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2023-2024 Summary Report

6PPDQ in Highway Runoff and BMP Effectiveness Seattle, Washington and Portland, Oregon

Prepared for Washington State Department of Ecology

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Note:

Some pages in this document have been purposely skipped or blank pages inserted so that this document will print correctly when duplexed.

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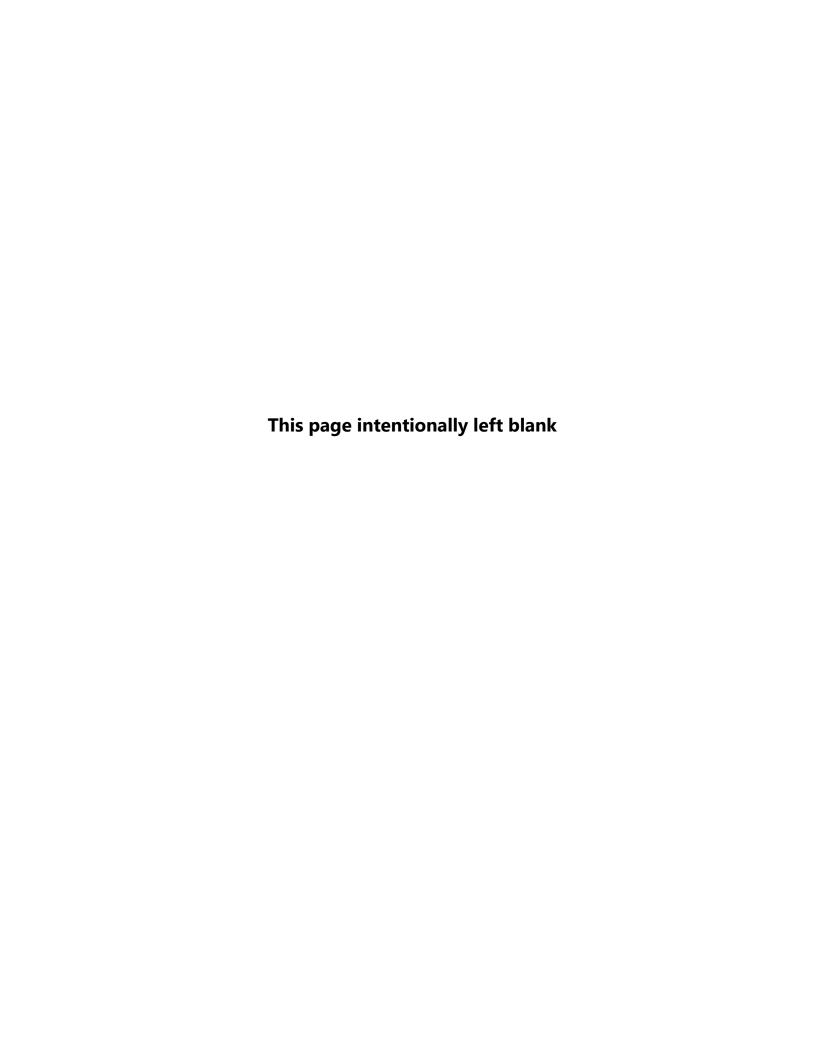
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Acronyms and Abbreviations

6PPD N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine

6PPDQ N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine-quinone

BMP Best management practice

Ecology Washington State Department of Ecology FLPE Fluorinated high density polyethylene

HDPE High density polyethylene

I-205 Interstate 205
I-5 Interstate 5

KCEL King County Environmental Laboratory

LC50 Lethal concentration 50 LCS Laboratory control sample

MEL Manchester Environmental Laboratory

MQO Measurement quality objective

ODOT Oregon Department of Transportation

PTFE Polytetrafluoroethylene

QAPP Quality assurance project plan

SCTF Ship Canal Test Facility

SOP Standard Operating Procedure

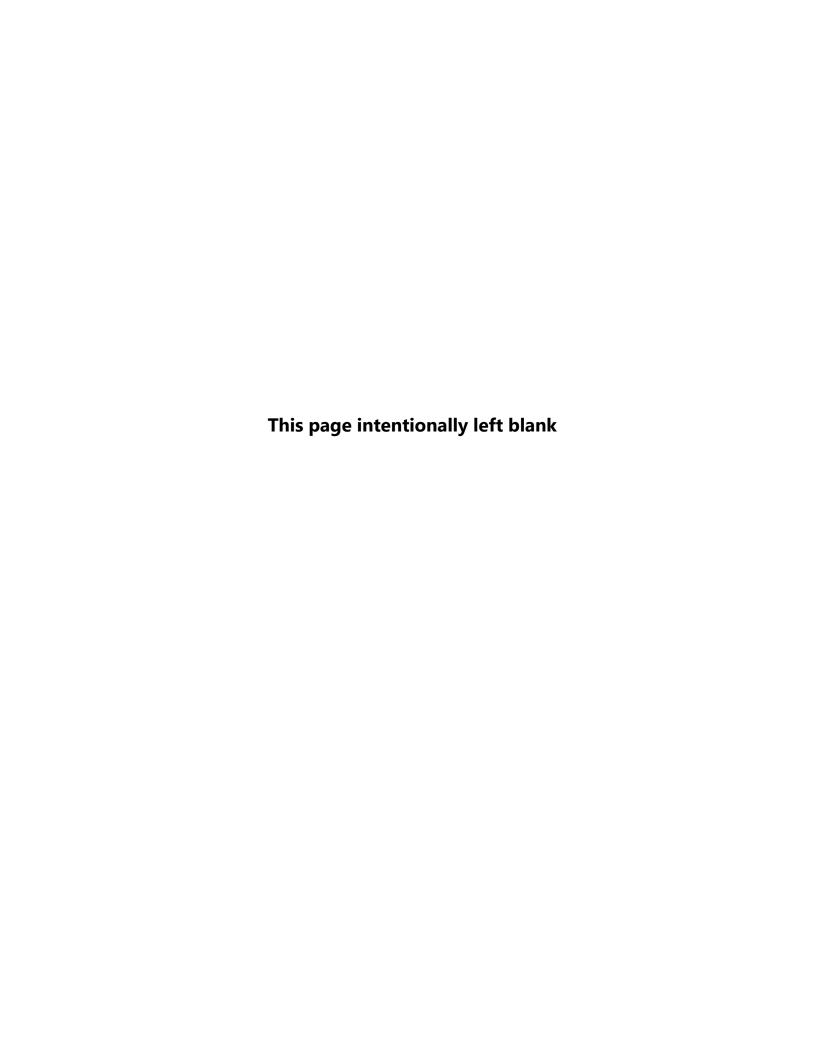
STTC Stormwater Technology Testing Center

TWP Tire wear particles

WSDOT Washington State Department of Transportation

WY Water year





Introduction

This report presents the results of an exploratory study conducted in water years (WY) 2023 and 2024 to characterize 6PPDQuinone¹ (6PPDQ) in stormwater runoff from highways in the Pacific Northwest. The study also evaluated 6PPDQ removal by stormwater treatment technologies, how field sampling protocols and equipment may impact 6PPDQ recovery in stormwater samples, and differences in 6PPDQ quantification between two analytical laboratories. This project is funded by the Washington State Department of Ecology (Ecology).

Background

For over two decades, researchers in the Pacific Northwest of the United States have been studying urban runoff mortality syndrome in coho salmon (Scholz et al. 2011). Years of investigations have sought to identify the chemical(s) causing the mortality in coho (Peter et al. 2018, Tian et al. 2020, Tian et al. 2021).

In 2020, researchers identified a chemical in stormwater called 6PPDQ that forms from an antioxidant, 6PPD, which is used in tires to extend their lifespan. This chemical is acutely toxic to coho and, to a lesser degree, toxic to several other aquatic species including steelhead, char, and brook trout (Tian et al. 2021, 2022; Brinkmann et al. 2022; Hiki et al. 2021). During initial investigations, the lethal concentration 50 (LC50; concentration required to kill 50 percent of the test population) for juvenile coho salmon was identified as 95 nanograms per liter (ng/L) and for chinook salmon as greater than 67,307 ng/L (Lo et al. 2023). Subsequent studies have indicated that at life stages less than one year old coho LC50's may be as low as 41 ng/L (Lo et al. 2023). Urban roadway stormwater runoff has also shown acute toxicity for juvenile steelhead and chinook salmon but to a lesser degree than coho salmon (French et al. 2022). The toxicity of urban stormwater runoff for these species may be related to 6PPDQ or other chemicals.

A primary pathway of 6PPDQ transport to receiving waters is via stormwater runoff carrying tire wear particles (TWP) from roads and parking areas to surface waters (Tian et al. 2021). The parent chemical to 6PPDQ is 6PPD. 6PPD is added to rubber as an antiozonant, to extend longevity. When 6PPD is exposed to air, it reacts with ozone or oxygen, which is results in numerous transformation products, including 6PPDQ. It is still unclear how long it takes for all the 6PPD to fully migrate out of a tire or its wear particles. Recent studies suggest that, upon exposure to the atmosphere and oxidation, about 10 percent of 6PPD in tires transforms to 6PPDQ and that the remaining 90 percent is transformed into other chemical byproducts with unknown fates and toxicity (Hu et al. 2022, Seiwert 2022).

Given the ubiquitous use of tires and the toxicity of 6PPDQ, there is considerable regional interest in collecting more information on levels of 6PPDQ in roadway runoff, the ability of stormwater treatment technologies to remove 6PPDQ, and the appropriate methods to conduct stormwater sampling.

A common preferred method of characterizing chemical constituents, such as 6PPDQ, across a storm event is through the use of flow-weighted or time-weighted composite sampling. In flow-weighted

¹ N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine





sampling, flow rate is monitored to trigger collection of aliquots to represent known volumes of water, which generate a composite sample. Time-weighted sampling is defined by the collection of samples at set intervals (e.g., every 15 minutes). A common procedure for composite sampling is the deployment of an automated peristaltic sampler (autosampler). Autosamplers employ a combination of tubing, pump, and a large sampling container (carboy). Tubing is placed in the source water, routed through the peristaltic pump, and pumped water is collected in the carboy. The collected composite sample is then delivered to a laboratory for analysis.

Some stormwater pollutants can chemically adhere (sorb) to different materials, which may result in a decrease of that chemical in the sample analyzed by the laboratory. The loss of 6PPDQ due to sorption to various field equipment, for instance, is not yet well-characterized nor evaluated for in stormwater sampling protocols. Analysis at University of Washington Tacoma has found sorption to plastic, rubber, and silicone materials (Hu et al. 2023), but the study was focused on laboratory conditions and was not intended to accurately model field conditions and exposure kinetics. Conversely, materials which are reused from event to event, such as automated sampler tubing, may leach 6PPDQ.

Objectives

The project goals are to:

- Collect data that can inform refinement of a field protocol for collecting stormwater composite samples via automated sampler for 6PPDQ analysis.
- Collect storm event data to characterize 6PPDQ in stormwater runoff at the Ship Canal Test Facility (SCTF) from Interstate 5 (I-5) in Seattle, Washington (Figure 1) and the Stormwater Technology Testing Center (STTC) from Interstate 205 (I-205) in Portland, Oregon (Figure 2).
- Evaluate the ability of selected stormwater treatment devices to reduce 6PPDQ concentrations.
- Evaluate inter-laboratory differences in reported values of 6PPDQ.

To accomplish the above project goals, the following sampling and analytical objectives were identified:

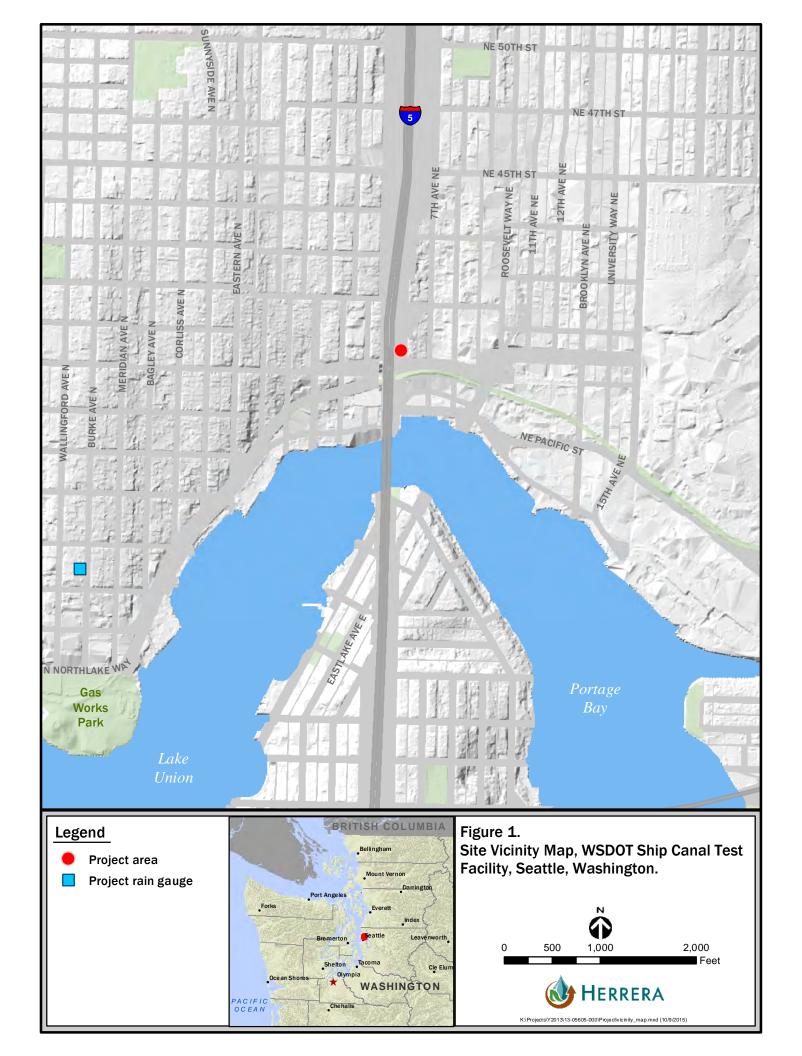
- Analyze 6PPDQ concentrations and assess removal efficiency by testing runoff samples, treated and untreated, before and after stormwater makes its way through five evaluated stormwater treatment devices. Four of the stormwater treatment devices are installed at the SCTF and one is installed at the STTC. For each stormwater treatment device, a goal of ten paired treated and untreated stormwater grab samples will be collected over five storm events (two pairs of samples per device per storm) and will be used to both characterize 6PPDQ in untreated stormwater and measure treatment efficacy of stormwater devices. At STTC, a goal of ten additional samples of untreated stormwater will be collected directly from the gravity line over five storm events (two samples per storm) to further characterize 6PPDQ in untreated stormwater runoff.
- Analyze differences in 6PPDQ concentrations across split grab samples of untreated runoff that underwent different sample storage or handling procedures. Twenty grab samples shall be collected across two storm events at the SCTF (ten samples per storm) to ensure a wide range of 6PPDQ concentrations. Each grab sample will be split with a churn splitter into nine experimental

