Drainage Type			SD	SD	SD	SD	SD
Sample Method			SedTrap	SedTrap	Grab-Manual	Grab-Manual	Grab-Manual
Location Type			Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline	RCB
Project							
Outfall			Highland Park Wy SW SD	Highland Park Wy SW SD	Highland Park Wy SW SD	Highland Park Wy SW SD	Highland Park Wy SW SD
Analyte	Unit	CSL/2LAET					
1,2,4-Trichlorobenzene	ug/kg	51	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*96.1 U*
1,2-Dichlorobenzene	ug/kg	50	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*96.1 U*
1,3-Dichlorobenzene	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
1,4-Dichlorobenzene	ug/kg	110	94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
1-Methylnaphthalene	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	36.8
2,2'-Oxybis(1-chloropropane)	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
2,4,5-Trichlorophenol	ug/kg		473 U	487 U	497 U	499 U	480 U
2,4,6-Trichlorophenol	ug/kg		473 U	487 U	497 U	499 U	480 U
2,4-Dichlorophenol	ug/kg		473 U	487 U	497 U	499 U	480 U
2,4-Dimethylphenol	ug/kg	29	*473 U*	*487 U*	*497 U*	*499 U*	*480 U*
2,4-Dinitrophenol	ug/kg		947 U	974 U	993 U	997 U	961 U
2,4-Dinitrotoluene	ug/kg		473 U	487 U	497 U	499 U	480 U
2,6-Dinitrotoluene	ug/kg		473 U	487 U	497 U	499 U	480 U
2-Chloronaphthalene	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
2-Chlorophenol	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
2-Methylnaphthalene	ug/kg	670	94.7 U	97.4 U	99.3 U	99.7 U	72.1
2-Methylphenol	ug/kg	63	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*92.4*
2-Nitroaniline	ug/kg		473 U	487 U	497 U	499 U	480 U
2-Nitrophenol	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
3,3`-Dichlorobenzidine	ug/kg		473 U	487 U	497 U	499 U	480 U
3-Nitroaniline	ug/kg		473 U	487 U	497 U	499 U	480 U
4,6-Dinitro-2-Methylphenol	ug/kg		947 U	974 U	993 U	997 U	961 U
4-Bromophenyl phenyl ether	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
4-Chloro-3-Methylphenol	ug/kg		473 U	487 U	497 U	499 U	480 U
4-Chloroaniline	ug/kg		473 U	487 U	497 U	499 U	480 U
4-Chlorophenyl Phenylether	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
4-Methylphenol	ug/kg	670	323	82.6 J	99.3 U	113	617
4-Nitroaniline	ug/kg		473 U	487 U	497 U	499 U	480 U
4-Nitrophenol	ug/kg		473 U	487 U	497 U	499 U	480 U
Acenaphthene	ug/kg	500	94.7 U	152	171	188	46
Acenaphthylene	ug/kg	1300	94.7 U	97.4 U	36.9 J	75.3	31.1
Anthracene	ug/kg	960	94.7 U	76.5 J	134	238	112
Aroclor 1016	ug/kg		18.9 U	19.4 U	19.2 U	19.8 U	19.8 U
Aroclor 1221	ug/kg		18.9 U	19.4 U	19.2 U	19.8 U	19.8 U
Aroclor 1232	ug/kg		18.9 U	19.4 U	19.2 U	19.8 U	19.8 U
Aroclor 1242	ug/kg		18.9 U	19.4 U	19.2 U	19.8 U	19.8 U
Aroclor 1248	ug/kg		18.9 U	99.8	88.3	100	65.5
Aroclor 1254	ug/kg		19.7	83.7	75.9	137	64.7
Aroclor 1260	ug/kg		18.9 U	54.4	49.7	91.8	50.7 J
Arsenic	mg/kg	93	7.88 U	47.4	17.2	42.5	15.7
Benzo(A)anthracene	ug/kg	1600	94.7 U	182	221	585	206
Benzo(A)pyrene	ug/kg	1600	94.7 U	293	159	467	179
Benzo(G,H,I)perylene	ug/kg	720	94.7 U	270	268	319	241
Benzofluoranthenes, Total	ug/kg	3600	189 U	446	460	1180	492
Benzoic acid	ug/kg	650	373 J	412 J	*1040*	*883*	*961 U*
Benzyl alcohol	ug/kg	73	*87.4 J*	*400*	*321*	*911*	*679*
bis(2-Chloroethoxy) methane	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
Bis-(2-chloroethyl) ether	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	572	*3820*	*3880*	*3990*	*8230*
Butylbenzylphthalate	ug/kg	900	*94.7 U*	*368*	*314*	*333*	*9520*
Carbazole	ug/kg		94.7 U	48.9 J	99.3 U	69.2	93.3
Chrysene	ug/kg	2800	94.7 U	408	380	863	527
Coarse Sand	%				14.2	9.4	10.4
Copper	mg/kg	390	46	111	82.9	121	162
cPAH	ug/kg	100	85.6835 U	384.23	262.06	717.53	288.59
Dibenzo(A,H)anthracene	ug/kg	230	94.7 U	97.4 U	99.3 U	104	96.1 U
Dibenzofuran	ug/kg	540	94.7 U	77.1 J	73.1 J	75.4	54.7
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	119	457	536	496	996
Diethylphthalate	ug/kg	1200	94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
Dimethylphthalate	ug/kg	160	*94.7 U*	*97.4 U*	*99.3 U*	*166*	*114*
Di-N-Butylphthalate	ug/kg	1400	94.7 U	118	99.3 U	99.7 U	150
Di-N-Octylphthalate	ug/kg	6200	94.7 U	263	99.3 U	99.7 U	869
Fine Gravel	%				1.7	1.2	0.5
Fine Sand	%				2.5	5.6	6.3
Fluoranthene	ug/kg	2500	72.8 J	592	558	*1710*	893
Fluorene	ug/kg	540	94.7 U	123	121	137	93.7
Hexachlorobenzene	ug/kg	70	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*96.1 U*
Hexachlorobutadiene	ug/kg	120	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*96.1 U*
Hexachlorocyclopentadiene	ug/kg		473 U	487 U	497 U	499 U	480 U
Hexachloroethane	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
HPAH	ug/kg	17000	553.4 J	2959.4	2813	7096	3567
Indeno(1,2,3-Cd)pyrene	ug/kg	690	94.7 U	97.4 U	113	238	153
Isophorone	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
Lead	mg/kg	530	36.8	174	105	263 J	177 J
LPAH	ug/kg	5200	94.7 U	722.1	695.8 J	995.7	1125
Medium Sand	%				15.4	24.3	16.5
Mercury	mg/kg	0.59	0.0405 U	0.205	0.14	0.226	0.196
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	765	*2450*	*2240*	*2420*	*5480*
Naphthalene	ug/kg	2100	94.7 U	59.9 J	71.9 J	75.4	93.2
Nitrobenzene	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
N-Nitroso-Di-N-Propylamine	ug/kg		94.7 U	97.4 U	99.3 U	99.7 U	96.1 U
N-Nitrosodiphenylamine	ug/kg	40	*94.7 U*	*97.4 U*	*99.3 U*	*99.7 U*	*96.1 U*
Pentachlorophenol	ug/kg	690	*473 U*	*487 U*	*497 U*	*499 U*	*480 U*
Phenanthrene	ug/kg	1500	94.7 U	262	161	282	749
Phenol	ug/kg	1200	92.5 J	150	148	193	124
Polychlorinated Biphenyls	ug/kg	1000	76.4	*276.7*	*213.9*	*328.8*	*180.9 J*
Pyrene	ug/kg	3300	102	671	654	1630	876

Solids, Total	%		61.72	35.81	50.86	23.71	39.89
Total Organic Carbon	%		4.7 J	8.33 J	1.64	9.1 J	7.1 J
Very Coarse Sand	%				6.2	4.7	5.8
Very Fine Sand	%				2.8	7.7	5.9
Zinc	mg/kg	960	158	*799*	*494*	*489*	*767*