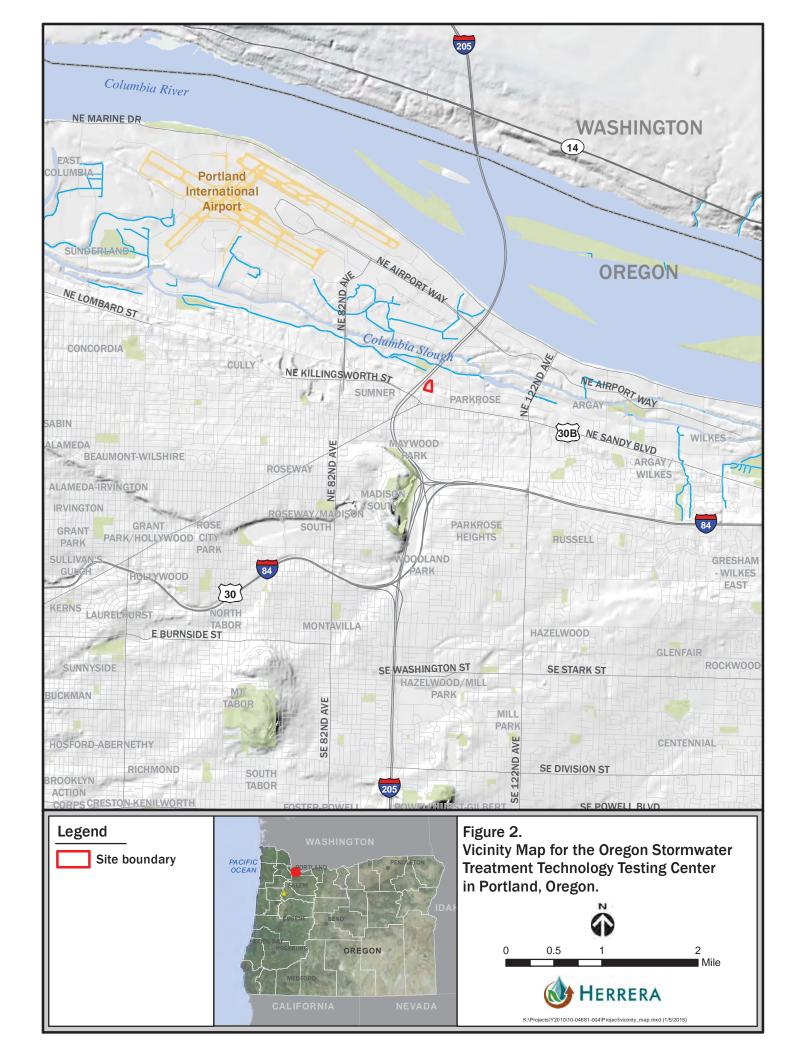


groups which cover variables including sample container material, holding time prior to transfer to amber glass containers, sample container headspace, and sample intake tubing. One of the nine experimental groups in each split shall be the control sample, which is collected directly into an amber glass sample container as specified in current draft 6PPDQ analytical methods (EPA 2023). 6PPDQ results from each of the 20 sample splits will be compared to the 6PPDQ concentrations in the control sample.

• Analyze differences in 6PPDQ concentrations reported by King County Environmental Laboratory (KCEL) and Manchester Environmental Laboratory (MEL) for 20 replicates of untreated runoff.







Methods

The stormwater monitoring goals for this project were to collect up to ten paired influent and effluent grab samples at each of five proprietary BMPs installed at the SCTF in Seattle, Washington and STTC in Portland, Oregon across five storm events (two pairs of samples at each BMP per storm); and collect 20 sets of untreated highway runoff grab samples for various field protocol experimental groups across two storm events (ten sets per storm) at the SCTF. A quality assurance project plan (QAPP) describing the study design, methods, data validation, analysis, and reporting was prepared for the investigation in water year 2023 (Herrera 2023). A QAPP addendum was prepared to describe modifications including expansion of the monitoring period into water year 2024, BMP sampling at the STTC, and addition of a second round of field protocol sampling (Herrera 2024a).

This section briefly describes the field, data analysis, and laboratory procedures employed to achieve the project goals. Additional detail regarding methods and procedures are detailed in the QAPP and QAPP addendum (Herrera 2023; 2024a).

Field Procedures

Field sampling procedures for both BMP and field protocol sampling were generally consistent with the QAPP and Addendum (Herrera 2023; 2024a). For all study components, sampling was targeted toward wet-weather events with the following characteristics:

- Target storm depth: a minimum of 0.15 inches of precipitation over a 24-hour period.
- Antecedent conditions: a period of at least 6 hours preceding the event with less than 0.04 inch of precipitation.
- Minimum duration: target storms must have a duration of at least 1 hour.

Field sampling procedures and deviations from the QAPP are briefly described below.

Runoff Characterization and BMP Effectiveness

The highways contributing runoff to the SCTF and STTC test bays are similar urban interstates with annual average daily traffic of 197,000 (WSDOT 2024) and 161,000 (ODOT 2024), respectively. Highway runoff in these basins is mostly untreated and is conveyed through stormwater sewers before diversion directly to test bays at the SCTF or to a wet well at the STTC. Stormwater is then pumped from the STTC wet well to test bays or drained by gravity through the gravity lines. Stormwater grab samples were collected from five different proprietary BMPs installed at the SCTF and STTC. Table 1, below, describes the stormwater technologies installed in each test bay.



Table 1. Stormwater BMPs Tested at SCTF and STTC.						
Test Bay	Description	Treatment Processes	Hydraulic Loading Rate (gpm/ft²)ª			
SCTF-TB1	High flow rate biofilter	Settling, filtration, sorption, biological processing	3.1			
SCTF-TB2	Membrane filter	Settling, separation, filtration, sorption	1.0			
SCTF-TB2.5	Horizontal bed media filter	Filtration, sorption	7.1			
SCTF-TB4	Cartridge-based media filter	Settling, filtration, sorption	1.5			
STTC-TB1	High flow rate biofilter	Settling, filtration, sorption, biological processing	2.0			

^a Design loading rate as specified by BMP manufacturer.

gpm/ft²: Gallons per minute per square foot.

Stormwater BMP grab sampling at the SCTF and STTC was conducted as follows:

- To collect the inlet samples, the bottle was dipped into the pipe at the entry point of each BMP as specified in the QAPP and Ecology SOP. If grab sample ports were installed (SCTF Bay 2.5), the sample port was opened for at least 10 seconds to allow stormwater to flow and clear any settled solids.
- To collect the treated outlet sample, the open bottle was placed beneath the water as it spilled over the outlet weir or pipe for each BMP as specified in the QAPP and Ecology SOP.
- Field duplicate samples were collected immediately after the primary field sample.
- A second set or paired influent and effluent samples were collected during each target storm event as described above. The first and second sets of paired samples were typically collected between one to five hours apart to cover a range of storm event conditions.

Untreated highway runoff samples from I-205 at the STTC were collected as follows:

- All three gravity line ball valves were opened to allow stormwater to flow through the wet well system for at least 10 minutes to clear any settled solids in the wet well or lines.
- The open sample bottle was placed into the stormwater flow at the end of the central gravity line (G2) hose where it discharges into the effluent basin. A second grab sample was collected between two to five hours after the first.

Field Protocol Evaluation

Field protocol sampling was conducted during two separate storm events, or rounds. During each round, ten bulk grab stormwater samples approximately 10 liters in volume were collected in a Teflon churn splitter throughout the duration of the storm event. During each of these ten grab sampling instances, or sample splits, the bulk stormwater volume was churned and split into nine discrete samples representing a unique experimental group. These experimental groups were selected to evaluate the performance of a variety of typical field sampling materials and procedures associated with automated composite sampling (e.g., sample intake tubing material, carboy size, and carboy holding time). Based on the preliminary results from the first round of field protocol sampling, the experimental groups were modified for the



second round. These experimental groups are presented in Table 2, below, and include a control and field duplicate group. The control and field duplicate groups were collected at the beginning and end, respectively, of each sample split to assess heterogeneity of the sample volume and field churn mixing procedures. Other experimental groups were selected to isolate individual materials or evaluate the combined effect of multiple materials or procedures on 6PPDQ results.

	Table 2. Field Protocol Study Experimental Groups.							
Experimental	Samplin	g Round						
Group	1	2	Description					
CONT	Х	Х	Control Group. Amber glass sample bottle filled directly from the churn splitter.					
HDPE_24	Х	X	HDPE 24 Hour Group. HDPE sample bottle filled directly from the churn splitter, held in the HDPE bottle for 24 hours, then transferred to an amber glass sample bottle.					
HDPE_OLD		Х	HDPE 24 Hour Used Bottle Group. Previously used decontaminated HDPE sample bottle filled directly from the churn splitter, held in the HDPE bottle for 24 hours, then transferred to an amber glass sample bottle.					
HDPE_24_20L		Х	HDPE 24 Hour Large Carboy Group. Previously used decontaminated 20-liter HDPE carboy filled with 2 liters of sample volume directly from the churn splitter, held in the carboy for 24 hours, then transferred to an amber glass sample bottle.					
HDPE_FT	Х		HDPE Full Time Group. HDPE sample bottle filled directly from the churn splitter and held in the HDPE bottle until analysis.					
AUTO_OLD		Х	Previously used decontaminated 1-liter HDPE bottle filled with 250-mililiters of sample volume by pumping from the churn splitter through 10-feet of PTFE tubing and 32.25 inches of silicone tubing that has been previously deployed for stormwater sampling using a peristaltic pump. Sample volume is held in the HDPE bottle for 24 hours then transferred to an amber glass sample bottle.					
PTFE_TUB	Х	Х	PTFE Tubing Group. Amber glass sample bottle filled by pumping sample volume from the churn splitter through 10-feet of PTFE tubing and 1 foot of silicone tubing using a peristaltic pump.					
PTFE_TUB_OLD		Х	PTFE Used Tubing Group. Amber glass sample bottle filled by pumping sample volume from the churn splitter through 10-feet of PTFE tubing and 32.25 inches of silicone tubing that has been previously deployed for stormwater sampling using a peristaltic pump.					
SILI_TUB	Х		Silicone Tubing Group. Amber glass sample bottle filled by pumping sample volume from the churn splitter through 2 feet of silicone tubing using a peristaltic pump.					
FLPE_24	Х		FLPE 24 Hour Group. FLPE sample bottle filled directly from the churn splitter, held in the FLPE bottle for 24 hours, then transferred to an amber glass sample bottle.					
FLPE_FT	Х		FLPE Full Time Group. FLPE sample bottle filled directly from the churn splitter and held in the FLPE bottle until analysis.					
LAB	Х	Х	Laboratory Split Group. Amber glass sample bottle filled directly from the churn splitter and delivered to Manchester Environmental Laboratory for analysis.					
FD	Х	Х	Field Duplicate Group. Amber glass sample bottle filled directly from the churn splitter.					

HDPE: High density polyethylene

FLPE: Fluorinated high density polyethylene

PTFE: Polytetrafluoroethylene



Untreated highway runoff samples from I-5 at the SCTF were collected for the field protocol evaluation as follows:

- All segments of tubing used in the experimental groups were backflushed with five liters of labprovided DI water using a peristaltic pump. One pre-sample rinsate blank was then collected from each segment of tubing.
- The churn splitter was placed directly in the stream of stormwater to directly collect the full sample volume required.
- The sample volume was pre-mixed prior to collection of sample bottles by smoothly raising and lowering the churn paddle at a rate of approximately nine inches per second at least ten times.
- The sample bottles were filled while consistently churning the sample volume as described in the QAPP. The bottles were filled in the order described in the QAPP and QAPP Addendum. For the experimental groups with tubing sections, one end of the tubing segment was placed into the churn splitter and a peristaltic autosampler was used to fill the sample bottle.
- Upon collection of each set of samples, the churn splitter was rinsed with at least three times the target sample volume of source water. Sampling procedures were then repeated until all sample sets are collected.
- Upon collection of the final set of samples and while still wet, the churn splitter was rinsed with labprovided DI water and returned to the laboratory for decontamination.
- All segments of tubing used in the experimental groups were backflushed with five liters of labprovided DI water using a peristaltic pump. One post-sample rinsate blank was then collected from each segment of tubing.

The ninth sample set from experimental group AUTO_OLD (Table 2) during the second round of field protocol sampling was missed due to sampling error.

Data Analysis

To identify significant differences between control and experimental group 6PPDQ concentrations, a paired permutation test (Helsel and Hirsch, 2020) was used to evaluate whether the means of the groups are significantly different. Statistical significance in these tests was assessed based on an alpha level of 0.05. A significant difference between the mean concentrations of the experimental groups and the control group is indicated where the p-value is less than the alpha level of 0.05. R software packages (R Core Team 2023) were used to perform permutation tests and calculate p-values and mean differences.

Laboratory Procedures

Stormwater samples submitted to KCEL and MEL were analyzed for 6PPDQ via methods KCEL SOP #4077 and MEL SOP #730236V1.1, respectively (Appendix C). No laboratories were accredited for 6PPDQ analysis at the outset of this project, but Ecology's Lab Accreditation Unit (LAU) signed an accreditation waiver for KCEL and MEL for analysis of samples associated with this project. MEL received accreditation in late 2023. Field protocol samples delivered to KCEL in HDPE or FLPE containers were transferred to



amber glass containers as required by laboratory SOP either upon receipt or immediately prior to analysis depending on the experimental group.

The laboratories reported analytical results within 30 days of receipt of the samples as tabular electronic data deliverables to minimize data entry problems and facilitate data analysis. Reports provided sample and quality control data including all raw data and quality control results associated with the data. Reports included a case narrative summarizing any problems encountered in the analyses, corrective actions taken, changes to the referenced methods, and an explanation of data qualifiers.



Monitoring Events and Quality Assurance Review

Monitoring Events

The highway characterization and BMP performance monitoring objective of collecting 20 paired samples across five storm events was partially met with the following exceptions:

- 16 samples (8 influent, 8 effluent) were collected at SCTF Test Bay 2 over four storm events.
- 12 samples (6 influent, 6 effluent) were collected at SCTF Test Bay 4 over three storm events. Additional storms were not targeted at this test bay because monitoring at the associated stormwater BMP was suspended.
- 12 samples (6 influent, 6 effluent) were collected at STTC Test Bay 1 over three storm events. Because monitoring of the associated stormwater BMP was delayed, additional storms could not be sampled before the end of the wet season.
- No samples were collected at STTC Test Bay 2 due to significant delays in installation of the associated stormwater BMP.

The field protocol sampling objective of collecting ten split samples of each experimental group across two rounds was met except for one sample from the AUTO_OLD experimental group (Table 2) which was skipped due to sampling error. All sampling events with associated laboratory report ID are presented in Table 3 below.