Location			SL4-T6	SL4-T6
Sample Date			17 Apr 2018	17 Apr 2018
Sample Name			SL4-T6-041718	SL4-T6-041718-G
Drainage Type			SD	SD
Sample Method			SedTrap	Grab-Manual
Location Type			Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap
Project				
Outfall			I-5 SD at Slip 4	I-5 SD at Slip 4
Analyte	Unit	CSL/2LAET		
1,2,4-Trichlorobenzene	ug/kg	51	*98.9 U*	19.2 U
1,2-Dichlorobenzene	ug/kg	50	*98.9 U*	19.2 U
1,3-Dichlorobenzene	ug/kg		98.9 U	19.2 U
1,4-Dichlorobenzene	ug/kg	110	98.9 U	19.2 U
1-Methylnaphthalene	ug/kg		98.9 U	19.2 U
2,2'-Oxybis(1-chloropropane)	ug/kg		98.9 U	19.2 U
2,4,5-Trichlorophenol	ug/kg		494 U	96 U
2,4,6-Trichlorophenol	ug/kg		494 U	96 U
2,4-Dichlorophenol	ug/kg		494 U	96 U
2,4-Dimethylphenol	ug/kg	29	*494 U*	*96 U*
2,4-Dinitrophenol	ug/kg		989 U	192 U
2,4-Dinitrotoluene	ug/kg		494 U	96 U
2,6-Dinitrotoluene	ug/kg		494 U	96 U
2-Chloronaphthalene	ug/kg		98.9 U	19.2 U
2-Chlorophenol	ug/kg		98.9 U	19.2 U
2-Methylnaphthalene	ug/kg	670	98.9 U	19.2 U
2-Methylphenol	ug/kg	63	*98.9 U*	19.2 U
2-Nitroaniline	ug/kg		494 U	96 U
2-Nitrophenol	ug/kg		98.9 U	19.2 U
3,3`-Dichlorobenzidine	ug/kg		494 U	96 U
3-Nitroaniline	ug/kg		494 U	96 U
4,6-Dinitro-2-Methylphenol	ug/kg		989 U	192 U
4-Bromophenyl phenyl ether	ug/kg		98.9 U	19.2 U
4-Chloro-3-Methylphenol	ug/kg		494 U	96 U
4-Chloroaniline	ug/kg		494 U	96 U
4-Chlorophenyl Phenylether	ug/kg		98.9 U	19.2 U
4-Methylphenol	ug/kg	670	160	19.2 U
4-Nitroaniline	ug/kg		494 U	96 U
4-Nitrophenol	ug/kg		494 U	96 U
Acenaphthene	ug/kg	500	98.9 U	6.6 J
Acenaphthylene	ug/kg	1300	98.9 U	19.2 U
Anthracene	ug/kg	960	60.6 J	19.2 U
Aroclor 1016	ug/kg		18.3 U	19 U
Aroclor 1221	ug/kg		18.3 U	19 U
Aroclor 1232	ug/kg		18.3 U	19 U
Aroclor 1242	ug/kg		18.3 U	19 U
Aroclor 1248	ug/kg		28.2	19 U
Aroclor 1254	ug/kg		32	19 U
Aroclor 1260	ug/kg		28.5	19 U
Arsenic	mg/kg	93	16.1	13.4 U
Benzo(A)anthracene	ug/kg	1600	252	10.4 J
Benzo(A)pyrene	ug/kg	1600	273	16.1 J
Benzo(G,H,I)perylene	ug/kg	720	107	18.2 J
Benzofluoranthenes, Total	ug/kg	3600	636	34.6 J
Benzoic acid	ug/kg	650	*757 J*	192 U

Benzyl alcohol	ug/kg	73	*109*	19.2 U
bis(2-Chloroethoxy) methane	ug/kg		98.9 U	19.2 U
Bis-(2-chloroethyl) ether	ug/kg		98.9 U	19.2 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*3510*	434
Butylbenzylphthalate	ug/kg	900	*22300*	19.2 U
Carbazole	ug/kg		69.3 J	7.2 J
Chrysene	ug/kg	2800	344	23.1
Coarse Sand	%			39
Copper	mg/kg	390	23.5	77.4
cPAH	ug/kg	100	389.965	25.621 J
Dibenzo(A,H)anthracene	ug/kg	230	98.9 U	19.2 U
Dibenzofuran	ug/kg	540	98.9 U	19.2 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	268	57.5 U
Diethylphthalate	ug/kg	1200	98.9 U	19.2 U
Dimethylphthalate	ug/kg	160	*98.9 U*	19.2 U
Di-N-Butylphthalate	ug/kg	1400	353	49.1
Di-N-Octylphthalate	ug/kg	6200	177	19.2 U
Fine Gravel	%			0.9
Fine Sand	%			1.3
Fluoranthene	ug/kg	2500	739	29.7
Fluorene	ug/kg	540	30.5 J	5.1 J
Hexachlorobenzene	ug/kg	70	*98.9 U*	19.2 U
Hexachlorobutadiene	ug/kg	120	*98.9 U*	*19.2 U*
Hexachlorocyclopentadiene	ug/kg		494 U	96 U
Hexachloroethane	ug/kg		98.9 U	19.2 U
HPAH	ug/kg	17000	3155.9	174.2 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	98.9 U	9.5 J
Isophorone	ug/kg		98.9 U	19.2 U
Lead	mg/kg	530	4.66	137
LPAH	ug/kg	5200	541 J	41.1 J
Medium Sand	%			17.9
Mercury	mg/kg	0.59	0.0372	0.029
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	1900	363
Naphthalene	ug/kg	2100	42 J	19.2 U
Nitrobenzene	ug/kg		98.9 U	19.2 U
N-Nitroso-Di-N-Propylamine	ug/kg		98.9 U	19.2 U
N-Nitrosodiphenylamine	ug/kg	40	*98.9 U*	19.2 U
Pentachlorophenol	ug/kg	690	*494 U*	96 U
Phenanthrene	ug/kg	1500	309	29.4
Phenol	ug/kg	1200	106	19.2 U
Polychlorinated Biphenyls	ug/kg	1000	125.3	19 U
Pyrene	ug/kg	3300	706	32.6
Solids, Total	%		67.28	86.41
Total Organic Carbon	%		3.1 J	1.51
Very Coarse Sand	%			7.4
Very Fine Sand	%			0.2
Zinc	mg/kg	960	41	180

Location			MH47
Sample Date			12 Oct 2018
Sample Name			CEW-101218-4
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			KCIA SD#1
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	19.6 U
1,2-Dichlorobenzene	ug/kg	50	19.6 U
1,3-Dichlorobenzene	ug/kg		19.6 U
1,4-Dichlorobenzene	ug/kg	110	19.6 U
1-Methylnaphthalene	ug/kg		19.6 U
2,2'-Oxybis(1-chloropropane)	ug/kg		19.6 U
2,4,5-Trichlorophenol	ug/kg		97.9 U
2,4,6-Trichlorophenol	ug/kg		97.9 U
2,4-Dichlorophenol	ug/kg		97.9 U
2,4-Dimethylphenol	ug/kg	29	*97.9 U*
2,4-Dinitrophenol	ug/kg		196 U
2,4-Dinitrotoluene	ug/kg		97.9 U
2,6-Dinitrotoluene	ug/kg		97.9 U
2-Chloronaphthalene	ug/kg		19.6 U
2-Chlorophenol	ug/kg		19.6 U
2-Methylnaphthalene	ug/kg	670	19.6 U
2-Methylphenol	ug/kg	63	19.6 U
2-Nitroaniline	ug/kg		97.9 U
2-Nitrophenol	ug/kg		19.6 U
3,3`-Dichlorobenzidine	ug/kg		97.9 U
3-Nitroaniline	ug/kg		97.9 U
4,6-Dinitro-2-Methylphenol	ug/kg		196 U
4-Bromophenyl phenyl ether	ug/kg		19.6 U
4-Chloro-3-Methylphenol	ug/kg		97.9 U
4-Chloroaniline	ug/kg		97.9 U
4-Chlorophenyl Phenylether	ug/kg		19.6 U
4-Methylphenol	ug/kg	670	19.6 U
4-Nitroaniline	ug/kg		97.9 U
4-Nitrophenol	ug/kg		97.9 U
Acenaphthene	ug/kg	500	19.1 J
Acenaphthylene	ug/kg	1300	9.7 J
Anthracene	ug/kg	960	139
Aroclor 1016	ug/kg		19.4
Aroclor 1221	ug/kg		19.4
Aroclor 1232	ug/kg		19.4
Aroclor 1242	ug/kg		19.4
Aroclor 1248	ug/kg		19.4
Aroclor 1254	ug/kg		17.7
Aroclor 1260	ug/kg		15.3
Arsenic	mg/kg	93	8.27

Benzo(A)anthracene	ug/kg	1600	410
Benzo(A)pyrene	ug/kg	1600	370
Benzo(G,H,I)perylene	ug/kg	720	164
Benzofluoranthenes, Total	ug/kg	3600	802
Benzoic acid	ug/kg	650	263
Benzyl alcohol	ug/kg	73	*57.5*
bis(2-Chloroethoxy) methane	ug/kg		19.6 U
Bis-(2-chloroethyl) ether	ug/kg		19.6 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	603
Butylbenzylphthalate	ug/kg	900	*670*
Carbazole	ug/kg		78.4
Chrysene	ug/kg	2800	578
Coarse Sand	%		17.3
Copper	mg/kg	390	42.9
cPAH	ug/kg	100	540.42
Dibenzo(A,H)anthracene	ug/kg	230	70.1
Dibenzofuran	ug/kg	540	12.4 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	50.6
Diethylphthalate	ug/kg	1200	19.6 U
Dimethylphthalate	ug/kg	160	16.6 J
Di-N-Butylphthalate	ug/kg	1400	17.2 J
Di-N-Octylphthalate	ug/kg	6200	19.6 U
Fine Gravel	%		0.7
Fine Sand	%		13.6
Fluoranthene	ug/kg	2500	950
Fluorene	ug/kg	540	34.6
Hexachlorobenzene	ug/kg	70	19.6 U
Hexachlorobutadiene	ug/kg	120	*19.6 U*
Hexachlorocyclopentadiene	ug/kg		97.9 U
Hexachloroethane	ug/kg		19.6 U
HPAH	ug/kg	17000	4267.1
Indeno(1,2,3-Cd)pyrene	ug/kg	690	154
Isophorone	ug/kg		19.6 U
Lead	mg/kg	530	87.9
LPAH	ug/kg	5200	681.8 J
Medium Sand	%		29.3
Mercury	mg/kg	0.59	0.0581
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	309
Naphthalene	ug/kg	2100	11.4 J
Nitrobenzene	ug/kg		19.6 U
N-Nitroso-Di-N-Propylamine	ug/kg		19.6 U
N-Nitrosodiphenylamine	ug/kg	40	19.6 U
Pentachlorophenol	ug/kg	690	81.2 J
Phenanthrene	ug/kg	1500	468
Phenol	ug/kg	1200	19.6 U
Polychlorinated Biphenyls	ug/kg	1000	33
Pyrene	ug/kg	3300	769
Solids, Total	%		64.77
Total Organic Carbon	%		3.81

Very Coarse Sand	%		9.6
Very Fine Sand	%		7.6
Zinc	mg/kg	960	169

Location			MH223
Sample Date			25 May 2018
Sample Name			MKJ-052518-7
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			S Brighton St SD
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*95.4 U*
1,2-Dichlorobenzene	ug/kg	50	*95.4 U*
1,3-Dichlorobenzene	ug/kg		95.4 U
1,4-Dichlorobenzene	ug/kg	110	95.4 U
1-Methylnaphthalene	ug/kg		95.4 U
2,2'-Oxybis(1-chloropropane)	ug/kg		95.4 U
2,4,5-Trichlorophenol	ug/kg		477 U
2,4,6-Trichlorophenol	ug/kg		477 U
2,4-Dichlorophenol	ug/kg		477 U
2,4-Dimethylphenol	ug/kg	29	*477 U*
2,4-Dinitrophenol	ug/kg		954 U
2,4-Dinitrotoluene	ug/kg		477 U
2,6-Dinitrotoluene	ug/kg		477 U
2-Chloronaphthalene	ug/kg		95.4 U
2-Chlorophenol	ug/kg		95.4 U
2-Methylnaphthalene	ug/kg	670	33.3 J
2-Methylphenol	ug/kg	63	*95.4 U*
2-Nitroaniline	ug/kg		477 U
2-Nitrophenol	ug/kg		95.4 U
3,3`-Dichlorobenzidine	ug/kg		477 U
3-Nitroaniline	ug/kg		477 U
4,6-Dinitro-2-Methylphenol	ug/kg		954 U
4-Bromophenyl phenyl ether	ug/kg		95.4 U
4-Chloro-3-Methylphenol	ug/kg		477 U
4-Chloroaniline	ug/kg		477 U
4-Chlorophenyl Phenylether	ug/kg		95.4 U
4-Methylphenol	ug/kg	670	95.4 U
4-Nitroaniline	ug/kg		477 U
4-Nitrophenol	ug/kg		477 U
Acenaphthene	ug/kg	500	78 J
Acenaphthylene	ug/kg	1300	35.5 J
Anthracene	ug/kg	960	122
Aroclor 1016	ug/kg		19.8 U
Aroclor 1221	ug/kg		19.8 U
Aroclor 1232	ug/kg		19.8 U
Aroclor 1242	ug/kg		19.8 U
Aroclor 1248	ug/kg		103
Aroclor 1254	ug/kg		96.6
Aroclor 1260	ug/kg		144
Arsenic	mg/kg	93	29.6

Benzo(A)anthracene	ug/kg	1600	277
Benzo(A)pyrene	ug/kg	1600	241
Benzo(G,H,I)perylene	ug/kg	720	230
Benzofluoranthenes, Total	ug/kg	3600	759
Benzoic acid	ug/kg	650	*954 U*
Benzyl alcohol	ug/kg	73	*95.4 U*
bis(2-Chloroethoxy) methane	ug/kg		95.4 U
Bis-(2-chloroethyl) ether	ug/kg		95.4 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*4040*
Butylbenzylphthalate	ug/kg	900	*410*
Carbazole	ug/kg		145
Chrysene	ug/kg	2800	602
Coarse Sand	%		4.1
Copper	mg/kg	390	158
cPAH	ug/kg	100	388.18
Dibenzo(A,H)anthracene	ug/kg	230	54.9 J
Dibenzofuran	ug/kg	540	61.1 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	935
Diethylphthalate	ug/kg	1200	95.4 U
Dimethylphthalate	ug/kg	160	*95.4 U*
Di-N-Butylphthalate	ug/kg	1400	*22100*
Di-N-Octylphthalate	ug/kg	6200	125
Fine Gravel	%		0.3
Fine Sand	%		7.6
Fluoranthene	ug/kg	2500	857
Fluorene	ug/kg	540	120
Hexachlorobenzene	ug/kg	70	*95.4 U*
Hexachlorobutadiene	ug/kg	120	*95.4 U*
Hexachlorocyclopentadiene	ug/kg		477 U
Hexachloroethane	ug/kg		95.4 U
HPAH	ug/kg	17000	3976.9
Indeno(1,2,3-Cd)pyrene	ug/kg	690	156
Isophorone	ug/kg		95.4 U
Lead	mg/kg	530	150 J
LPAH	ug/kg	5200	845.8
Medium Sand	%		5.7
Mercury	mg/kg	0.59	0.267
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*3350*
Naphthalene	ug/kg	2100	47.3 J
Nitrobenzene	ug/kg		95.4 U
N-Nitroso-Di-N-Propylamine	ug/kg		95.4 U
N-Nitrosodiphenylamine	ug/kg	40	*95.4 U*
Pentachlorophenol	ug/kg	690	*477 U*
Phenanthrene	ug/kg	1500	443
Phenol	ug/kg	1200	113
Polychlorinated Biphenyls	ug/kg	1000	*343.6*
Pyrene	ug/kg	3300	800
Solids, Total	%		36.16
Total Organic Carbon	%		3.12