Table 3. Stormwater Sampling Summary.									
Sample Date	Lab Report ID	Analytical Lab	Number of Samples	Stations	Antecedent Dry Period (hr)	Total Storm Depth (in)	Total Storm Duration (hr)	Average Storm Intensity (in/hr)	Comment
Ship Canal Tes	t Facility – Seatt	le, Washing	jton						
2023-05-05	L81563	KCEL	9	TB2.5, TB4	266	0.60	13	0.046	Field duplicate at TB4-IN
2023-06-18	L81690	KCEL	84	SCTF Influent	35	0.22	13	0.017	Field protocol round 1
2023-06-18	2306047	MEL	10						
2023-10-24	L81678	KCEL	5	TB1	165	0.84	18	0.047	Field duplicate at TB1-IN
2023-11-01	L82372	KCEL	9	TB1, TB2.5	180	1.46	15	0.097	Field duplicate at TB25-IN
2023-11-06	L82371	KCEL	5	TB1	13	0.59	15	0.039	Field duplicate at TB1-IN
2023-11-21	L81678, L82371	KCEL	12	TB1, TB2, TB2.5	68	0.38	7	0.052	No duplicate collected
2023-12-19	L82954	KCEL	9	TB1, TB2	13	0.28	13	0.022	Field duplicate of TB2-IN
2024-01-08	L82954, L82955	KCEL	13	TB2, TB2.5, TB4	15	0.74	23	0.032	Field duplicate of TB25-IN
2024-01-18	L82955	KCEL	4	TB2.5	14	0.40	17	0.024	No duplicate collected
2024-01-24	L82955, L82956	KCEL	9	TB2, TB4	39	0.24	9	0.027	Field duplicate of TB4-IN
2024-02-28 2024-02-28	L83306 2402033	KCEL MEL	85 10	SCTF Influent	53	1.28	26	0.049	Field protocol round 2, one AUTO_OLD split missed
	chnology Testing			ion					
2023-06-18	L81564	KCEL	2	G2	213	0.99	16	0.062	Gravity line 2 samples
2023-08-31	L81565	KCEL	2	G2	1,738	0.39	10	0.039	Gravity line 2 samples
2024-03-25	L82959	KCEL	4	TB1	59	0.44	16	0.028	No duplicate collected
2024-03-27	L82960	KCEL	5	TB1	20	0.45	11	0.041	Field duplicate of TB1-IN
2024-04-25	L82961	KCEL	4	TB1	417	0.58	9	0.064	No duplicate collected

^a Total sample count includes field duplicates and equipment rinsate blank samples.

KCEL = King County Environmental Laboratory

MEL = Manchester Environmental Laboratory



Quality Assurance

Measurement quality objectives (MQOs) establish the performance metrics and criteria for acceptance that provide the basis for evaluating data quality and usability. MQOs for precision and bias established in the QAPP are presented in Table 4 below.

Table 4. Measurement Quality Objectives.								
Parameter	Lab	Reporting Limit	Method Detection Limit	Method Blank	Rinsate Blank	Laboratory or Field Duplicate RPD or Difference ^a	Matrix Spike Percent Recovery	Spike Blank Percent Recovery
6PPDQ	KCEL	10 ng/L	2 ng/L	<mdl< td=""><td><rl< td=""><td>40% or ± 2 × RL</td><td>50-150</td><td>50–150</td></rl<></td></mdl<>	<rl< td=""><td>40% or ± 2 × RL</td><td>50-150</td><td>50–150</td></rl<>	40% or ± 2 × RL	50-150	50–150
6PPDQ	MEL	1 ng/L	0.365 ng/L	<1/2 RL	<rl< td=""><td>40</td><td>40-160</td><td>50–150</td></rl<>	40	40-160	50–150

The relative percent difference must be less than or equal to the indicated percentage for values greater than five times the reporting limit. The absolute difference must be less than or equal to two times the reporting limit for values less than or equal to five times the reporting limit.

KCEL = King County Environmental Laboratory; MEL = Manchester Environmental Laboratory;

RPD = relative percent difference; RL = reporting limit; MDL = method detection limit; ng/L = nanograms per liter

Data from laboratory reports underwent a quality assurance audit, in accordance with the QAPP (Herrera 2023). All laboratory and field quality assurance samples were within project MQOs resulting in no data qualifiers. All results were found valid and acceptable for use.



Results

Highway Runoff Characterization

Concentrations of all untreated influent samples collected during each target storm event were used to calculate an average storm event concentration for each storm event. 6PPDQ concentrations were generally consistent between I-5 (SCTF) and I-205 (STTC) runoff during the monitoring period with median storm event concentrations of 658 and 765 ng/L, respectively (Table 5). 11 storm events were targeted at the SCTF including the two rounds of field protocol sampling compared to the five total storm events targeted at the STTC. Three of the target storm events were collected at STTC-TB1 while two were collected at STTC-G2. Although the median concentrations were similar, the SCTF had a greater range of observed storm event concentrations (421 to 1,040 ng/L) compared to STTC-TB1 (707 to 878 ng/L). Smaller range of event concentrations at the STTC may be due to the smaller sample size or the mixing effect in the facility's wet well.

Table 5. Storm Event 6PPDQ Concentrations in I-5 and I-205 Runoff.								
	Storm 6PPDQ Concentrat							
Location	Events	Minimum	Median	Mean	Maximum			
SCTF-TB1 through TB4 – Test Bays and Field Protocol Influent	11	421	658	714	1,040			
STTC-TB1 – Test Bay 1 Influent	3	707	765	783	878			
STTC-G2 – Gravity line 2 Influent	2	1,540	1,770	1,770	2,000			

^a Concentrations were averaged within each storm event across all influent samples collected before calculating summary statistics. ng/L = nanograms per liter

Concentrations in individual samples collected from the STTC gravity line (STTC-G2) were all higher than the STTC-TB1 samples (Figure 3). Seasonal variation in 6PPDQ concentrations, which have not been well characterized, may explain these differences as the STTC-G2 samples were collected during the dry season in June and August 2023, compared to the STTC-TB1 samples which were collected in March and April 2024 and the SCTF samples which were mostly collected during the wet season (Table 3). Gravity lines at the STTC are also installed lower in the wet well than the pumped test bay influent lines and may include a higher portion of settled sediment from the wet well. Settled sediments in stormwater systems may act as a reservoir for 6PPDQ.

All test bay influent concentrations were above the coho salmon LC50 of 95 ng/L with a minimum single sample concentration of 209 ng/L. The first two sets of untreated I-5 runoff samples collected during the first round of field protocol sampling were below the LC50 with a minimum concentration of 68 ng/L but may be representative of base flow concentrations (from infiltration and inflow entering the upstream drainage system). All other individual samples collected during both rounds of field protocol sampling were above the LC50.



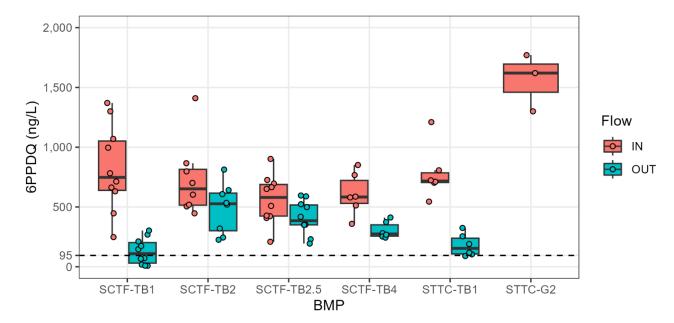


Figure 3. Influent and Effluent 6PPDQ Sample Concentrations at SCTF (I-5) and STTC (I-205).

Note: Dashed line at 95 ng/L represents the LC50 for juvenile coho salmon (Tian et al. 2022).

BMP Effectiveness

Out of 20 sets of paired influent and effluent samples across five proprietary BMPs, 19 sets of samples exhibited 6PPDQ reductions. One set of paired samples collected at SCTF-TB2 (Membrane Filter) on January 24, 2024, exhibited slight 6PPDQ export of 2.9 percent—increasing from 519 to 534 ng/L. Changes in 6PPDQ concentrations ranged from this slight export up to a 97.9 percent reduction, which was observed at SCTF-TB1 on December 19, 2023 (Table 6).

Table 6. Stormwater BMP Performance.								
	Type of Treatment		6PPDQ	Percent Rec	Median 6PPDQ Concentrationb			
Location	Technology	na	Min	Median	Max	Influent	Effluent	
SCTF-TB1	High flow rate biofilter	10	59.4%	87.3%	97.9%	760	110	
SCTF-TB2	Membrane filter	8	-2.9%	38.3%	59.4%	652	527	
SCTF-TB2.5	Horizontal bed media filter	10	7.2%	17.9%	64.7%	580	385	
SCTF-TB4	Cartridge-based media filter	6	19.7%	54.1%	68.5%	570	275	
STTC-TB1	High flow rate biofilter	6	55.0%	81.2%	85.4%	713	154	

Two sets of paired stormwater grab samples were collected from BMPs during each target storm event. The listed number of samples indicates the total number of paired samples collected. For example, 10 samples indicates that 10 influent samples paired with 10 effluent samples were collected at a BMP collected over the course of five storm events.

Median pollutant reductions varied considerably between BMPs with the lowest reduction of 17.9 percent at SCTF-TB2.5 and the highest reduction of 87.3 percent at SCTF-TB1 (Table 6). While the pollutant reduction ranges of all BMPs overlapped except for SCTF-TB1 and SCTF-TB2, reductions at SCTF-TB1 and



^b Median 6PPDQ concentration from all samples collected presented in nanograms per liter.

STTC-TB1 were generally higher than other BMPs and both had median reductions of over 80 percent (Figure 4). SCTF-TB1 was the only BMP to exhibit pollutant reductions of over 90 percent and did so in five out of ten pairs of samples with influent concentrations ranging from 248 to 1,370 ng/L. SCTF-TB1 and STTC-TB1 BMPs are both high flow rate biofilters. However, other variables may be impacting performance outside of the BMP type, including influent 6PPDQ concentrations or particle size distribution, flow rates, maintenance conditions, and storm characteristics.

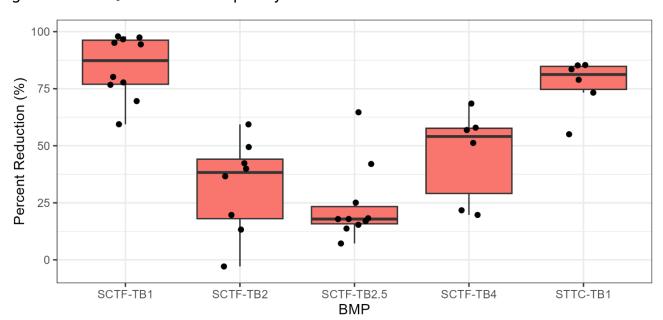


Figure 4. 6PPDQ Reductions in Proprietary Stormwater BMPs.

High influent concentrations can be associated with higher pollutant reductions. For example, when effluent concentrations remain relatively stable while influent concentrations vary, pollutant reduction varies in response. Pollutant reductions and influent 6PPDQ concentrations are plotted for each BMP in Figure 5, below, with linear regression in blue. Pollutant reduction performance increased with increasing influent concentration at SCTF-TB2.5 and SCTF-TB4 indicating that the performance of these BMPs was influenced by influent concentration. Pollutant reductions at all other BMPs remained relatively stable with varying influent concentrations indicating that the performance of these BMPs was not influenced by the influent concentrations. Median influent 6PPDQ concentration at SCTF-TB1 and STTC-TB1 were both above 700 ng/L compared to 570 to 652 ng/L median influent concentrations at the other test bays. Based on the regression presented in Figure 5, SCTF-TB2.5 and SCTF-TB4 percent reductions would have likely fallen between 30 and 60 percent with influent concentrations of around 750 ng/L (comparable to SCTF-TB1 and STTC-TB1).



SCTF-TB1 SCTF-TB2 SCTF-TB2.5 90 60 Percent Reduction (%) 1000 500 SCTF-TB4 STTC-TB1 60 30 0 1000 500 500 1000

Figure 5. 6PPDQ Reductions in Proprietary Stormwater BMPs Regressed on Influent Concentration.

Impact of maintenance on BMP performance is difficult to quantify. Maintenance was conducted on BMPs in this study as needed when the unit clogged or prematurely bypassed. Specific maintenance activities conducted at each BMP in this study are detailed in Table 7, below. In general, frequency of BMP maintenance did not appear to have an impact on BMP performance. SCTF-TB1, which had the highest median 6PPDQ removal, was sampled between October and December 2023, and was only maintained on two occasions during this period. SCTF-TB2.5, which had the lowest median 6PPDQ removal, was sampled between May 2023 and January 2024, and was maintained on several occasions including full filter media replacement.

Influent Concentration (ng/L)



Table 7. BMP Maintenance During Monitoring Period.					
Date	Maintenance Summary				
SCTF-TE	81				
2023-10-19	Clogged mulch layer replaced. Top couple inches of media loosened and mixed.				
2023-11-17	Mulch layer replaced. Top couple inches of media loosened and mixed.				
SCTF-TE	32				
2023-11-06	Vactor cleanout of cartridge vault. New filter cartridges installed in vault.				
2023-12-04	Replaced clogged ribbons in all filter cartridges.				
2024-01-22	Replaced clogged ribbons in accessible filter cartridges. Some cartridges inaccessible due to freeze.				
SCTF-TE	32.5				
2023-02-17	Replaced media and reused pea gravel after rinsing.				
2023-06-20	Replaced all filter media and gravel.				
2023-06-26	Removed all media and cleaned metal screen which had become obstructed. Reinstalled old clean media.				
2023-10-02	Washed and reinstalled pea gravel. Replaced upper few inches of media.				
2023-10-19	Replaced all filter media.				
2023-11-17	Replaced all filter media.				
SCTF-TE	84				
2023-06-16	Clogged media layer removed via vactor truck.				
2023-11-17	New media installed in BMP filter vault.				
STTC-TI	B1				
2024-03-08	Flushed mulch layer with clean water.				

A variety of storm characteristics can influence pollutant concentrations in stormwater including antecedent dry period, storm intensity, and total precipitation. As these characteristics increase, pollutant concentrations are generally expected to increase as more sediment has accumulated on roadways and is then mobilized by the storm. Storm characteristics are plotted below with facility 6PPDQ influent concentrations (Figure 6) and with individual BMP performance (Figure 7). Although there were some trends visible in these plots, storm characteristics did not appear to have a substantial impact on either influent concentrations or BMP performance.