Very Coarse Sand	%		1.6
Very Fine Sand	%		9.8
Zinc	mg/kg	960	*970*

Location			MH100	Myr-ST1	Myr-ST1	Myr-ST1	Myr-ST1	Myr-ST1
Sample Date			25 May 2018	31 May 2018	31 May 2018	31 May 2018	31 May 2018	31 May 2018
Sample Name			MKJ-052518-6	SMYRTLE_HAMLIN_053118	SMYRTLE_NORTON_053118	SMYRTLE_RORY_053118	SMYRTLE_SIFT_053118	SMYRTLE_TRENT_053118
Drainage Type			SD	SD	SD	SD	SD	SD
Sample Method			Grab-Manual	sedtrap	sedtrap	sedtrap	sedtrap	sedtrap
Location Type			Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap
Project								
Outfall			S Myrtle St SD	S Myrtle St SD	S Myrtle St SD	S Myrtle St SD	S Myrtle St SD	S Myrtle St SD
Analyte	Unit	CSL/2LAET						
1,2,4-Trichlorobenzene	ug/kg	51	*95.9 U*					
1,2-Dichlorobenzene	ug/kg	50	*95.9 U*					
1,3-Dichlorobenzene	ug/kg		95.9 U					
1,4-Dichlorobenzene	ug/kg	110	95.9 U					
1-Methylnaphthalene	ug/kg		46.5 J		213 J	126 J		246 UJ
2,2'-Oxybis(1-chloropropane)	ug/kg		95.9 U					
2,4,5-Trichlorophenol	ug/kg		479 U					
2,4,6-Trichlorophenol	ug/kg		479 U					
2,4-Dichlorophenol	ug/kg		479 U					
2,4-Dimethylphenol	ug/kg	29	*479 U*					
2,4-Dinitrophenol	ug/kg		959 U					
2,4-Dinitrotoluene	ug/kg		479 U					
2,6-Dinitrotoluene	ug/kg		479 U					
2-Chloronaphthalene	ug/kg		95.9 U					
2-Chlorophenol	ug/kg		95.9 U					
2-Methylnaphthalene	ug/kg	670	111		417 J	254 J		240 J
2-Methylphenol	ug/kg	63	*95.9 U*					
2-Nitroaniline	ug/kg		479 U					
2-Nitrophenol	ug/kg		95.9 U					
3,3`-Dichlorobenzidine	ug/kg		479 U					
3-Nitroaniline	ug/kg		479 U					
4,6-Dinitro-2-Methylphenol	ug/kg		959 U					
4-Bromophenyl phenyl ether	ug/kg		95.9 U					
4-Chloro-3-Methylphenol	ug/kg		479 U					
4-Chloroaniline	ug/kg		479 U					
4-Chlorophenyl Phenylether	ug/kg		95.9 U					
4-Methylphenol	ug/kg	670	95.9 U					
4-Nitroaniline	ug/kg		479 U					
4-Nitrophenol	ug/kg		479 U					
Acenaphthene	ug/kg	500	30.3 J		164 J	244 UJ		144 J
Acenaphthylene	ug/kg	1300	53.4 J		188 J	244 UJ		136 J
Anthracene	ug/kg	960	101		286 J	294 J		228 J
Aroclor 1016	ug/kg		18.8 U		19.5 U	19.8 U		19.7 U
Aroclor 1221	ug/kg		18.8 U		19.5 U	19.8 U		19.7 U
Aroclor 1232	ug/kg		18.8 U		19.5 U	19.8 U		19.7 U
Aroclor 1242	ug/kg		18.8 U		19.5 U	19.8 U		19.7 U
Aroclor 1248	ug/kg		403		1150	1390		1130
Aroclor 1254	ug/kg		571		862	1070		976
Aroclor 1260	ug/kg		170		314	435		340
Arsenic	mg/kg	93	17.9 U		13.1	14.6		16.8
Benzo(A)anthracene	ug/kg	1600	306		676 J	659 J		531 J
Benzo(A)pyrene	ug/kg	1600	380		638 J	596 J		520 J
Benzo(G,H,I)perylene	ug/kg	720	431		*920 J*	*824 J*		*682 J*
Benzofluoranthenes, Total	ug/kg	3600	932		1230 J	1380 J		1110 J
Benzoic acid	ug/kg	650	339 J					
Benzyl alcohol	ug/kg	73	*95.9 U*					
bis(2-Chloroethoxy) methane	ug/kg		95.9 U					
Bis-(2-chloroethyl) ether	ug/kg		95.9 U					
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*4100*					
Butylbenzylphthalate	ug/kg	900	*1300*					
Carbazole	ug/kg		68.3 J					
Chrysene	ug/kg	2800	497		1070 J	1100 J		830 J
Coarse Sand	%		1	4.5			6.2	
Copper	mg/kg	390	*444*		*544*	*620*		*657*
cPAH	ug/kg	100	578.77		1068.9 J	1059.4 J		904.4 J
Dibenzo(A,H)anthracene	ug/kg	230	102		216 J	*251 J*		212 J
Dibenzofuran	ug/kg	540	41 J		153 J	134 J		246 UJ
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	814					
Diethylphthalate	ug/kg	1200	95.9 U					
Dimethylphthalate	ug/kg	160	*329*					
Di-N-Butylphthalate	ug/kg	1400	541					
Di-N-Octylphthalate	ug/kg	6200	325					
Fine Gravel	%		0.3	0.3			0.1	
Fine Sand	%		2.9	5.4			6.1	
Fluoranthene	ug/kg	2500	510		1470 J	1290 J		1000 J
Fluorene	ug/kg	540	46.9 J		383 J	225 J		193 J
Hexachlorobenzene	ug/kg	70	*95.9 U*					
Hexachlorobutadiene	ug/kg	120	*95.9 U*					
Hexachlorocyclopentadiene	ug/kg		479 U					
Hexachloroethane	ug/kg		95.9 U					
HPAH	ug/kg	17000	4003		8491 J	8412 J		6682 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	292		501 J	482 J		417 J
Isophorone	ug/kg		95.9 U					
Lead	mg/kg	530	*498 J*		*538*	*616*		*557*
LPAH	ug/kg	5200	743.6		2271 J	1416 J		1492 J
Medium Sand	%		7.5	6.1			8.4	
Mercury	mg/kg	0.59	*1.39*					
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*2520*					
Naphthalene	ug/kg	2100	126		190 J	149 J		164 J
Nitrobenzene	ug/kg		95.9 U					
N-Nitroso-Di-N-Propylamine	ug/kg		95.9 U					
N-Nitrosodiphenylamine	ug/kg	40	*79.6 J*					
Pentachlorophenol	ug/kg	690	*479 U*					
Phenanthrene	ug/kg	1500	386		1060 J	748 J		627 J
Phenol	ug/kg	1200	292					
Polychlorinated Biphenyls	ug/kg	1000	*1144*		*2326*	*2895*		*2446*
Pyrene	ug/kg	3300	553		1770 J	1830 J		1380 J
Solids, Total	%		68.54					
Total Organic Carbon	%		8.37					
Very Coarse Sand	%		0.9	5.3			4.5	
Very Fine Sand	%		7.6	8.9			9.9	
Zinc	mg/kg	960	*2940*		*3250*	*4020*		*3210*

Location			RCB312
Sample Date			25 May 2018
Sample Name			MKJ-052518-1
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			CB
Project			
Outfall			S Nevada St SD
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*98.4 U*
1,2-Dichlorobenzene	ug/kg	50	*98.4 U*
1,3-Dichlorobenzene	ug/kg		98.4 U
1,4-Dichlorobenzene	ug/kg	110	98.4 U
1-Methylnaphthalene	ug/kg		98.4 U
2,2'-Oxybis(1-chloropropane)	ug/kg		98.4 U
2,4,5-Trichlorophenol	ug/kg		492 U
2,4,6-Trichlorophenol	ug/kg		492 U
2,4-Dichlorophenol	ug/kg		492 U
2,4-Dimethylphenol	ug/kg	29	*492 U*
2,4-Dinitrophenol	ug/kg		984 U
2,4-Dinitrotoluene	ug/kg		492 U
2,6-Dinitrotoluene	ug/kg		492 U
2-Chloronaphthalene	ug/kg		98.4 U
2-Chlorophenol	ug/kg		98.4 U
2-Methylnaphthalene	ug/kg	670	56.2 J
2-Methylphenol	ug/kg	63	*98.4 U*
2-Nitroaniline	ug/kg		492 U
2-Nitrophenol	ug/kg		98.4 U
3,3`-Dichlorobenzidine	ug/kg		492 U
3-Nitroaniline	ug/kg		492 U
4,6-Dinitro-2-Methylphenol	ug/kg		984 U
4-Bromophenyl phenyl ether	ug/kg		98.4 U
4-Chloro-3-Methylphenol	ug/kg		492 U
4-Chloroaniline	ug/kg		492 U
4-Chlorophenyl Phenylether	ug/kg		98.4 U
4-Methylphenol	ug/kg	670	*1190*
4-Nitroaniline	ug/kg		492 U
4-Nitrophenol	ug/kg		492 U
Acenaphthene	ug/kg	500	98.4 U
Acenaphthylene	ug/kg	1300	40.7 J
Anthracene	ug/kg	960	68 J
Aroclor 1016	ug/kg		19.8 U
Aroclor 1221	ug/kg		19.8 U
Aroclor 1232	ug/kg		19.8 U
Aroclor 1242	ug/kg		19.8 U
Aroclor 1248	ug/kg		19.8 U
Aroclor 1254	ug/kg		468
Aroclor 1260	ug/kg		159
Arsenic	mg/kg	93	13.8

Benzo(A)anthracene	ug/kg	1600	299
Benzo(A)pyrene	ug/kg	1600	237
Benzo(G,H,I)perylene	ug/kg	720	404
Benzofluoranthenes, Total	ug/kg	3600	637
Benzoic acid	ug/kg	650	370 J
Benzyl alcohol	ug/kg	73	*98.4 U*
bis(2-Chloroethoxy) methane	ug/kg		98.4 U
Bis-(2-chloroethyl) ether	ug/kg		98.4 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*10300*
Butylbenzylphthalate	ug/kg	900	*733*
Carbazole	ug/kg		64.9 J
Chrysene	ug/kg	2800	714
Coarse Sand	%		6.1
Copper	mg/kg	390	110
cPAH	ug/kg	100	377.78
Dibenzo(A,H)anthracene	ug/kg	230	54.6 J
Dibenzofuran	ug/kg	540	36.1 J
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	935
Diethylphthalate	ug/kg	1200	98.4 U
Dimethylphthalate	ug/kg	160	*126*
Di-N-Butylphthalate	ug/kg	1400	450
Di-N-Octylphthalate	ug/kg	6200	332
Fine Gravel	%		0.8
Fine Sand	%		5.6
Fluoranthene	ug/kg	2500	670
Fluorene	ug/kg	540	62.3 J
Hexachlorobenzene	ug/kg	70	*98.4 U*
Hexachlorobutadiene	ug/kg	120	*98.4 U*
Hexachlorocyclopentadiene	ug/kg		492 U
Hexachloroethane	ug/kg		98.4 U
HPAH	ug/kg	17000	4032.6
Indeno(1,2,3-Cd)pyrene	ug/kg	690	182
Isophorone	ug/kg		98.4 U
Lead	mg/kg	530	116 J
LPAH	ug/kg	5200	823.5
Medium Sand	%		7.4
Mercury	mg/kg	0.59	0.0605
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*3740*
Naphthalene	ug/kg	2100	83.5 J
Nitrobenzene	ug/kg		98.4 U
N-Nitroso-Di-N-Propylamine	ug/kg		98.4 U
N-Nitrosodiphenylamine	ug/kg	40	*102*
Pentachlorophenol	ug/kg	690	*492 U*
Phenanthrene	ug/kg	1500	569
Phenol	ug/kg	1200	100
Polychlorinated Biphenyls	ug/kg	1000	*627*
Pyrene	ug/kg	3300	835
Solids, Total	%		50.55
Total Organic Carbon	%		11.1

Very Coarse Sand	%		5.2
Very Fine Sand	%		8.5
Zinc	mg/kg	960	*1010*

Location			MH5	NST1	NST1	NST3	NST4
Sample Date			13 Apr 2018	16 Apr 2018	16 Apr 2018	16 Apr 2018	17 Apr 2018
Sample Name			MKJ-041318-1	NST1-041618	NST1-041618-G	NST3-041618	NST4-041718
Drainage Type			SD	SD	SD	SD	SD
Sample Method			Grab-Manual	SedTrap	Grab-Manual	SedTrap	SedTrap
Location Type			Inline	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap
Project							
Outfall			S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD	S Norfolk St CSO/PS17 EOF/SD
Analyte	Unit	CSL/2LAET					
1,2,4-Trichlorobenzene	ug/kg	51	200 U	99.2 U	99.4 U	96.4 U	296 U
1,2-Dichlorobenzene	ug/kg	50	200 U	99.2 U	99.4 U	96.4 U	296 U
1,3-Dichlorobenzene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
1,4-Dichlorobenzene	ug/kg	110	200 U	99.2 U	99.4 U	96.4 U	296 U
1-Methylnaphthalene	ug/kg		200 U	99.2 U	46.8 J	96.4 U	296 U
2,2'-Oxybis(1-chloropropane)	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2,4,5-Trichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4,6-Trichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4-Dichlorophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,4-Dimethylphenol	ug/kg	29	998 U	496 U	497 U	482 U	1480 U
2,4-Dinitrophenol	ug/kg		2000 U	992 U	994 U	964 U	2960 U
2,4-Dinitrotoluene	ug/kg		998 U	496 U	497 U	482 U	1480 U
2,6-Dinitrotoluene	ug/kg		998 U	496 U	497 U	482 U	1480 U
2-Chloronaphthalene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2-Chlorophenol	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
2-Methylnaphthalene	ug/kg	670	200 U	43.3 J	75.5 J	96.4 U	296 U
2-Methylphenol	ug/kg	63	200 U	99.2 U	99.4 U	96.4 U	296 U
2-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
2-Nitrophenol	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
3,3`-Dichlorobenzidine	ug/kg		998 U	496 U	497 U	482 U	1480 U
3-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4,6-Dinitro-2-Methylphenol	ug/kg		2000 U	992 U	994 U	964 U	2960 U
4-Bromophenyl phenyl ether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
4-Chloro-3-Methylphenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Chloroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Chlorophenyl Phenylether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
4-Methylphenol	ug/kg	670	200 U	1140	99.4 U	96.4 U	296 U
4-Nitroaniline	ug/kg		998 U	496 U	497 U	482 U	1480 U
4-Nitrophenol	ug/kg		998 U	496 U	497 U	482 U	1480 U
Acenaphthene	ug/kg	500	200 U	99.2 U	99.4 U	96.4 U	296 U
Acenaphthylene	ug/kg	1300	200 U	99.2 U	49.4 J	96.4 U	296 U
Anthracene	ug/kg	960	100 J	102	205	96.4 U	296 U
Aroclor 1016	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1221	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1232	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1242	ug/kg		19 U	19 U	19.8 U	17.6 U	29.6 U
Aroclor 1248	ug/kg		19 U	19 U	130	17.6 U	29.6 U
Aroclor 1254	ug/kg		19 U	117	234	17.6 U	54.7
Aroclor 1260	ug/kg		63.5	35.9	120	17.6 U	51.7
Arsenic	mg/kg	93	13.1	15.2	15.3	6.13 U	35.8 U
Benzo(A)anthracene	ug/kg	1600	419	269	804	87.9 J	169 J
Benzo(A)pyrene	ug/kg	1600	553	279	1070	132	257 J
Benzo(G,H,I)perylene	ug/kg	720	284	493	787	114	202 J
Benzofluoranthenes, Total	ug/kg	3600	1180	682	2070	283	710
Benzoic acid	ug/kg	650	2000 U	2650	555 J	964 U	1930 J
Benzyl alcohol	ug/kg	73	200 U	1930	371	96.4 U	577
bis(2-Chloroethoxy) methane	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Bis-(2-chloroethyl) ether	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	13400	7160	8500	352	746
Butylbenzylphthalate	ug/kg	900	256	250	1160	96.4 U	296 U
Carbazole	ug/kg		200 U	99.2 U	147	96.4 U	296 U
Chrysene	ug/kg	2800	723	486	1350	135	330
Coarse Sand	%		3.8		2.3		
Copper	mg/kg	390	160	133	129	30.8	85.3
cPAH	ug/kg	100	778.83 J	422.1	1519	194.54 J	424.2 J
Dibenzo(A,H)anthracene	ug/kg	230	200 U	99.2 U	231	96.4 U	296 U
Dibenzofuran	ug/kg	540	200 U	99.2 U	55.5 J	96.4 U	296 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	2150	882	888	123	565
Diethylphthalate	ug/kg	1200	200 U	99.2 U	99.4 U	96.4 U	296 U
Dimethylphthalate	ug/kg	160	200 U	99.2 U	99.4 U	96.4 U	296 U
Di-N-Butylphthalate	ug/kg	1400	180 J	168	179	47.9 J	296 U
Di-N-Octylphthalate	ug/kg	6200	441	4190	1910	96.4 U	296 U
Fine Gravel	%		0.1		0.5		
Fine Sand	%		4.8		6.5		
Fluoranthene	ug/kg	2500	1080	748	2380	196	462
Fluorene	ug/kg	540	49.7 J	99.2 U	111	96.4 U	296 U
Hexachlorobenzene	ug/kg	70	200 U	99.2 U	99.4 U	96.4 U	296 U
Hexachlorobutadiene	ug/kg	120	200 U	99.2 U	99.4 U	96.4 U	296 U
Hexachlorocyclopentadiene	ug/kg		998 U	496 U	497 U	482 U	1480 U
Hexachloroethane	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
HPAH	ug/kg	17000	5776 J	4054.6	11879	1210.3 J	2969 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	187 J	233	557	96.4 U	168 J
Isophorone	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
Lead	mg/kg	530	71.4	57.5	79.8	14.4	285
LPAH	ug/kg	5200	629.3 J	701.4 J	1463.9 J	307.9 J	940 J
Medium Sand	%		6.3		2.8		
Mercury	mg/kg	0.59	0.139	0.196	0.162	0.0328 U	0.185 U
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	6720	3080	2860	1090	871
Naphthalene	ug/kg	2100	73.6 J	61.6 J	98.5 J	96.4 U	296 U
Nitrobenzene	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
N-Nitroso-Di-N-Propylamine	ug/kg		200 U	99.2 U	99.4 U	96.4 U	296 U
N-Nitrosodiphenylamine	ug/kg	40	200 U	99.2 U	99.4 U	96.4 U	296 U
Pentachlorophenol	ug/kg	690	998 U	496 U	497 U	482 U	1480 U
Phenanthrene	ug/kg	1500	406	389	1000	66.9 J	200 J
Phenol	ug/kg	1200	88.2 J	325	165	96.4 U	126 J
Polychlorinated Biphenyls	ug/kg	1000	63.5	200.4	484	17.6 U	180.4
Pyrene	ug/kg	3300	1350	815	2630	166	523
Solids, Total	%		43.29	42.02	35.65	76.13	13.53
Total Organic Carbon	%		6.7	8.95 J	6.51	3.27 J	3.72 J
Very Coarse Sand	%		1.4		3.3		
Very Fine Sand	%		8.4		10.2		
Zinc	mg/kg	960	721	600	934	169	300