Figure 6. Facility 6PPDQ Concentrations and Storm Characteristics

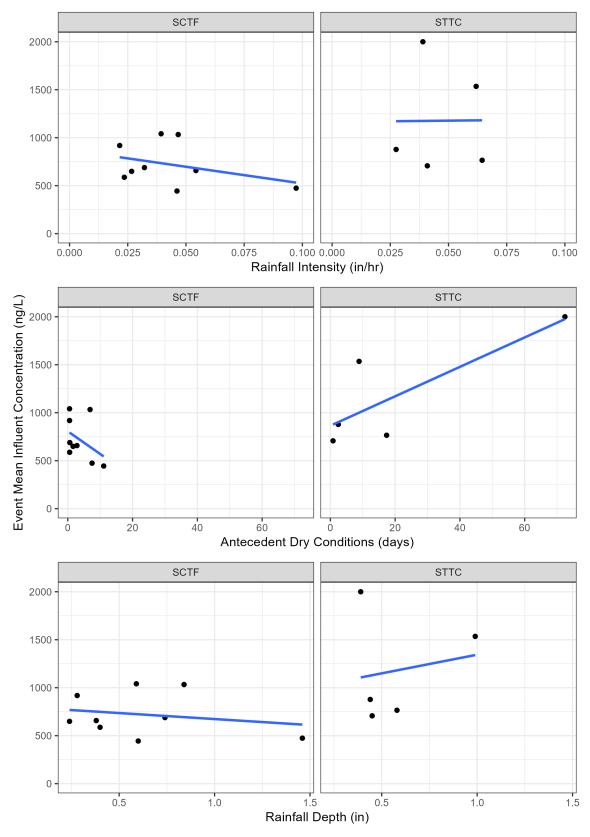
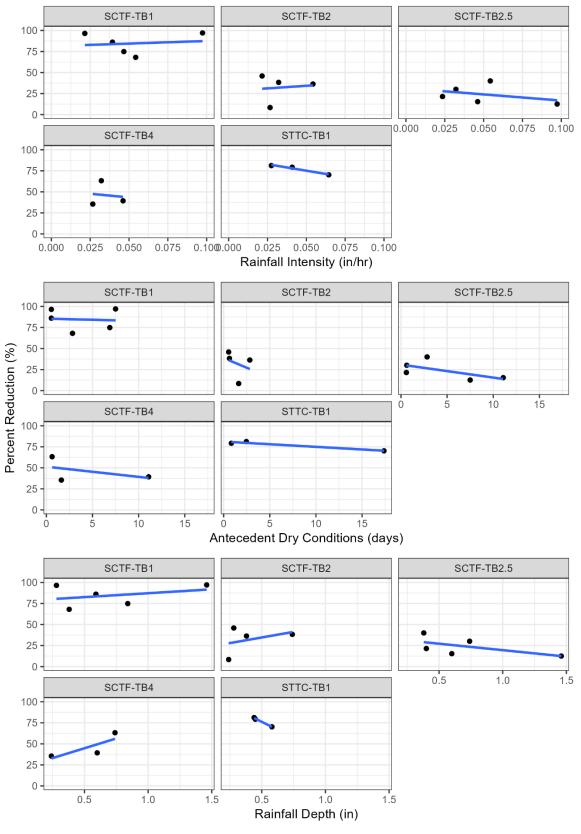




Figure 7. BMP 6PPDQ Removal Performance and Storm Characteristics



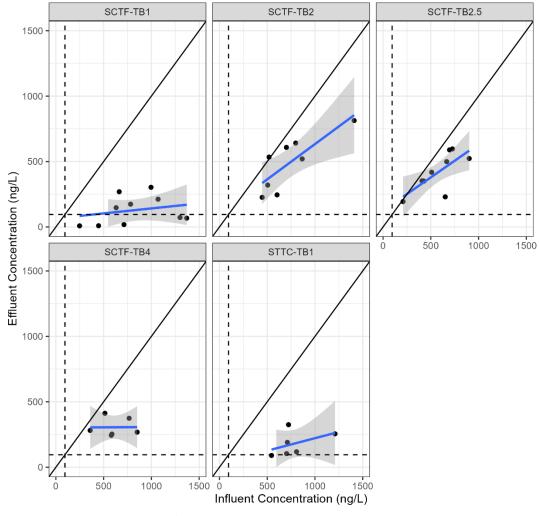


Effluent 6PPDQ concentrations, while typically much lower than influent concentrations, were generally above the juvenile coho salmon LC50 of 95 ng/L as shown in Figure 8. In agreement with calculated pollutant reductions, median effluent concentrations at SCTF-TB1 and STTC-TB1 (110 and 154 ng/L, respectively) were lower than the other proprietary BMPs which ranged from 275 to 527 ng/L (Table 6). Six out of the 40 total effluent samples collected exhibited concentrations below the LC50 as described below.

- Five effluent samples from SCTF-TB1 were below the LC50 ranging from 8.3 to 72.2 ng/L.
- One effluent sample from STTC-TB1 was below the LC50 with a concentration of 89.8 ng/L.

Three of these effluent concentrations below the LC50 were associated with lower influent concentrations of around 500 ng/L or lower (Figure 8). The remaining three were associated with influent concentrations ranging from around 700 to 1300 ng/L, all at SCTF-TB1. With the exception of SCTF-TB4, lower effluent concentrations were generally associated with lower influent concentrations at all BMPs as indicated by the positive slope of the linear regression (Figure 8).

Figure 8. Paired 6PPDQ Influent and Effluent Concentrations in Proprietary Stormwater BMPs.



Note: Dashed line at 95 ng/L represents the LC50 for juvenile coho salmon (Tian et al. 2022).



Field Protocol Evaluation

Field protocol sampling was conducted at the SCTF on June 18, 2023, and on February 28, 2024. 6PPDQ concentrations in the ten sets of control group (CONT) samples for both rounds are presented in Table 8, below.

Table 8. Field Protocol Sampling 6PPDQ Concentrations by Round and Split.							
Event	Split Sample Number	Time	6PPDQ Concentration (ng/L)				
Round 1 — 2023-06-18	1	15:10	67.8				
	2	15:32	71				
	3	16:02	855				
	4	16:19	760				
	5	16:48	547				
	6	17:05	486				
	7	18:35	370				
	8	18:53	348				
	9	19:09	360				
	10	19:27	341				
Round 2 — 2024-02-28	1	9:37	944				
	2	10:00	944				
	3	10:23	863				
	4	10:49	737				
	5	13:04	434				
	6	14:08	648				
	7	14:29	840				
	8	14:52	1,190				
	9	15:20	1,380				
	10	15:47	1,260				

ng/L: Nanograms per liter.

6PPDQ concentrations in CONT ranged from 68 to 855 ng/L and 434 to 1,380 ng/L during the first and second rounds, respectively. The storm on June 18, 2023, had a total depth of 0.22 inches over 13 hours for an average intensity of 0.017 inches per hour (Table 3). However, only around 0.03 inches of precipitation occurred during the approximately four and a half hour sampling period. The storm on February 28, 2024, had a total depth of 1.28 inches over 26 hours for an average intensity of 0.049 inches per hour (Table 3). Around 0.25 inches of precipitation occurred during the approximately six-hour sampling period. Antecedent dry periods for the sampled storms were 35 and 53 hours, respectively (Table 3).

The first two samples collected during the first round of sampling had the lowest concentrations of all untreated samples collected under this sampling program and may represent typical concentrations in base flow at the SCTF rather than stormwater concentrations. Concentrations peaked immediately after these two samples indicating that this event likely represents the first flush conditions. Sampling for the



second round was conducted during a lull in precipitation between two more intense periods of rain and the 6PPDQ concentrations mirror this pattern with two peaks at the start and end of sampling.

Round One

Nine experimental groups were sampled on June 18, 2023, including the following:

- Control Group (CONT).
- PTFE Tubing Group (PTFE_TUB).
- Silicone Tubing Group (SILI_TUB).
- HDPE Bottle Full Time Group (HDPE_FT).
- HDPE Bottle 24 Hour Group (HDPE_24).
- FLPE Bottle Full Time Group (FLPE_FT).
- FLPE 24 Hour Group (FLPE_24).
- Laboratory Split Group (LAB).
- Field Duplicate Group (FD).

The first two sets of samples collected, as noted above, were likely representative of base flow conditions immediately before the first flush of stormwater (Figure 9) after which the 6PPDQ concentrations peaked and then gradually decreased. The pollutograph for the first round of field protocol sampling on June 18, 2023, is shown in Figure 10. The 6PPDQ concentrations of the experimental groups generally stay consistent with the control (CONT) and field duplicate groups throughout the sampling event except for the FLPE_FT and FLPE_24 groups which appear to have slightly lower concentrations than other groups, particularly during the middle of the sampling event (Figure 10). 6PPDQ concentrations for the control group during this round of sampling (ranging from 67.8 to 855 ng/L) were comparable to typical highway runoff 6PPDQ concentrations in this area (Tian et al. 2021) except for the first two samples which were below typical concentrations (Table 8).



Figure 9. Field Protocol Round One Storm Event Hyetograph.

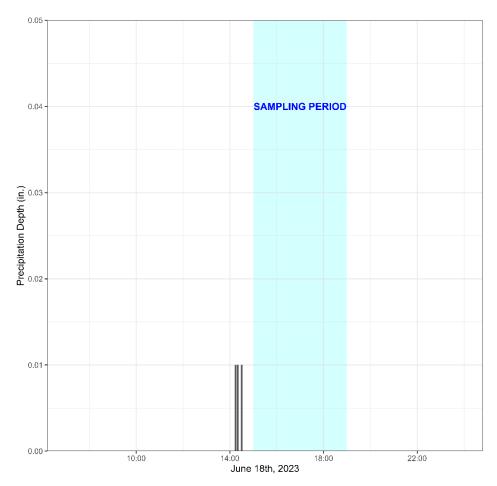
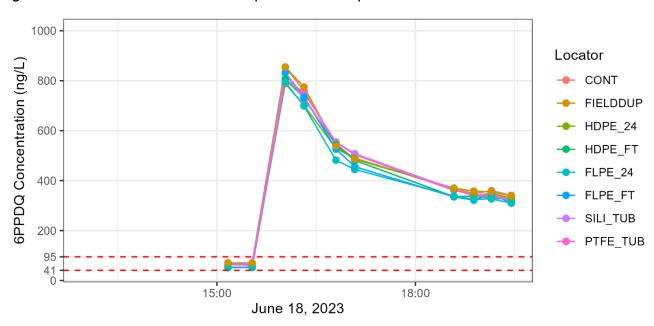


Figure 10. Field Protocol Round One Experimental Group Concentrations.



Note: Dashed line at 41 and 95 ng/L represents the LC50 for 3-week and 1-year juvenile coho salmon, respectively (Tian et al. 2022).



Percent recoveries of the experimental groups compared to the control group were calculated and are plotted in Figure 11. The field duplicate group recoveries were between 99 to 105 percent with a mean and median of 101 and 100 percent, respectively, indicating that sample heterogeneity or sampling methods were likely insignificant sources of differences in the percent recoveries of other experimental groups. The FLPE_24 and FLPE_FT groups exhibited the lowest percent recoveries with means of 88 and 91 percent, respectively, and the difference was statistically significant with a p-value of less than 0.01 (Table 9). In addition to the low mean recoveries, these FLPE groups each had two samples with recoveries below 80 percent which are the lowest of any experimental group in either round of field protocol monitoring. The HDPE_24 and HDPE_FT groups both exhibited mean recoveries of 95 percent and this difference was statistically significant with a p--value of less than 0.01 (Table 9). Mean percent recoveries of the two tubing experimental groups, PTFE_TUB and SILI_TUB, were 97 and 98 percent, respectively, but these differences were not statistically significant (Table 9).

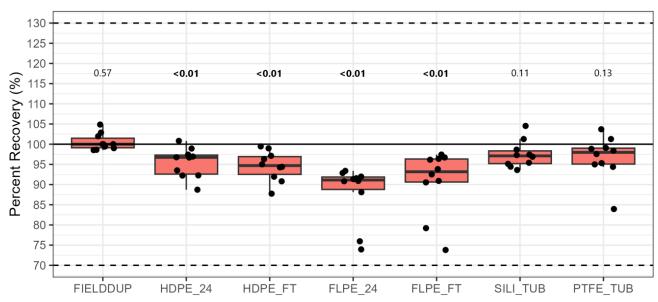


Figure 11. Field Protocol Round One Experimental Group Recoveries.

Note: Permutation paired test p-values noted above respective experimental groups (Table 9).

Table 9. Field Protocol Tests Round One.								
Test Group	Group Code	Mean Difference	Mean Recovery	Permutation Paired Test p-value				
Field Duplicate	FD	0.5%	101%	0.57				
Teflon Tubing	PTFE_TUB	-3.3%	97%	0.13				
Silicone Tubing	SILI_TUB	-2.5%	98%	0.11				
HDPE Bottle (24-hrs)	HDPE-24	-4.6%	95%	<0.01				
HDPE Bottle (Full Time)	HDPE_FT	-5.4%	95%	<0.01				
FLPE Bottle (24-hrs)	FLPE_24	-11.9%	88%	<0.01				
FLPE Bottle (Full Time)	FLPE_FT	-9.3%	91%	<0.01				

Bold indicates statistically significant difference between the experimental group and control group concentrations (p-values of less than 0.05).

HDPE = High density polyethylene; FLPE = Fluorinated high-density polyethylene



6PPDQ loss appears to have been exhibited in all experimental groups with mean percent recoveries below 100 percent. The lowest mean recoveries which represent the greatest losses were in the two FLPE groups. Similar to the FLPE groups, the HDPE groups had mean recoveries below 100 percent (95 percent for both HDPE groups), though higher than the FLPE groups, and the difference from the control group concentrations were statistically significant. The two tubing groups had mean percent recoveries of 97 to 98 percent and the differences were not statistically significant. However, these tubing groups both had relatively high maximum recoveries of around 105 percent and PTFE_TUB had a low outlier of less than 85 percent (Figure 11).

Round Two

Nine experimental groups were sampled on February 28, 2024, including the following:

- Control Group (CONT).
- PTFE Tubing Group (PTFE_TUB).
- PTFE Used Tubing Group (PTFE_TUB_OLD).
- HDPE Bottle 24 Hour Group (HDPE_24).
- HDPE 24 Hour Large Carboy Group (HDPE_24_20L).
- HDPE Used Bottle 24 Hour Group (HDPE_OLD).
- Autosampler Used Group (AUTO_OLD).
- Laboratory Split Group (LAB).
- Field Duplicate Group (FD).

Sampling was conducted between two peaks in runoff with the first several samples collected during the falling limb of a pulse of precipitation and the final samples collected during the rising limb of a second pulse of precipitation (Figure 12) which is mirrored in the event 6PPDQ concentrations. The pollutograph for the second round of field protocol sampling on February 28, 2024, is shown in Figure 13 below. The experimental groups generally stay consistent with the control (CONT) and field duplicate groups throughout the sampling event. The ninth set of the AUTO_OLD experimental group was missed due to sampling error. 6PPDQ concentrations for the control group during this round of sampling ranged from 434 to 1,380 ng/L which were higher than concentrations during the first round of field protocol sampling but are comparable to the range of typical highway runoff 6PPDQ concentrations in this area (Tian et al. 2021).



0.04-SAMPLING PERIOD

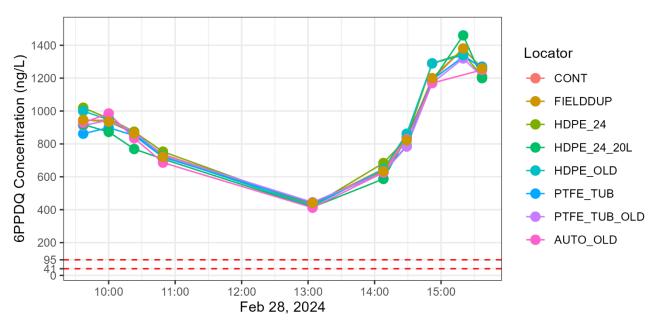
(i) 0.03-0.02-0.01

Figure 12. Field Protocol Round Two Storm Event Hyetograph.

Figure 13. Field Protocol Round Two Experimental Group Concentrations.

0.00

02:00



Note: Dashed line at 41 and 95 ng/L represents the LC50 for 3-week and 1-year juvenile coho salmon, respectively (Tian et al. 2022).

Percent recoveries of the experimental groups compared to the control group were calculated and plotted in Figure 14. The field duplicate group recoveries ranged from 98 to 102 percent with a mean and median of 100 percent, indicating that sample heterogeneity or sampling methods were likely insignificant sources of differences in the percent recoveries of other experimental groups. Mean percent



recoveries were generally higher than the first round of field protocol monitoring and ranged from 96 to 102 percent for all experimental groups (Table 10). The PTFE_TUB and PTFE_TUB_OLD experimental groups exhibited mean percent recoveries of 97 and 98 percent, respectively, and were the only experimental groups with differences that were statistically significant from the control (Table 10). Experimental group HDPE 24 20L had the lowest mean percent recovery at 96 percent, but the difference was not statistically significant with the individual recoveries ranging from 88 to 107 percent. This range of percent recoveries for HDPE 24 20L was greater than any other experimental group during the second round indicating that increased headspace and HDPE surface area to volume ratio likely play a role in the differences in percent recovery compared to other HDPE groups.

The PTFE_TUB group, which was sampled during both rounds, exhibited the same mean percent recovery of 97 percent but the difference from the control group was statistically significant in the second round with a p-value of 0.02 versus 0.13 in the first round (Table 9 and Table 10). HDPE_24, which was also sampled during both rounds, exhibited greater percent recoveries (mean of 102 percent versus 95 percent in the first round) and the difference was not statistically significant in the second round with a p-value of 0.32 versus less than 0.01 in the first round. Differences in the results for these groups between the two sampling rounds indicates that additional variables such as 6PPDQ concentrations may impact the performance of field materials.

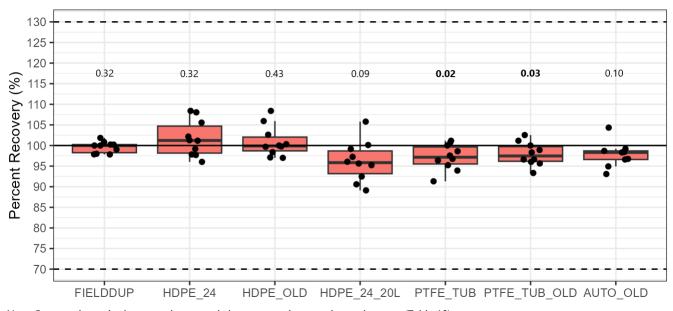


Figure 14. Field Protocol Round Two Experimental Group Recoveries.

Note: Permutation paired test p-values noted above respective experimental groups (Table 10).



Table 10. Field Protocol Tests Round Two.						
Test Group	Group Code	Mean Difference	Mean Recovery	Permutation Paired Test p-value		
Field Duplicate	FD	0.4%	100%	0.32		
Teflon Tubing	PTFE_TUB	2.8%	97%	0.02		
Used Teflon Tubing	PTFE_TUB_OLD	2.1%	98%	0.03		
HDPE Bottle (24-hrs)	HDPE_24	-1.7%	102%	0.32		
20L HDPE Bottle (24-hrs)	HDPE_24_20L	3.9%	96%	0.09		
Used HDPE Bottle	HDPE_OLD	-0.9%	101%	0.43		
Autosampler	AUTO_OLD	2.2%	98%	0.10		

Bold indicates statistically significant difference between the experimental group and control group concentrations (p-values of less than 0.05).

HDPE = High density polyethylene

Most experimental groups in the second round exhibited some 6PPDQ loss on average, but notably the HDPE_24 and HDPE_OLD groups exhibited mean percent recoveries above 100 percent and maximum percent recoveries in both groups of up to 108 percent. Recoveries above 100 percent may partly be due to degradation of 6PPD into 6PPDQ in these experimental groups. The AUTO_OLD group is most comparable to typical composite stormwater sampling configurations and was extremely close to control group concentrations with a 98 percent recovery and a p-value of 0.10 (Table 10). AUTO_OLD recoveries ranged from approximately 93 to 105 percent with the majority falling between 95 to 100 percent (Figure 14).

Rinsate Blanks

A rinsate blank was collected before the first sample split and after the tenth and final sample split for all experimental groups that included tubing. Two experimental groups (PTFE_TUB and SILI_TUB) included tubing in the first round of sampling, and three experimental groups (PTFE_TUB, PTFE_TUB_OLD, and AUTO_OLD) included tubing the second round of sampling. Analytical results for the ten rinsate blanks are presented in Table 11, below.

Table 11. Field Protocol Sampling Rinsate Blank Results.						
	Rinsate Blank 6PPDQ Concentration (ng/L)					
Experimental Group	Pre-Sampling	Post-Sampling				
Field Protocol Sampling Round 1 – 2023-06-18						
PTFE_TUB	<2.0 U	<2.0 U				
SILI_TUB	<2.0 U	<2.0 U				
Field Protocol Sampling Round 2 – 2024-02-	Field Protocol Sampling Round 2 – 2024-02-28					
PTFE_TUB	3.0 J	3.2 J				
PTFE_TUB_OLD	3.3 J	6.3 J				
AUTO_OLD	4.0 J	7.1 J				

J: Result was detected at concentrations below the reporting limit of 10 ng/L and was qualified as estimated.

ng/L: Nanograms per liter.



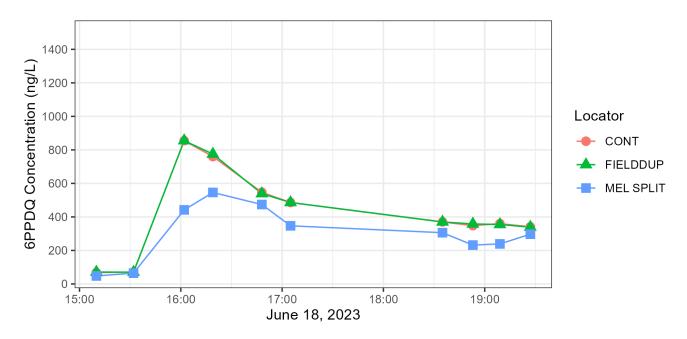
U: Result was undetected at the method detection limit of 2 ng/L.

6PPDQ was not detected in all four rinsate blanks submitted with the first round of sampling at a detection limit of 2 ng/L. 6PPDQ was detected in all six rinsate blanks submitted with the second round of sampling at concentrations below the reporting limit of 10 ng/L ranging from 3.0 to 7.1 ng/L. The rinsate blank MQO (less than the reporting limit) was met in all rinsate blank samples (Table 4). Concentrations were slightly higher in the PTFE_TUB_OLD and AUTO_OLD groups which both included previously used segments of PTFE and silicone tubing. This indicates that these materials may leach trace amounts of 6PPDQ but are generally not of concern when compared to typical stormwater 6PPDQ concentrations.

Laboratory Split Evaluation

Samples collected during the two rounds of field protocol evaluation were also used to evaluate differences in 6PPDQ results between two laboratories, KCEL and MEL. Results from the control, field duplicate, and lab split experimental groups are plotted in Figure 15 and Figure 16. The difference between the laboratory results was statistically significant in the first round (permutation paired test p-value of less than 0.01) but was not statistically significant in the second round (p-value of 0.051).

Figure 15. Laboratory Split Round One Concentrations.





Locator

Locator

FIELDDUP

MEL SPLIT

13:00

Feb 28, 2024

14:00

15:00

Figure 16. Laboratory Split Round Two Concentrations.

11:00

12:00

10:00

6PPDQ concentrations were generally lower in the MEL split sample, particularly during the first round of sampling and during the first and ninth splits of the second round (Figure 15 and Figure 16). Some discrepancies in results should be expected because an accredited analytical method had not been established at the time of this testing, so the two laboratories were using different analytical methods. The control and field duplicate samples were both analyzed with the same method at KCEL and exhibited relative percent differences (RPDs) of less than 5 percent for all 20 samples collected (Table 12). The MQOs established in the QAPP lists field and laboratory duplicate criteria as an RPD of 40 percent or less (Table 4). The MEL split sample RPDs were mostly above 10 percent and exceeded the 40 percent MQO on two occasions during the first round but were mostly below 10 percent and exceeded the 40 percent MQO on one occasion during the second round of sampling (Table 12).

Table 12. Laboratory Split Relative Percent Differences (Compared to CONT).											
			Relative Percent Difference by Sample Set								
Sampling Round	Sample Type	1	2	3	4	5	6	7	8	9	10
6/18/2023 – Round One	Field Duplicate	4.8	1.0	0.0	2.0	1.5	0.0	0.0	2.8	1.4	0.6
	Laboratory Split	34.6	9.6	<u>63.7</u>	32.8	14.3	33.4	18.9	40.0	<u>40.4</u>	13.8
2/28/2024 – Round Two	Field Duplicate	0.2	1.0	0.2	2.2	1.8	2.0	2.2	8.0	0.0	0.0
	Laboratory Split	16.0	2.2	0.3	8.6	16.7	0.3	6.6	0.8	42.2	2.4

Bold underlined indicates sample relative percent difference was above field and laboratory measurement quality objective of ≤40 percent.

Laboratory control samples (LCS) are a common laboratory quality control sample where a blank sample is spiked with a known quantity of a target parameter and then analyzed. The analytical result is then compared to the known spike amount and reported as a percentage of the spike amount (percent recovery). The MQO for LCS percent recoveries at KCEL and MEL was 50 to 150 percent (Table 4). During



the first round of sampling where the LAB group concentrations were consistently lower than the CONT group, LCS recoveries ranged from 115 to 126 percent at KCEL compared to 82 to 93 percent at MEL (Table 13). This may indicate that, although the LCS recoveries were within project MQOs, there KCEL results were biased slightly high while MEL results were biased slightly low. During the second round of sampling where the LAB and CONT group concentrations were much more consistent with a few exceptions, median LCS recovery was 109 percent at KCEL and 108 percent at MEL (Table 13).

Table 13. Laboratory Split QC Sample Results.						
	Roui	Round 1 LCS Recovery			nd 2 LCS Reco	overy
Analytical Laboratory	Minimum	Median	Maximum	Minimum	Median	Maximum
KCEL	115	125	126	100	109	116
MEL	82	88	93	108	108	108

KCEL: King County Environmental Laboratory.

LCS: Laboratory control sample.

MEL: Manchester Environmental Laboratory.



Discussion and Conclusions

Highway Runoff Characterization

6PPDQ concentrations in untreated I-5 and I-205 runoff were characterized in this study with median concentrations of around 600 to 700 ng/L. During storm events, 6PPDQ concentrations typically exceed the juvenile coho salmon LC50 of 95 ng/L, often by over one order of magnitude. However, due to the limited scope of this investigation, there are areas of uncertainty that future investigations may address:

- The majority of the sampling was conducted in early WY2024, so longer-term investigations are needed to fully understand temporal patterns or relationships between storm characteristics such as antecedent dry period or storm intensity and 6PPDQ concentrations.
- Runoff samples were collected from two urban highways in the Pacific Northwest. Characterization of highway runoff outside of urban areas and from smaller urban arterials is needed to prioritize sources and pathways of 6PPDQ in coho salmon habitat.

BMP Performance

Proprietary BMPs tested in this monitoring program were able to consistently remove 6PPDQ from highway runoff but at varying degrees of effectiveness. High flow rate biofilters exhibited median 6PPDQ reductions of 81 and 87 percent, compared to median concentrations of 18, 38, and 54 percent for a horizontal bed media filter, membrane filter, and cartridge-based media filter, respectively. Effluent concentrations were below the coho salmon LC50 in several high flow rate biofilter samples, but median effluent concentrations for all BMPs were above the LC50.

The relatively high removal performance of the two biofilters tested in this study is consistent with predictions from previous studies including the Stormwater Treatment of Tire Contaminants Best Management Practices Effectiveness (Ecology 2022). The pollutant removal mechanisms with the highest potential to capture 6PPDQ included bioretention and sorption, particularly in media with high proportions of organic material. While proprietary stormwater BMP media blends include unique components and are not identical to the Ecology 60:40 bioretention soil mix, lab testing has shown that bioretention media can effectively reduce 6PPDQ concentrations to below detection levels (McIntyre & Kolodjiez, 2021). Likewise, stormwater filtration was identified as a mechanism with moderate potential which is supported by the median 38 percent reduction in the membrane filter BMP (Ecology 2022).

The horizontal bed media filter BMP installed in SCTF-TB2.5, which exhibited the lowest median pollutant reduction of 18 percent, may have performed poorly relative to the other BMPs due to the high manufacturer-specified design hydraulic loading rate and, to a lesser degree, lower influent 6PPDQ concentrations. Median influent 6PPDQ concentration at SCTF-TB2.5 was 580 ng/L compared to the range of 570 to 760 ng/L for all test bays (Table 6). The hydraulic loading rate for the SCTF-TB2.5 BMP was 7.1 gallons per minute per square foot (gpm/ft²) compared to a range of 1.0 to 3.1 gpm/ft² for the four other BMPs tested (Table 1). This high design hydraulic loading rate means that there was minimal



contact time with the filter media which may decrease the effectiveness of certain 6PPDQ treatment processes such as sorption.

Areas for future investigation include:

- Additional research on the effectiveness of specific treatment mechanisms for 6PPDQ rather than individual BMPs. Understanding of the effectiveness of these mechanisms will help guide proactive selection of stormwater BMPs to control 6PPDQ sources.
- Investigation into the relationship between 6PPDQ and other contaminant removal performance is not clearly understood. Additional grab or composite sampling paired with other parameters will help develop an understanding of relationships between 6PPDQ concentrations and other indicators such as the fine fraction of suspended solids.
- Investigation into the performance of other common BMPs such as wet ponds, bioswales, modified embankments, vaults, and street sweeping.

Field Sampling Protocols

The experimental groups tested in this study generally displayed minimal 6PPDQ losses when compared to similar laboratory sorption studies (Hu et al. 2023). The experimental group AUTO_OLD, which is intended to closely replicate actual field composite sampling materials and procedures, exhibited good recoveries ranging from approximately 93 to 105 percent and a mean recovery of 98 percent. A summary of findings from this study are presented in Table 14, below, and recommendations for field sampling procedures based off these results and preexisting laboratory studies are presented in the 6PPDQ Roadway Runoff Stormwater Composite Sampling Protocol Recommendations memorandum (Herrera 2024b).



Table 14. Summary of Field Protocol Sampling Material Results.					
		Appropriate	for Sampling		
Material	Findings	Stormwater	Receiving Waters		
HDPE – Bottle	HDPE experimental groups exhibited slightly different recoveries between the first and second rounds but were consistently within 95 to 110 percent. When additional variables were introduced including increased headspace and sample tubing, recoveries may decrease slightly but generally remain above 95 percent.	Yes	Unknown		
FLPE – Bottle	Two FLPE experimental groups tested in the first round exhibited lower recoveries than the two comparable HDPE groups including two sample splits with recoveries of less than 80 percent. Mean recoveries for FLPE_24 and FLPE_FT were 88 and 91 percent, respectively, which are appropriate for stormwater sampling if necessary. However, other materials should be selected, if possible, for better performance.	No (glass or HDPE preferred)	Unknown		
Amber Glass – Bottle	Amber glass grab sampling was selected as the control and field duplicate experimental groups because glass has shown low 6PPDQ sorption and is the sampling method described in the EPA draft method 1634. ^a 6PPDQ concentrations in these groups were generally highest indicating minimal 6PPDQ loss due to sorption or degradation.	Yes	Yes		
Silicone – Tubing	Silicone sample intake tubing was tested in one experimental group during the first round of sampling and exhibited recoveries comparable to PTFE tubing with a mean recovery of 98 percent. PTFE tubing sample groups also included a small segment of silicone tubing, so it is unclear whether the PTFE recoveries were substantially impacted by these silicone tubing segments. Laboratory testing on 6PPDQ sorption to silicone indicates that the material should be avoided where possible. However, silicone tubing is typically used as a short 2-foot segment in the autosampler pump head, so exposure time is low and thus 6PPDQ loss minimal.	Yes (Limited quantities)	Unknown		
PTFE & Silicone – Tubing	PTFE intake tubing with a small segment of silicone, which tubing represents typical tubing assemblies for peristaltic pump automated samplers, exhibited recoveries mostly above 95 percent.	Yes	Unknown		

^a From Hu et al. 2023 and EPA 2023.