Location			MH211	ODS58
Sample Date			25 May 2018	05 Feb 2018
Sample Name			MKJ-052518-5	CEW-020518-1
Drainage Type			SD	SD
Sample Method			Grab-Manual	Grab-Manual
Location Type			Inline	ODS
Project				
Outfall			S River St SD	S River St SD
Analyte	Unit	CSL/2LAET		
1,2,4-Trichlorobenzene	ug/kg	51	*94.3 U*	*296 U*
1,2-Dichlorobenzene	ug/kg	50	*94.3 U*	*296 U*
1,3-Dichlorobenzene	ug/kg		94.3 U	296 U
1,4-Dichlorobenzene	ug/kg	110	94.3 U	*296 U*
1-Methylnaphthalene	ug/kg		94.3 U	123
2,2'-Oxybis(1-chloropropane)	ug/kg		94.3 U	296 U
2,4,5-Trichlorophenol	ug/kg		472 U	1480 U
2,4,6-Trichlorophenol	ug/kg		472 U	1480 U
2,4-Dichlorophenol	ug/kg		472 U	1480 U
2,4-Dimethylphenol	ug/kg	29	*472 U*	*1480 U*
2,4-Dinitrophenol	ug/kg		943 U	2960 U
2,4-Dinitrotoluene	ug/kg		472 U	1480 U
2,6-Dinitrotoluene	ug/kg		472 U	1480 U
2-Chloronaphthalene	ug/kg		94.3 U	296 U
2-Chlorophenol	ug/kg		94.3 U	296 U
2-Methylnaphthalene	ug/kg	670	30.3 J	158
2-Methylphenol	ug/kg	63	*94.3 U*	*296 U*
2-Nitroaniline	ug/kg		472 U	1480 U
2-Nitrophenol	ug/kg		94.3 U	296 U
3,3`-Dichlorobenzidine	ug/kg		472 U	1480 U
3-Nitroaniline	ug/kg		472 U	1480 U
4,6-Dinitro-2-Methylphenol	ug/kg		943 U	2960 U
4-Bromophenyl phenyl ether	ug/kg		94.3 U	296 U
4-Chloro-3-Methylphenol	ug/kg		472 U	1480 U
4-Chloroaniline	ug/kg		472 U	1480 U
4-Chlorophenyl Phenylether	ug/kg		94.3 U	296 U
4-Methylphenol	ug/kg	670	94.3 U	296 U
4-Nitroaniline	ug/kg		472 U	1480 U
4-Nitrophenol	ug/kg		472 U	1480 U
Acenaphthene	ug/kg	500	94.3 U	*1700*
Acenaphthylene	ug/kg	1300	39 J	240
Anthracene	ug/kg	960	124	*12000*
Aroclor 1016	ug/kg		19.3 U	19.8 U
Aroclor 1221	ug/kg		19.3 U	19.8 U
Aroclor 1232	ug/kg		19.3 U	19.8 U
Aroclor 1242	ug/kg		19.3 U	19.8 U
Aroclor 1248	ug/kg		34.5	19.8 U
Aroclor 1254	ug/kg		56.4	29.5
Aroclor 1260	ug/kg		54.3	29.7 U
Arsenic	mg/kg	93	14.7	25.4
Benzo(A)anthracene	ug/kg	1600	411	*91600*
Benzo(A)pyrene	ug/kg	1600	444	*80900*
Benzo(G,H,I)perylene	ug/kg	720	449	*65600*
Benzofluoranthenes, Total	ug/kg	3600	1300	*165000*

Benzoic acid	ug/kg	650	943 U	2540
Benzyl alcohol	ug/kg	73	94.3 U	296 U
bis(2-Chloroethoxy) methane	ug/kg		94.3 U	296 U
Bis-(2-chloroethyl) ether	ug/kg		94.3 U	296 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	4370	12300
Butylbenzylphthalate	ug/kg	900	156	1080
Carbazole	ug/kg		82.4 J	19100
Chrysene	ug/kg	2800	826	116000
Coarse Sand	%		17.9	17.2
Copper	mg/kg	390	105	230
cPAH	ug/kg	100	701.06	119260
Dibenzo(A,H)anthracene	ug/kg	230	114	14400
Dibenzofuran	ug/kg	540	25.8 J	696
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	761	2330
Diethylphthalate	ug/kg	1200	94.3 U	296 U
Dimethylphthalate	ug/kg	160	153	8960
Di-N-Butylphthalate	ug/kg	1400	99.9	538
Di-N-Octylphthalate	ug/kg	6200	246	1430
Fine Gravel	%		0.2	1.1
Fine Sand	%		5.5	6.9
Fluoranthene	ug/kg	2500	976	274000
Fluorene	ug/kg	540	43.1 J	2590
Hexachlorobenzene	ug/kg	70	94.3 U	296 U
Hexachlorobutadiene	ug/kg	120	94.3 U	296 U
Hexachlorocyclopentadiene	ug/kg		472 U	1480 U
Hexachloroethane	ug/kg		94.3 U	296 U
HPAH	ug/kg	17000	5851	1082300
Indeno(1,2,3-Cd)pyrene	ug/kg	690	321	57800
Isophorone	ug/kg		94.3 U	296 U
Lead	mg/kg	530	67.7 J	237
LPAH	ug/kg	5200	529.2	118118
Medium Sand	%		13.2	17.9
Mercury	mg/kg	0.59	0.0981	0.0429
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	2860	4220
Naphthalene	ug/kg	2100	47.1 J	588 B
Nitrobenzene	ug/kg		94.3 U	296 U
N-Nitroso-Di-N-Propylamine	ug/kg		94.3 U	296 U
N-Nitrosodiphenylamine	ug/kg	40	94.3 U	296 U
Pentachlorophenol	ug/kg	690	472 U	1480 U
Phenanthrene	ug/kg	1500	276	101000
Phenol	ug/kg	1200	77 J	2280
Polychlorinated Biphenyls	ug/kg	1000	145.2	29.5
Pyrene	ug/kg	3300	1010	217000
Solids, Total	%		51.63	72.18
Total Organic Carbon	%		6.54	5.05
Very Coarse Sand	%		8.6	9.5
Very Fine Sand	%		7.6	11.4
Zinc	mg/kg	960	459	1000