FLPE: Fluorinated high density polyethylene; HDPE: High density polyethylene; PTFE: Polytetrafluoroethylene

Field duplicate RPDs were within five percent for all twenty splits collected during the field protocol sampling events (Table 12). In addition, mean percent recoveries of the field duplicate (FD) group were 101 and 100 percent during the first and second rounds, respectively (Table 9 and Table 10). These results indicate that sample volume heterogeneity and field procedures during the sampling events were likely not sources of significant variability in 6PPDQ results across the other experimental groups. Based on these consistent FD group results, we have high confidence that the differences between other experimental groups and the CONT group are due to the experimental groups' target materials and/or conditions.

The relatively poor performance of FLPE sample containers compared to HDPE was unexpected and may warrant additional investigation. FLPE containers are intended to provide additional barriers for adsorption and diffusion than HDPE containers, so additional interactions may be taking place. For



example, degradation of 6PPD to 6PPDQ in FLPE containers may be slower and would explain the increase in recoveries from FLPE_24 to FLPE_FT compared to relatively consistent recoveries in HDPE_24 to HDPE_FT (Figure 11.).

Contact time between the sample volume and these typical materials has a considerable impact on 6PPDQ losses due to sorption (Hu et al. 2023). In this field study, three distinct contact times were assessed including incidental contact for PTFE and FLPE tubing, 24-hour contact to emulate FLPE and HDPE composite sample carboys, and full holding time (approximately seven to 14 days) contact with FLPE and HDPE sample bottles. Certain materials that have a high potential for 6PPDQ sorption, such as silicone (Hu et al. 2023), do not appear to meaningfully impact 6PPDQ concentrations during incidental contact. Vacuum samplers are an alternative to peristaltic pump autosamplers and do not require silicone pump tubing to operate, eliminating the risk of prolonged contact time and increased sorption. However, Vacuum samplers are typically more expensive, include additional materials that come into contact with the sample volume, and have longer contact times during aliquot volume dosing.

Potential areas of future study to improve field sampling methods and protocols include:

- Replication of this monitoring program in an urban stream or other receiving water with lower expected 6PPDQ concentrations. Contamination or sorption may be more pronounced when sampling water with lower concentrations, so a deeper understanding of whether sampling material impacts change with changing 6PPDQ concentration is necessary.
- Results for HDPE bottle groups, specifically HDPE_24, which was sampled in both rounds, exhibited
 losses in the first round but minor gains in the second round. While median percent recoveries for
 HDPE experimental groups were all 95 percent or greater, individual sample recoveries ranged from
 88 to 109 percent, indicating additional sampling may be necessary to characterize variability of
 6PPDQ gains and losses from HDPE materials in field conditions.

Laboratory Methodology

Laboratory split samples collected during the two rounds of field protocol sampling consistently exhibited concentrations that were notably different between labs. Particularly during the first round of sampling, MEL results were well below KCEL results with few exceptions with relative percent differences of up to 64 percent. LCS percent recoveries differed between the two laboratories. In the first round of monitoring, KCEL LCS recoveries ranged from 115 to 126 percent, and MEL LCS recovering ranged from 82 to 93 percent. LCS percent recoveries in the second round of monitoring were 100 to 116 percent and 108 percent at KCEL and MEL, respectively. Small differences in laboratory methods and QC performance may have resulted in slight high bias for KCEL results and slight low bias for MEL results. These QC differences were within laboratory criteria and established project MQOs. The differences in QC results were particularly pronounced during the first round of field protocol sampling which corresponds with the larger differences between the concentrations from the control and lab split groups. Additional investigation including inter-lab comparison using a standardized analytical method, such as the EPA Draft Method 1634 (EPA 2023), through multiple analytical batches may be necessary to determine whether these differences are the result of acceptable variability in laboratory QC performance.



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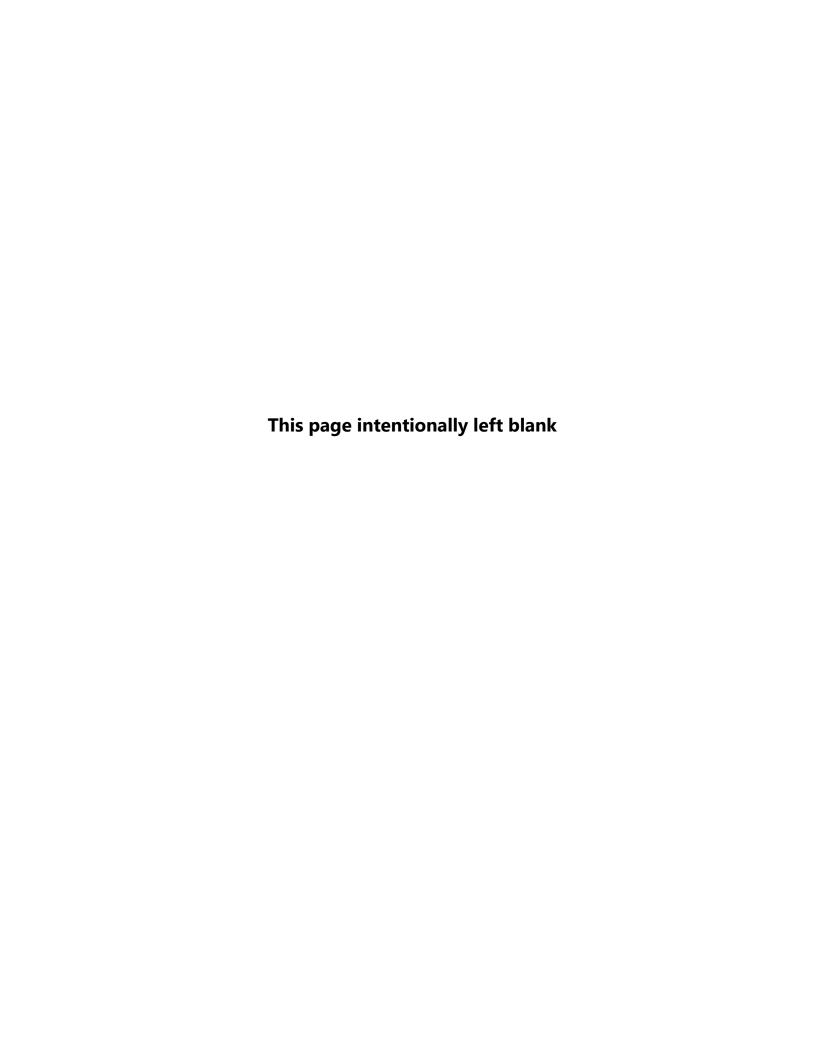
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Appendix A

Field Monitoring Forms







Exploratory Visit 2.5	
Project	Miscellaneous
ID	425402
Survey Date	02/28/2024
User	David Garcia
Personnel:	Nicholas Harris Scott Shumway
Purpose of Visit	6-PPDq Field Protocol #2
	Second round of sample collection for the 6PPD-q field protocol project. Sampling took place at the Ship Canal Test Facility (SCTF), located under the I-5 Ship Canal Bridge in the Wallingford neighborhood, Seattle, WA. Samples we're collected between 09:00 and 16:00 on 2024-02-29. All 10 sampling sets we're collected during this time. Sampling took place at one of the several testing bays within the SCTF, from a spigot previously upfitted for stormwater sample collection. Stormwater was flushed from spigot initially to flush out built up sediment upstream of spigot. Samples we're only collected during times of moderate to intense rainfall to ensure mainly stormwater was collected, not baseflow.
To Do for Next Visit?	No
Location 1	
Location Name	
Coordinates	
Latitude	47.6561706
Longitude	-122.3218725
Time	07:00 AM

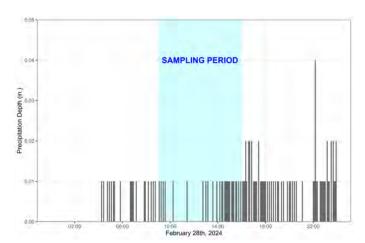
Photos

Time Zone



PST

Initial set-up of the sample collection area



Rainfall from the sampling event





Cooler organization for sample collection



Unclogging of spigot prior to sampling (clogged with sediment build up)



Carboy organization for sample collection



Initial bottle set-up in cooler





Churn splitter position for sampling



Collection of sample from churn splitter (HDPE_20L_24)

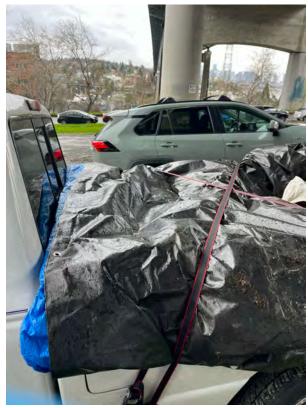


Initial rinsing of churn splitter using stormwater from sample source



Temporary carboy preservation





Temporary carboy preservation (ice cooled truck bed, with 2 tarps protecting carboys from direct sunlight)



Carboy agitation prior to transfer



Air temperature of carboy preservation @ 12:24 on 24-02-29, just before transfer to amber glass



Carboy agitation prior to transfer





Homogenized sample after agitation, prior to transfer



Transfer of sample from carboy to intermediary transfer vessel



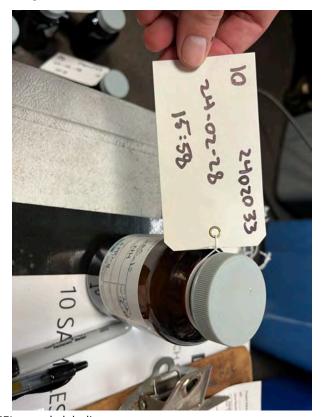
Intermediary transfer vessels (sterile, 2L HDPE) to aid transfer of 20L carboy samples to amber glass



Transfer of sample from carboy to intermediary transfer vessel



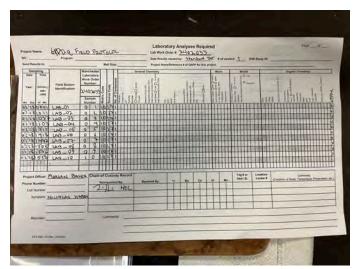
Transfer of sample from intermediary transfer vessel to amber glass bottle



MEL sample labeling



Staging for transferring all 24 hour hold samples



MEL COC





KCEL COC Notes

All 10 sampling sets were collected on 2024-02-28, between 09:30 and 16:30. A brief break was taken after sampling set #4 for was collected (~11:00) due to a lack of precipitation. Sampling resumed around 13:00 when precipitation intensity increased. Sampling resumed after this break until 16:00.

All samples were collected except for one, AUTO_OLD from sampling set #9 due to a sample collection error

Smaller bottles (non-20L carboy bottles) were kept in coolers with fresh ice.

All carboys were kept in the bed of a field vehicle, covered with multiple tarps, protecting samples from sunlight. Samples were kept on ice and stayed under temperature (<6 deg. C) until transferred.

All 24 hour hold samples (HDPE_OLD, HDPE_24, HDPE_20L_24, AUTO_OLD) were transferred into their associated 250-mL amber glass bottles on 2024-02-29, from 12:00 - 14:40. All carboys were agitated and transferred into an intermediate vessel (sterile, 2L HDPE), and finally transferred to the amber glass bottle. All other samples were transferred directly from original bottles to amber glass

Videos

None





CLIENT:	WA Dept of Ecology	
FIELD PERSONNEL:	Ti Clark Los	CATION: STTC, Portland OK
FLOW CONDITIONS:	God Start DA	TE: June 18, 3023 TIME: 1175
WEATHER:		·lls ~ '
BMP ID:)
	Influent 1	Effluent 1
Sample ID:	L8 564-1	
Sample Time:	1125 18-Jun-23	
QA Sample:		
Notes (below):		
	Influent 2	Effluent 2
Sample ID:	11 -2	
Sample Time:	1634 18-Jur-23	
QA Sample:		
Notes (below):		
Notes:		
tush	I center line for 5 m	ninne after opening
rolve		
		1
argu	then planned gap blun sto	m sumple
Lio Sci	RAS SHIMS COLL	



Project: 6PP	D-q Characterization and Protocol Dev.	Project No.	23-08026-000				
CLIENT:	WA Dept of Ecology						
FIELD PERSONNEL:	Clark	LOCATION:	Stormwater Treatment Technol	ogy			
FLOW CONDITIONS:		Date: 2	023-08-31 TIME: 09	15			
WEATHER:	Weather: Overcast, steady light to moderate rain, lower 60s F						
BMP ID: STTC-G	2						
	Influent 1	Effluen	t 1				
Sample ID:	P81565-1	NA					
Sample Time:	0925						
QA Sample:							
Notes (below):							
	Influent 2	Effluen	t 2				
Sample ID:	P81565-2	NA					
Sample Time:	1157						
QA Sample:							
Notes (below):							
Notes:							
Opened up centr	al main gravity at 815 and allowed to purge for or	ne hour before	collecting sample	_			
•	out was very dark grey as accumulated sediment	•	-				
to a more transp	arent grey. Small black-grey specks were evident i	n both collecte	d samples				
				_			
							



PROJECT:	6PPD-q Characterization and Protocol Dev.	ROJECT NO.: 23-08026-000
CLIENT:	WA Dept of Ecology	
FIELD PERSON	NNEL: SN LOC	TATION: STTC-TB1
FLOW CONDI		TE; 3/27/24 TIME:
WEATHER:	Rain 19400 - low 50 s F	
BMP ID:	STTL-TB1	
	Influent 1	Effluent 1
Sample ID:	P82960-1	P82960-2
Sample Tin	ne: 07:24	07:24
QA Sample		
Notes (belo	ow):	
	Influent 2	Effluent 2
Sample ID:	P82960-3	P82960-4
Sample Tin		08:42
QA Sample	: P82960-9 (DUPE)	
Notes (belo	ow):	
Notes:		
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Dope	collected at TROI-IN during	2" set-
	9	The second secon



PROJECT No.: 23-08026-000					
A STATE OF A PART OF THE PART					
LOCATION: STTC TB1					
FLOW CONDITIONS: Rising / Peak DATE: 3/25/24 TIME:					
Effluent 1					
P82959-2					
18:32					
NA					
Effluent 2 SD					
P82959-84					
19:36					
NA					
ing limb					
ak of Hydrograph					
11010					
pled forthis BMP at STTC					

Login: P82959 Project: 421520-200

Dept, Matrix, Prod 4 LG 6PPDQ (43)

(Cont ID)

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC: ______ LPM: Meghan Elkey

Project. 421320-20		F CUSTODY	7.00	
	Relinquished by	Date 51 3/29/24 @154()	Time (540)	
	Received by	Date 324-24	Time (54/)	
	Sample Numbers	1000		[Al
Sample Number QC Link	P82959-1	P82959-2		
Locator Short Loc Desc	STTC-TB1-IN	STTC-TB1-OUT		
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station		
Site Comments	I-5TAPE First grab	I-5TAPE First grab	1	
Start Date/Time	34/25/24@18:32	34/25/2401832	. —	
End Date/Time			1	
Time Span		, in the second second second		
Sample Depth		, a water through the first many		

4 LG 6PPDQ (43)

Login: P82959 Project: 421520-200

(Cont ID)

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC: LPM: Meghan Elkey

	CHAIN	OF CUSTODY	
	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number QC Link	P82959-3	P82959-4	Service Servic
Locator	STTC-TB1-IN	STTC-TB1-OUT	
Short Loc Desc	A THE CONTRACT OF THE PARTY OF	- Harrison	
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	
Site	I-5TAPE	I-5TAPE	-
Comments	Second grab	Second grab	
Start Date/Time	34/242401936	34125/24 Q 1936	
End Date/Time		0.1,0	
Time Span	See a succession and the see of the () I	Consideration and the second s	
Sample Depth	And the second s	a makanan sanan man a a man sa	
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P82960 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC: ____ LPM: Meghan Elkey

10,000. 421020 20		F CUSTODY	
		Date 3/28/24	Time 54t
	Received by	Date 3-28-24	Time / 54/
	Sample Numbers		[AII]
Sample Number QC Link	P82960-1	P82960-2	11
Locator	STTC-TB1-IN	STTC-TB1-OUT	-6
Short Loc Desc			
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	
Site	I-5TAPE	I-5TAPE	Ú.
Comments	First grab	First grab	j.
Start Date/Time	3/27/24 @ 0724	3/27/24@0724	
End Date/Time	and the second of the second o	A SA THE REAL PROPERTY OF THE PROPERTY OF THE	
T	(1)	4	

Time Span

Sample Depth

(Cont ID)

Dept, Matrix, Prod 4 LG 6PPDQ (43)

4 LG 6PPDQ (43)

Login: P82960 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC: LPM: Meghan Elkey

CHAIN OF CUSTODY

P82960-4

I-STAPE

STTC-TB1-OUT

sampling station

Ci	HAIN OF COSTODY	Two.			
Relinquished by	Date	Time			
Received by	Date	Time			
Sample Numbers	7-10-	[All			

Sample Number

QC Link

Locator

Short Loc Desc

Locator Desc

Site Comments station

STTC-TB1-IN

P82960-3

I-STAPE

STTC-TB1 upstream sampling

Second grab

3/27/24 @0842

Second grab 3/27/24@0842

STTC-TB1 downstream

End Date/Time

Start Date/Time

Time Span

Sample Depth

Dept, Matrix, Prod (Cont ID)

4 LG 6PPDQ (43)

4 LG 6PPDQ (43)

Login: P82960

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU T	rc:	
LPM:	Meghan Elkey	

Project: 421520-200

C	HAIN OF CUSTODY	
Relinquished by	Date	Time
Received by	Date	Time
Sample Numbers		[Al

Sample Number QC Link

P82960-9

Locator

FIELDDUP

Short Loc Desc Locator Desc

Site Comments FIELD DUPLICATE

FLDQC

Start Date/Time

End Date/Time

Time Span

Sample Depth

Dept, Matrix, Prod

4 LG 6PPDQ (43)

(Cont ID)

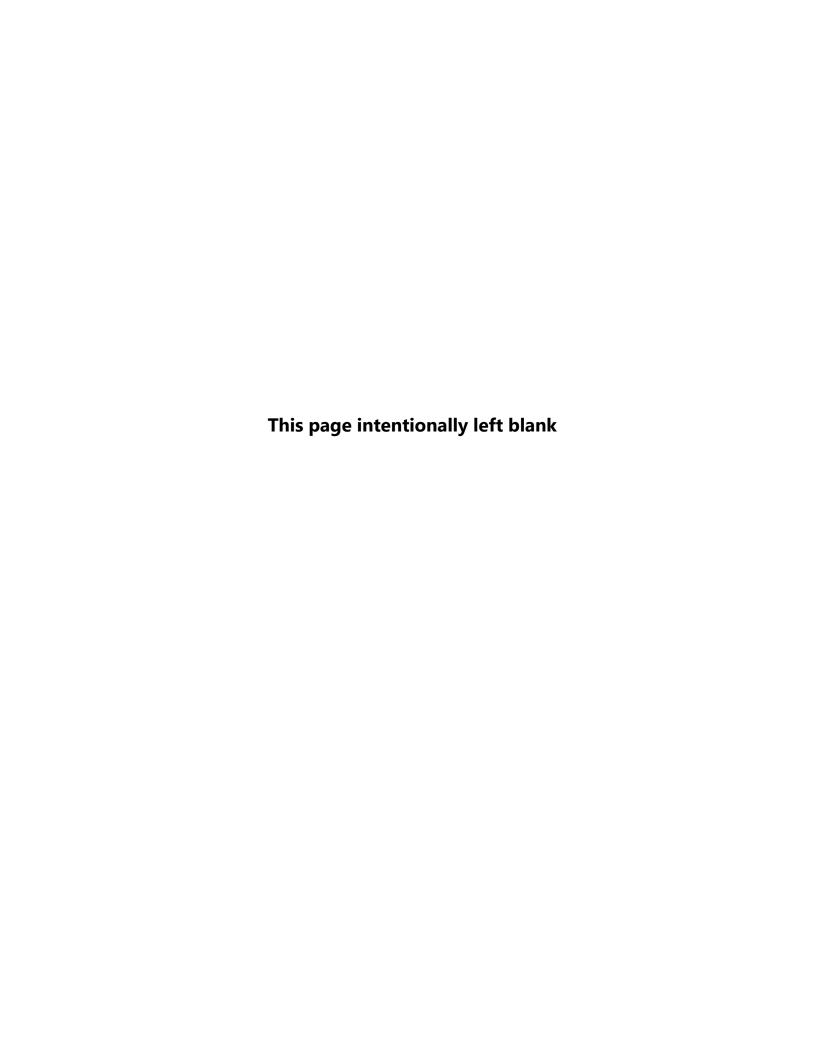


PROJECT:	6PPD-q Characterization and Protocol Dev	у. PROJECT No.: 23-08026-000
CLIENT:	WA Dept of Ecology	
FIELD PERSO	ONNEL: S. Nilson	LOCATION: STTC-TB4
FLOW COND	DITIONS: Falling	DATE: 4/25/24 TIME: 1400-190
WEATHER:	Light raid	
DMDID	STU TO1 SUOT	
BMP ID:		
Sample ID:	Influent 1 : P82 96-1	Effluent 1 P8296-3
Sample Tir	10.0	1752
QA Sample		
Notes (bel	ow):	
	Influent 2	Effluent 2
Sample ID:	: P82961-2	P8296-4
Sample Tir	me: 1645	1752
QA Sample	e:	
Notes (bel	ow):	
Notes:		
Flours	sthrough main I-84 F	sipe still high but entire test
expo	L co. 201 : = [11:00]	11-
- 3011	- Juney midling m	MD_{ℓ}
Light	train throughout eve	ent but minimal additional runoff

Appendix B

Laboratory Reports







Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: May 30, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, May 5, 2023

Stormwater samples were collected by Herrera Environmental Consultants on May 5, 2023. The samples were delivered to the King County Environmental Laboratory on the date of collection. The samples were given lab ID numbers L81563-3-6 and 9-13. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkry

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

King County Environmental Lab Analytical Report

0.352

Parameters

6ppd-quinone

AQ KCEL SOP 4077: 6PPDQ by LCMS

0.408

0.002

0.01

ug/L

Project: 421520-200 Project: 421520-200 Project: 421520-200 Locator: SCTF-TB25-IN Locator: SCTF-TB25-OUT Locator: SCTF-TB4-IN Descrip: SCTF-TB2.5 upstrea Descrip: SCTF-TB2.5 downstr Descrip: SCTF-TB4 upstream L81563-4 Sample: L81563-5 Sample: L81563-3 Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR ColDate: ColDate: 5/5/23 6:09 5/5/23 6:09 ColDate: 5/5/23 6:10 **WET Weight Basis** WET Weight Basis WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units

0.002

0.01

ug/L

0.359

0.002

0.01

ug/L

King County Environmental Lab Analytical Report

Project: 421520-200
Locator: SCTF-TB4-OUT
Descrip: SCTF-TB4 downstrea
Sample: L81563-6
Matrix: LG STORM WTR

ColDate: 5/5/23 6:10
WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea

Sample: L81563-9
Matrix: LG STORM WTR
ColDate: 5/5/23 8:48
WET Weight Basis

 Project:
 421520-200

 Locator:
 SCTF-TB25-OUT

 Descrip:
 SCTF-TB2.5 downstr

 Sample:
 L81563-10

Sample: L81563-10
Matrix: LG STORM WTR
ColDate: 5/5/23 8:48

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.281		0.002	0.01	ug/L	0.423		0.002	0.01	ug/L	0.351		0.002	0.01	ug/L

Project: Project: 421520-200 Project: 421520-200 421520-200 Locator: SCTF-TB4-IN Locator: SCTF-TB4-OUT Locator: SCTF-TB4-IN Descrip: SCTF-TB4 upstream Descrip: SCTF-TB4 downstrea Descrip: SCTF-TB4 upstream Sample: L81563-11 Sample: L81563-12 Sample: L81563-13 Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR ColDate: ColDate: 5/5/23 9:00 5/5/23 9:00 5/5/23 9:00 ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
AQ KCEL SOP 4077: 6PPDQ by LCMS															
6ppd-quinone	0.587		0.002	0.01	ug/L	0.253		0.002	0.01	ug/L	0.533		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB25-IN	421520-200	L81563-3	5/5/2023 6:09	0.408
SCTF-TB25-OUT	421520-200	L81563-4	5/5/2023 6:09	0.352
SCTF-TB4-IN	421520-200	L81563-5	5/5/2023 6:10	0.359
SCTF-TB4-OUT	421520-200	L81563-6	5/5/2023 6:10	0.281
SCTF-TB25-IN	421520-200	L81563-9	5/5/2023 8:48	0.423
SCTF-TB25-OUT	421520-200	L81563-10	5/5/2023 8:48	0.351
SCTF-TB4-IN	421520-200	L81563-11	5/5/2023 9:00	0.587
SCTF-TB4-OUT	421520-200	L81563-12	5/5/2023 9:00	0.253
SCTF-TB4-IN	421520-200	L81563-13	5/5/2023 9:00	0.533
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG187763 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81563-3	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	5/5/2023 6:09	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
		Research						6	
L81563-4	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	5/5/2023 6:09	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
101560.5	424522 200	Research	4.0.00000.1.0140	CTODA 4 14 (TD	5 /5 /0000 C 10	5 /0 /0000 C 00	5 /0 /0000 4 0 00	6	
L81563-5	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WIR	5/5/2023 6:10	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
L81563-6	421520-200	Research WDOE Stormwater BMP	A O E D D O J C MS	STODM W/TD	5/5/2023 6:10	5/9/2023 6:00	5/9/2023 10:00	6 WG187763-1,-2,-3,-4,-5,-	
L01303-0	421320-200	Research	AQOPPDQ-LCIVIS	310KW W IK	3/3/2023 0.10	3/9/2023 0.00	3/9/2023 10.00	wd16/705-1,-2,-3,-4,-3,-	
L81563-9	421520-200	WDOE Stormwater BMP	AO6PPDO-LCMS	STORM WTR	5/5/2023 8:48	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
		Research			5,5,2525	2,0,222000	5,5,2525	6	
L81563-10	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	5/5/2023 8:48	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
		Research						6	
L81563-11	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	5/5/2023 9:00	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
		Research						6	
L81563-12	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	5/5/2023 9:00	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
101562 12	424520 200	Research	4 OCDDDO 1 CN4C	CTODA MATE	F /F /2022 0:00	F /0 /2022 C-00	F /0 /2022 10:00	6	
L81563-13	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCIVIS	STORIVI WTR	5/5/2023 9:00	5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
WG187763-1	МВ	Nesearch	AQ6PPDQ-LCMS	OTHR WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
W 0107703 1	1415		AQUIT DQ LONIS	OTTIN WTI		3/3/2023 0.00	3/3/2023 10:00	6	
WG187763-2	SB		AQ6PPDQ-LCMS	OTHR WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	WG187763-1
								6	
WG187763-3	MS		AQ6PPDQ-LCMS	STORM WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	L81563-9
								6	
WG187763-4	MSD		AQ6PPDQ-LCMS	STORM WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	WG187763-3 L81563-9
W6407762 F			4000000 10440	CTODA A VA/TD		F /0 /2022 C 00	F /0 /2022 40 00	6	104562.40
WG187763-5	LD		AQ6PPDQ-LCMS	STORM WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	L81563-10
WG187763-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		5/9/2023 6:00	5/9/2023 10:00	WG187763-1,-2,-3,-4,-5,-	
			A COLL DO LONG	O IIIII W III		3, 3, 2023 0.00	3, 3, 2023 10.00	6	
								-	

King County Environmental Laboratory QC Report

Workgroup: WG187763 6PPDQ by LCMS

MB:WG187763-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG187763-2 MB:WG187763-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.212 106 50--150

MSD:WG187763-4 MS:WG187763-3 L81563-9 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.423 0.657 117 50--150 0.651 114 1 0--45 6ppd-quinone

LD:WG187763-5 L81563-10 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.3510.33740--40

CCC:WG187763-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L11.0410480--120

Login: P81563 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On TAPE - Event 1

FSU TC: LPM: Meghan Elkey

•	CHAIN O	F CUSTODY	PACE.
:	Relinquished by Nicholas Harris	Date 5/5/2023	Time 1120
	Regelvel/By	Date 5-5-23	Time 1120
	Sample Numbers		[All]
Sample Number	P81563-1	P81563-2	P81563-3
QC Link Locator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-TB25-IN
Short Loc Desc	The state of the s		
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF-TB2.5 upstream sampling station
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	First grab	First grab	First grab
Start Date/Time			2013-05-06-06:09
End Date/Time			2013-05-05 06:09
Time Span			
Sample Depth	доман до от выполнения се и городова на населения доман до от доман до от доман доман до от достой доман до от до		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81563 Project: 421520-200	WDOE BMP - Herrera 6PPDC	Q Add-On TAPE - Event 1	FSU TC: LPM: Meghan Elkey
Sample Number	P81563-4	P81563-5	P81563-6
QC Link Locator	SCTF-TB25-OUT	SCTF-TB4-IN	SCTF-TB4-OUT
Short Loc Desc	The second secon	ADMINISTRAÇÃO CONTRACTOR DE CO	
Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	First grab	First grab	First grab
Start Date/Time	2023-05-05 06:09	2923-05-05 06:10	2023-05-05 06:10
End Date/Time	2023-05-05 06:09	2023-05-05 06:10	2023-05-05 06:10
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81563 Project: 421520-200	WDOE BMP - Herrera 6PPD	Q Add-On TAPE - Event 1	FSU TC: LPM: Meghan Elkey					
Sample Number	P81563-7	P81563-8	P81563-9					
QC Link	LICE COLLEGE AND ARREST SECTION AND ARREST AND ARREST ARREST COLLEGE AND ARREST		ACCURATE THE PROPERTY OF A CONTROL OF THE PROPERTY OF THE PROP					
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-TB25-IN					
Short Loc Desc			History (NO) AND HISTORY (NO) TO THE HISTORY (NO) AND THE THE TOTAL AND					
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF-TB2.5 upstream sampling station					
Site	I-5TAPE	I-5TAPE	I-5TAPE					
Comments	Second grab	Second grab	Second grab					
Start Date/Time			2023-05-05 08:48					
End Date/Time			2013-05-05 08x48					
Time Span								
Sample Depth								
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)					

Login: P81563 Project: 421520-200	WDOE BMP - Herrera 6PPD0	Q Add-On TAPE - Event 1	FSU TC: LPM: Meghan Elkey					
Sample Number	P81563-10	P81563-11	P81563-12					
QC Link	The state of the s	Control of the Contro	AN THE THEORY OF A STREET AND ADDRESS OF A STREET AND					
Locator	SCTF-TB25-OUT	SCTF-TB4-IN	SCTF-TB4-OUT					
Short Loc Desc		and the second s	COTE TO A Leave to a second					
Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location					
Site	I-5TAPE	I-5TAPE	I-5TAPE					
Comments	Second grab	Second grab	Second grab					
Start Date/Time	2023-05-05 08:48	2023-05-05 09:00	2023-05-05 09:00					
End Date/Time	2023-05-05 09:40	2023-05-05 09:00	2023-05-05 09:00					
Time Span								
Sample Depth								
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)					