Location			RCB200A
Sample Date			12 Jun 2018
Sample Name			MKJ-061218-2
Drainage Type			SD
Sample Method			Grab-Manual
Location Type			Inline
Project			
Outfall			SW Dakota St SD/Ditch
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*295 U*
1,2-Dichlorobenzene	ug/kg	50	*295 U*
1,3-Dichlorobenzene	ug/kg		295 U
1,4-Dichlorobenzene	ug/kg	110	*295 U*
1-Methylnaphthalene	ug/kg		295 U
2,2'-Oxybis(1-chloropropane)	ug/kg		295 U
2,4,5-Trichlorophenol	ug/kg		1470 U
2,4,6-Trichlorophenol	ug/kg		1470 U
2,4-Dichlorophenol	ug/kg		1470 U
2,4-Dimethylphenol	ug/kg	29	*1470 U*
2,4-Dinitrophenol	ug/kg		2950 U
2,4-Dinitrotoluene	ug/kg		1470 U
2,6-Dinitrotoluene	ug/kg		1470 U
2-Chloronaphthalene	ug/kg		295 U
2-Chlorophenol	ug/kg		295 U
2-Methylnaphthalene	ug/kg	670	295 U
2-Methylphenol	ug/kg	63	*295 U*
2-Nitroaniline	ug/kg		1470 U
2-Nitrophenol	ug/kg		295 U
3,3`-Dichlorobenzidine	ug/kg		1470 U
3-Nitroaniline	ug/kg		1470 U
4,6-Dinitro-2-Methylphenol	ug/kg		2950 U
4-Bromophenyl phenyl ether	ug/kg		295 U
4-Chloro-3-Methylphenol	ug/kg		1470 U
4-Chloroaniline	ug/kg		1470 U
4-Chlorophenyl Phenylether	ug/kg		295 U
4-Methylphenol	ug/kg	670	485
4-Nitroaniline	ug/kg		1470 U
4-Nitrophenol	ug/kg		1470 U
Acenaphthene	ug/kg	500	295 U
Acenaphthylene	ug/kg	1300	295 U
Anthracene	ug/kg	960	295 U
Aroclor 1016	ug/kg		19.8 U
Aroclor 1221	ug/kg		19.8 U
Aroclor 1232	ug/kg		19.8 U
Aroclor 1242	ug/kg		19.8 U
Aroclor 1248	ug/kg		84.1
Aroclor 1254	ug/kg		119
Aroclor 1260	ug/kg		56.6
Arsenic	mg/kg	93	16.5 U

Benzo(A)anthracene	ug/kg	1600	257 J
Benzo(A)pyrene	ug/kg	1600	267 J
Benzo(G,H,I)perylene	ug/kg	720	340
Benzofluoranthenes, Total	ug/kg	3600	748
Benzoic acid	ug/kg	650	*984 J*
Benzyl alcohol	ug/kg	73	*2260*
bis(2-Chloroethoxy) methane	ug/kg		295 U
Bis-(2-chloroethyl) ether	ug/kg		295 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*6850*
Butylbenzylphthalate	ug/kg	900	*295 U*
Carbazole	ug/kg		295 U
Chrysene	ug/kg	2800	545
Coarse Sand	%		2.9
Copper	mg/kg	390	135
cPAH	ug/kg	100	457.45 J
Dibenzo(A,H)anthracene	ug/kg	230	149 J
Dibenzofuran	ug/kg	540	295 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	614
Diethylphthalate	ug/kg	1200	*295 U*
Dimethylphthalate	ug/kg	160	*295 U*
Di-N-Butylphthalate	ug/kg	1400	280 J
Di-N-Octylphthalate	ug/kg	6200	715
Fine Gravel	%		0.1
Fine Sand	%		6.3
Fluoranthene	ug/kg	2500	534
Fluorene	ug/kg	540	295 U
Hexachlorobenzene	ug/kg	70	*295 U*
Hexachlorobutadiene	ug/kg	120	*295 U*
Hexachlorocyclopentadiene	ug/kg		1470 U
Hexachloroethane	ug/kg		295 U
HPAH	ug/kg	17000	3681 J
Indeno(1,2,3-Cd)pyrene	ug/kg	690	249 J
Isophorone	ug/kg		295 U
Lead	mg/kg	530	113
LPAH	ug/kg	5200	548 J
Medium Sand	%		3.4
Mercury	mg/kg	0.59	0.174
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	*3060*
Naphthalene	ug/kg	2100	118 J
Nitrobenzene	ug/kg		295 U
N-Nitroso-Di-N-Propylamine	ug/kg		295 U
N-Nitrosodiphenylamine	ug/kg	40	*295 U*
Pentachlorophenol	ug/kg	690	*1470 U*
Phenanthrene	ug/kg	1500	430
Phenol	ug/kg	1200	179 J
Polychlorinated Biphenyls	ug/kg	1000	*259.7*
Pyrene	ug/kg	3300	592
Solids, Total	%		29.53
Total Organic Carbon	%		8.87 J

Very Coarse Sand	%		1.1
Very Fine Sand	%		12.8
Zinc	mg/kg	960	*932*

Location			ID-ST1	ID-ST2	ID-ST3
Sample Date			18 Apr 2018	19 Apr 2018	18 Apr 2018
Sample Name			ID-ST1-041818	ID-ST2-041918	ID-ST3-041818
Drainage Type			SD	SD	SD
Sample Method			SedTrap	SedTrap	SedTrap
Location Type			Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap	Inline w/Active SPU Sed Trap
Project					
Outfall			SW Idaho St SD	SW Idaho St SD	SW Idaho St SD
Analyte	Unit	CSL/2LAET			
1,2,4-Trichlorobenzene	ug/kg	51	*166 U*	18.9 U	*99 U*
1,2-Dichlorobenzene	ug/kg	50	*166 U*	18.9 U	*99 U*
1,3-Dichlorobenzene	ug/kg		166 U	18.9 U	99 U
1,4-Dichlorobenzene	ug/kg	110	*166 U*	18.9 U	99 U
1-Methylnaphthalene	ug/kg		166 U	18.9 U	99 U
2,2'-Oxybis(1-chloropropane)	ug/kg		166 U	18.9 U	99 U
2,4,5-Trichlorophenol	ug/kg		829 U	94.6 U	495 U
2,4,6-Trichlorophenol	ug/kg		829 U	94.6 U	495 U
2,4-Dichlorophenol	ug/kg		829 U	94.6 U	495 U
2,4-Dimethylphenol	ug/kg	29	*829 U*	*94.6 U*	*495 U*
2,4-Dinitrophenol	ug/kg		1660 U	189 U	990 U
2,4-Dinitrotoluene	ug/kg		829 U	94.6 U	495 U
2,6-Dinitrotoluene	ug/kg		829 U	94.6 U	495 U
2-Chloronaphthalene	ug/kg		166 U	18.9 U	99 U
2-Chlorophenol	ug/kg		166 U	18.9 U	99 U
2-Methylnaphthalene	ug/kg	670	166 U	18.9 U	99 U
2-Methylphenol	ug/kg	63	*166 U*	18.9 U	*99 U*
2-Nitroaniline	ug/kg		829 U	94.6 U	495 U
2-Nitrophenol	ug/kg		166 U	18.9 U	99 U
3,3`-Dichlorobenzidine	ug/kg		829 U	94.6 U	495 U
3-Nitroaniline	ug/kg		829 U	94.6 U	495 U
4,6-Dinitro-2-Methylphenol	ug/kg		1660 U	189 U	990 U
4-Bromophenyl phenyl ether	ug/kg		166 U	18.9 U	99 U
4-Chloro-3-Methylphenol	ug/kg		829 U	94.6 U	495 U
4-Chloroaniline	ug/kg		829 U	94.6 U	495 U
4-Chlorophenyl Phenylether	ug/kg		166 U	18.9 U	99 U
4-Methylphenol	ug/kg	670	515	28	*708*
4-Nitroaniline	ug/kg		829 U	94.6 U	495 U
4-Nitrophenol	ug/kg		829 U	94.6 U	495 U
Acenaphthene	ug/kg	500	166 U	18.9 U	99 U
Acenaphthylene	ug/kg	1300	166 U	18.9 U	99 U
Anthracene	ug/kg	960	106 J	8.9 J	99 U
Aroclor 1016	ug/kg		19.6 U	18.9 U	19.8 U
Aroclor 1221	ug/kg		19.6 U	18.9 U	19.8 U
Aroclor 1232	ug/kg		19.6 U	18.9 U	19.8 U
Aroclor 1242	ug/kg		19.6 U	18.9 U	19.8 U
Aroclor 1248	ug/kg		66.5 J	146	19.8 U
Aroclor 1254	ug/kg		177	153	19.8 U
Aroclor 1260	ug/kg		89.9	21.8	19.8 U
Arsenic	mg/kg	93	17.5	8.33	18.5
Benzo(A)anthracene	ug/kg	1600	548	40.4	55.4 J
Benzo(A)pyrene	ug/kg	1600	658	55.7	85.4 J
Benzo(G,H,I)perylene	ug/kg	720	612	50.3	131
Benzofluoranthenes, Total	ug/kg	3600	2400	163	226
Benzoic acid	ug/kg	650	*2380*	79 J	*8540*
Benzyl alcohol	ug/kg	73	*1050*	18.9 U	*1550*
bis(2-Chloroethoxy) methane	ug/kg		166 U	18.9 U	99 U
Bis-(2-chloroethyl) ether	ug/kg		166 U	18.9 U	99 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*6490*	605	*1920*
Butylbenzylphthalate	ug/kg	900	*409*	*73*	*99 U*
Carbazole	ug/kg		150 J	18.9 U	99 U
Chrysene	ug/kg	2800	1200	94.2	111
Copper	mg/kg	390	121	31.5	45.5
cPAH	ug/kg	100	1055.8	85.002	144.25
Dibenzo(A,H)anthracene	ug/kg	230	166 U	18.9 U	99 U
Dibenzofuran	ug/kg	540	166 U	18.9 U	99 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000		43.7	120
Diethylphthalate	ug/kg	1200	166 U	18.9 U	99 U
Dimethylphthalate	ug/kg	160	*166 U*	18.9 U	*99 U*
Di-N-Butylphthalate	ug/kg	1400	134 J	18.9 U	123

Di-N-Octylphthalate	ug/kg	6200	166 U	30.7	99 U
Fluoranthene	ug/kg	2500	1470	78.1	88 J
Fluorene	ug/kg	540	73.6 J	18.9 U	99 U
Hexachlorobenzene	ug/kg	70	166 U	18.9 U	99 U
Hexachlorobutadiene	ug/kg	120	166 U	18.9 U	99 U
Hexachlorocyclopentadiene	ug/kg		829 U	94.6 U	495 U
Hexachloroethane	ug/kg		166 U	18.9 U	99 U
HPAH	ug/kg	17000	9009	629.95	936.8
Indeno(1,2,3-Cd)pyrene	ug/kg	690	578	42.4	98 J
Isophorone	ug/kg		166 U	18.9 U	99 U
Lead	mg/kg	530	65.5	21	59.6
LPAH	ug/kg	5200	1111.3	85.55	325
Mercury	mg/kg	0.59	0.183	0.0573	0.126
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000		315	815
Naphthalene	ug/kg	2100	81.7 J	7.1 J	99 U
Nitrobenzene	ug/kg		166 U	18.9 U	99 U
N-Nitroso-Di-N-Propylamine	ug/kg		166 U	18.9 U	99 U
N-Nitrosodiphenylamine	ug/kg	40	166 U	18.9 U	99 U
Pentachlorophenol	ug/kg	690	829 U	94.6 U	495 U
Phenanthrene	ug/kg	1500	684	41.2	77.5 J
Phenol	ug/kg	1200	391	20.3	507
Polychlorinated Biphenyls	ug/kg	1000	372.6 J	358.6	19.8 U
Pyrene	ug/kg	3300	1460	96.4	92.5 J
Solids, Total	%		29.84	62.85	43.96
Total Organic Carbon	%		12.2 J	3.24 J	5.83 J
Zinc	mg/kg	960	1200	188	260

Location			KN-ST1
Sample Date			19 Apr 2018
Sample Name			KN-ST1-041918
Drainage Type			SD
Sample Method			SedTrap
Location Type			Inline w/Active SPU Sed Trap
Project			
Outfall			SW Kenny St SD/T115 CSO
Analyte	Unit	CSL/2LAET	
1,2,4-Trichlorobenzene	ug/kg	51	*99.4 U*
1,2-Dichlorobenzene	ug/kg	50	*99.4 U*
1,3-Dichlorobenzene	ug/kg		99.4 U
1,4-Dichlorobenzene	ug/kg	110	99.4 U
1-Methylnaphthalene	ug/kg		99.4 U
2,2'-Oxybis(1-chloropropane)	ug/kg		99.4 U
2,4,5-Trichlorophenol	ug/kg		497 U
2,4,6-Trichlorophenol	ug/kg		497 U
2,4-Dichlorophenol	ug/kg		497 U
2,4-Dimethylphenol	ug/kg	29	*497 U*
2,4-Dinitrophenol	ug/kg		994 U
2,4-Dinitrotoluene	ug/kg		497 U
2,6-Dinitrotoluene	ug/kg		497 U
2-Chloronaphthalene	ug/kg		99.4 U
2-Chlorophenol	ug/kg		99.4 U
2-Methylnaphthalene	ug/kg	670	99.4 U
2-Methylphenol	ug/kg	63	*99.4 U*
2-Nitroaniline	ug/kg		497 U
2-Nitrophenol	ug/kg		99.4 U
3,3`-Dichlorobenzidine	ug/kg		497 U
3-Nitroaniline	ug/kg		497 U
4,6-Dinitro-2-Methylphenol	ug/kg		994 U
4-Bromophenyl phenyl ether	ug/kg		99.4 U
4-Chloro-3-Methylphenol	ug/kg		497 U
4-Chloroaniline	ug/kg		497 U
4-Chlorophenyl Phenylether	ug/kg		99.4 U
4-Methylphenol	ug/kg	670	116
4-Nitroaniline	ug/kg		497 U
4-Nitrophenol	ug/kg		497 U
Acenaphthene	ug/kg	500	99.4 U
Acenaphthylene	ug/kg	1300	99.4 U
Anthracene	ug/kg	960	64.8 J
Aroclor 1016	ug/kg		19.1 U
Aroclor 1221	ug/kg		19.1 U
Aroclor 1232	ug/kg		19.1 U
Aroclor 1242	ug/kg		19.1 U
Aroclor 1248	ug/kg		31.3
Aroclor 1254	ug/kg		44.7
Aroclor 1260	ug/kg		24.2
Arsenic	mg/kg	93	13.8

Benzo(A)anthracene	ug/kg	1600	145
Benzo(A)pyrene	ug/kg	1600	254
Benzo(G,H,I)perylene	ug/kg	720	185
Benzofluoranthenes, Total	ug/kg	3600	543
Benzoic acid	ug/kg	650	*994 U*
Benzyl alcohol	ug/kg	73	*193*
bis(2-Chloroethoxy) methane	ug/kg		99.4 U
Bis-(2-chloroethyl) ether	ug/kg		99.4 U
Bis(2-ethylhexyl)phthalate	ug/kg	1900	*2980*
Butylbenzylphthalate	ug/kg	900	*99.4 U*
Carbazole	ug/kg		99.4 U
Chrysene	ug/kg	2800	382
Copper	mg/kg	390	55.4
cPAH	ug/kg	100	362.3
Dibenzo(A,H)anthracene	ug/kg	230	99.4 U
Dibenzofuran	ug/kg	540	99.4 U
Diesel Range (Silica and Acid Cleaned)	mg/kg	2000	341
Diethylphthalate	ug/kg	1200	99.4 U
Dimethylphthalate	ug/kg	160	*99.4 U*
Di-N-Butylphthalate	ug/kg	1400	52.1 J
Di-N-Octylphthalate	ug/kg	6200	226
Fluoranthene	ug/kg	2500	441
Fluorene	ug/kg	540	99.4 U
Hexachlorobenzene	ug/kg	70	*99.4 U*
Hexachlorobutadiene	ug/kg	120	*99.4 U*
Hexachlorocyclopentadiene	ug/kg		497 U
Hexachloroethane	ug/kg		99.4 U
HPAH	ug/kg	17000	2648.7
Indeno(1,2,3-Cd)pyrene	ug/kg	690	158
Isophorone	ug/kg		99.4 U
Lead	mg/kg	530	34.1
LPAH	ug/kg	5200	510.9
Mercury	mg/kg	0.59	0.123
Motor Oil (Silica and Acid Cleaned)	mg/kg	2000	1650
Naphthalene	ug/kg	2100	32 J
Nitrobenzene	ug/kg		99.4 U
N-Nitroso-Di-N-Propylamine	ug/kg		99.4 U
N-Nitrosodiphenylamine	ug/kg	40	*99.4 U*
Pentachlorophenol	ug/kg	690	*497 U*
Phenanthrene	ug/kg	1500	265
Phenol	ug/kg	1200	99.4 U
Polychlorinated Biphenyls	ug/kg	1000	*138.4*
Pyrene	ug/kg	3300	491
Solids, Total	%		49.94
Total Organic Carbon	%		3.28 J
Zinc	mg/kg	960	299