Login: P81563	WDOE BMP - Herrera 6PPDG	FSU TC:					
Project: 421520-200		STATE OF THE STATE	LPM: Meghan Elkey				
Sample Number	P81563-13						
QC Link	CONTROL CONTRO						
Locator	FIELDDUP						
Short Loc Desc	of an oracle of the state of th	THE CONTROL OF THE CO					
Locator Desc	FIELD DUPLICATE						
Site	FLDQC	COLUMN TO THE STATE OF THE STAT					
Comments	TB4-IN						
Start Date/Time	2023-05-05 09:00						
End Date/Time	2023-05-05 99:00						
Time Span							
Sample Depth							
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)						

FSU TC:

3-6,9-3 LIQUID SAMPLE RECEIPT RECORD

Project No.: 42/520-200 Sub-Contracting: Y/(N)

Login Number(s): 8 1563 (7)	Project No.: 4	21520	2-20	9 <i>0</i>	Sub-Contracting: Y (N)	List Product(s);		
Collect Date(s): 5 5 3	Receive Date:	5-5	-2:	3	Changes: Y	List Parameter(s):		
SAMPLE RECEIP	CONDITIONS			100		HECKLIST (Circle and/or chec		
CONDITION Acceptable? Comment ID	CONDITION	Acce	ptable?	Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	
Labels / Fieldsheets / Y / N	Volumes	· / Y	/ N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	Corrective Action
Container Y / N	Holding Times	/ Y	/ N		CN / pH > 12 w/ NaOH within 15 min		Y / N	□ Notify ORG
Temperature (w/ ice) Y / N / NA	Delivery Location		/ N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N / NA	☐ Deliver to CONV
BOTTLE COUNT (#) AND DESCRI	TION and SAMPL	ENUMBERS	3		CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 W/ NaOH w/in 15 min	☐ Check_pH √field sheet for pH		Preserve by SM
# Bottle Description					ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	· · · · · · · · · · · · · · · · · · ·	Y / N Y / N	Deliver to CONV
40 mL clear vial (VOA):					O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check pH Check documentation	Y / N	Preserve By SM
60 mL clear glass (PHYTO):					PHYTOPLANKTON / Lugais	Visually inspect	Y / N	Preserve by SM
60 mL CWM HDPE:					TKN / COD pH < 2 w/ H₂SO₄ within 15 min	☐ Check pH	Y / N	Deliver to MICRO
125 mL AWM HDPE:					TGC / pH < 2 w/ HCi (NPDES only)	☐ Check pH	Y / N	Preserve By SM
125 mL CNM HDPE:					TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	Preserve By SM
125 mL CWM HDPE:					WDO / FIXED	Visually inspect	Y / N	☐ Deliver to CONV
125 mL GANM:					Other:		1 / N	☐ Deliver to CONV
125 mL GANM w/HCI					ROUTINESM PRESERVATION	NGHEOKUE (Chrelevandor e)	realization allocable	1212-12
250 mt, AWM HDPE:					PRODUCT / Preservation	SM Action	Acceptable?	
250 mL CWM HDPE:					Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	Corrective Action
250 mL CWM HDPE (MICRO):				-	HG-CVAA-L-Teflon (T/D)/pH < 2 w/ULTRA HCI	Preserve & deliver	NA NA	☐ Adjust pH NA
9 250 mL GAWM: 3-3 3-6 9-13					ICPMS / HG-CVAA-M (T/D)/pH < 2 w/ ULTRA HNO3	Preserve & deliver	NA NA	NA NA
250 mL GAWM w/ H2SO4:				· · · · · · · · · · · · · · · · · · ·	TOC / pH < 2 w/ HCl		· ····	NA .
300 mL WDO (8 hour HT);		·			Other:	☐ Preserve & deliver	NA	NA .
500 mL AWM HDPE:	_				Other;			
500 mL, CWM HDPE;					INTERESPENSE TO	ST (Sirele andlor check applic	able celestings	T.
500 mL CWM PP (MICRO):					Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
500 mL HDPE (METALS):					BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	
500 mt. HDPE, double-bagged (METALS):					GN / Chlorine (Check documentation)	Y / N / not tested	Y / N	Deliver to ORG
500 mL Teflon (Hg):					CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y/N	Deliver to CONV
500 mt Teflon, double-bagged (METALS):					VOA / Chtorine (Check documentaion)	Y / N / not tested	Y / N	☐ Deliver to CONV
500 mL GANM / GAWM:					Other:		1 / 13	☐ Deliver to ORG
500 mL Polystyrene Filtration Units (METALS):						HEADSPACE CHECK		
1L AWM HDPE:					PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
1L CWM HDPE:					MICRO (Visually inspect)	Headspace (@ 1")	Y / N	□ Notify MICRO
1L CWM PP (MICRO):					TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y / N	□ Notify MICRO □ Notify CONV
1L GANM:					VOA (Visually inspect)	Zero headspace	Y / N	
1L GCWM:					WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG ☐ Notify CONV
1L GAWM w/ H₂SO₄:					Other;			CO NOTIFY CONV
2L CWM HDPE:					FIELD FILTRATION CHE	CKUST Gircle and/or check a	ralicable salect	(286)
Other:					Product (SM Action)	Field Filtered	Field Blank	Corrective Action
COMMENTS/NO	IFICATIONS				ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV
					NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	☐ Deliver to CONV
					Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to METALS
					DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA	☐ Deliver to CONV
					DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to CONV
					Other,			
			···		Other			I

CC: 🗆 AQUATOX, 🗆 CONV, 🗀 METALS,	□ MICRO.	. 🗆 ORG	. D
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NOTES

1. Deliver dissolved Hg-CVAF samples to METALS for filtration.

Deliver double bagged metals samples to METALS for preservation.
 Dignot less to the preserved BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

MAY 05 '23 11:30



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: July 18, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, June 18, 2023

Stormwater samples were collected by Herrera Environmental Consultants on June 18, 2023. The samples were delivered to the King County Environmental Laboratory on June 20, 2023. The samples were given lab ID numbers L81690-1 to -84. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification with the following exception:

The d5-6PPDQ surrogate associated with sample WG188627-3 (L81690-66 MS) exceeded QC acceptance criteria. The surrogate result for sample WG188627-3 is qualified with an asterisk ("*") on the Lab QC Report to indicate QC criteria were not met.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Elkry

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 CONT Control Sample L81690-1 LG STORM WTF 6/18/23 15:10 tt Basis	R			Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 CONT Control Sample L81690-2 LG STORM WTR 6/18/23 15:32 t Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 CONT Control Sample L81690-3 LG STORM WT 6/18/23 16:02 t Basis	R		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.067	8	0.002	0.01	ug/L	0.07	1	0.002	0.01	ug/L	0.855	5	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-4 LG STORM WTI 6/18/23 16:19	₹			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-5 LG STORM WTR 6/18/23 16:48				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-6 LG STORM WT 6/18/23 17:05			
.	WET Weigh		MBI		11.24	WET Weigh					WET Weigh				11.26
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.7	6	0.002	0.01	ug/L	0.54	7	0.002	0.01	ug/L	0.486	6	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-7 LG STORM WTF 6/18/23 18:35	₹			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-8 LG STORM WTR 6/18/23 18:53				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 CONT Control Sample L81690-9 LG STORM W 6/18/23 19:09			
	WET Weigh					WET Weigh					WET Weigh				
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.3	7	0.002	0.01	ug/L	0.34	8	0.002	0.01	ug/L	0.30	6	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigl	421520-200 CONT Control Sample L81690-10 LG STORM WT 6/18/23 19:27 nt Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 PTFE_TUB PTFE tubing L81690-11 LG STORM WTR 6/18/23 15:10 t Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 PTFE_TUB PTFE tubing L81690-12 LG STORM W 6/18/23 15:32 Basis	TR		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	ie Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.34	.1	0.002	0.01	ug/L	0.0667	7	0.002	0.01	ug/L	0.0596	i	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 PTFE_TUB PTFE tubing L81690-13 LG STORM WTF 6/18/23 16:02	R			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 PTFE_TUB PTFE tubing L81690-14 LG STORM WTR 6/18/23 16:19				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 PTFE_TUB PTFE tubing L81690-15 LG STORM WT 6/18/23 16:48	R		
	WET Weigh	t Basis				WET Weigh	t Basis				WET Weight	Basis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.80	7	0.002	0.01	ug/L	0.753	3	0.002	0.01	ug/L	0.554	ļ	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 PTFE_TUB PTFE tubing L81690-16 LG STORM WT 6/18/23 17:05 nt Basis	-R			Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 PTFE_TUB PTFE tubing L81690-17 LG STORM WTR 6/18/23 18:35 t Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 PTFE_TUB PTFE tubing L81690-18 LG STORM WT 6/18/23 18:53	·R		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	ie Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.50	4	0.002	0.01	ug/L	0.36	1	0.002	0.01	ug/L	0.344	1	0.002	0.01	ug/L
ES NONE										Ĭ					
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 PTFE_TUB PTFE tubing L81690-19 LG STORM W' 6/18/23 19:09 ht Basis	ΓR			Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 PTFE_TUB PTFE tubing L81690-20 LG STORM WTR 6/18/23 19:27 tt Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 SILI_TUB Silicone tubing L81690-21 LG STORM WTI 6/18/23 15:10	२		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.34	2	0.002	0.01	ug/L	0.32	5	0.002	0.01	ug/L	0.0645	j	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-22 LG STORM WTF 6/18/23 15:32	₹			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-23 LG STORM WTR 6/18/23 16:02				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-24 LG STORM WT 6/18/23 16:19	R		
	WET Weigh	t Basis				WET Weigh	t Basis				WET Weigh	t Basis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.068	8	0.002	0.01	ug/L	0.83	2	0.002	0.01	ug/L	0.725	5	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-25 LG STORM WTR 6/18/23 16:48	:			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-26 LG STORM WTR 6/18/23 17:05				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 SILI_TUB Silicone tubing L81690-27 LG STORM WT 6/18/23 18:35	R		
	WET Weigh	t Basis				WET Weigh	t Basis				WET Weight	Basis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.55	4	0.002	0.01	ug/L	0.508	3	0.002	0.01	ug/L	0.365	i	0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 SILI_TUB Silicone tubing L81690-28 LG STORM WTR 6/18/23 18:53 t Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 SILI_TUB Silicone tubing L81690-29 LG STORM WTR 6/18/23 19:09 t Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 SILI_TUB Silicone tubing L81690-30 LG STORM WT 6/18/23 19:27 t Basis	⁻ R		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.33	9	0.002	0.01	ug/L	0.33	7	0.002	0.01	ug/L	0.322	2	0.002	0.01	ug/L
ES NONE															
Sample Information															

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_FT HDPE_FT Locator: HDPE_FT Locator: Locator: Descrip: HDPE bottle sample Descrip: HDPE bottle sample Descrip: HDPE bottle sample L81690-31 L81690-32 Sample: L81690-33 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR ColDate: ColDate: 6/18/23 15:10 6/18/23 15:32 ColDate: 6/18/23 16:02 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.064 0.002 0.01 0.0623 0.002 0.01 0.806 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_FT HDPE_FT Locator: HDPE_FT Locator: Locator: HDPE bottle sample Descrip: HDPE bottle sample Descrip: Descrip: HDPE bottle sample L81690-34 L81690-35 Sample: L81690-36 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR ColDate: ColDate: ColDate: 6/18/23 16:19 6/18/23 16:48 6/18/23 17:05 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.732 0.002 0.01 0.544 0.002 0.01 0.481 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_FT HDPE_FT HDPE_FT Locator: Locator: Locator: Descrip: HDPE bottle sample Descrip: HDPE bottle sample Descrip: HDPE bottle sample L81690-37 L81690-38 Sample: L81690-39 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 19:09 ColDate: ColDate: 6/18/23 18:35 6/18/23 18:53 ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.336 0.002 0.01 0.338 0.002 0.01 0.331 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_24 HDPE_24 Locator: HDPE_FT Locator: Locator: HDPE carboy sample Descrip: HDPE bottle sample Descrip: Descrip: HDPE carboy sample L81690-40 L81690-41 Sample: L81690-42 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 15:10 6/18/23 15:32 ColDate: ColDate: ColDate: 6/18/23 19:27 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.324 0.002 0.01 0.0634 0.002 0.01 0.063 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_24 HDPE_24 HDPE_24 Locator: Locator: Locator: HDPE carboy sample Descrip: HDPE carboy sample Descrip: Descrip: HDPE carboy sample L81690-43 L81690-44 Sample: L81690-45 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 16:19 6/18/23 16:48 6/18/23 16:02 ColDate: ColDate: ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.789 0.002 0.01 0.701 0.002 0.01 0.529 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 HDPE_24 HDPE_24 HDPE_24 Locator: Locator: Locator: HDPE carboy sample Descrip: HDPE carboy sample Descrip: Descrip: HDPE carboy sample L81690-46 L81690-47 Sample: L81690-48 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 18:53 6/18/23 17:05 ColDate: 6/18/23 18:35 ColDate: ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.49 0.002 0.01 0.366 0.002 0.01 0.339 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 HDPE_24 HDPE_24 Locator: Locator: Locator: FLPE_FT HDPE carboy sample Descrip: HDPE carboy sample Descrip: Descrip: FLPE bottle sample L81690-49 L81690-50 Sample: L81690-51 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 19:27 6/18/23 19:09 ColDate: ColDate: 6/18/23 15:10 ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.349 0.002 0.01 0.33 0.002 0.01 0.0537 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_FT Locator: FLPE_FT Locator: Locator: FLPE_FT FLPE bottle sample FLPE bottle sample Descrip: Descrip: Descrip: FLPE bottle sample L81690-52 L81690-53 Sample: L81690-54 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 16:19 6/18/23 15:32 ColDate: ColDate: ColDate: 6/18/23 16:02 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.0524 0.002 0.01 0.833 0.002 0.01 0.735 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_FT Locator: FLPE_FT Locator: Locator: FLPE_FT FLPE bottle sample FLPE bottle sample Descrip: Descrip: Descrip: FLPE bottle sample L81690-55 L81690-56 Sample: L81690-57 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 18:35 6/18/23 16:48 ColDate: ColDate: ColDate: 6/18/23 17:05 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.526 0.002 0.01 0.456 0.002 0.01 0.335 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_FT Locator: FLPE_FT Locator: Locator: FLPE_FT FLPE bottle sample FLPE bottle sample Descrip: Descrip: Descrip: FLPE bottle sample L81690-58 L81690-59 Sample: L81690-60 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 19:27 6/18/23 18:53 ColDate: ColDate: ColDate: 6/18/23 19:09 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.322 0.002 0.01 0.347 0.002 0.01 0.31 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_24 Locator: FLPE_24 Locator: Locator: FLPE_24 FLPE carboy sample FLPE carboy sample Descrip: Descrip: Descrip: FLPE carboy sample L81690-61 L81690-62 Sample: L81690-63 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 15:32 6/18/23 15:10 ColDate: ColDate: 6/18/23 16:02 ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.0515 0.002 0.01 0.0525 0.002 0.01 0.794 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_24 Locator: FLPE_24 Locator: Locator: FLPE_24 FLPE carboy sample FLPE carboy sample Descrip: Descrip: Descrip: FLPE carboy sample L81690-64 L81690-65 Sample: L81690-66 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 16:48 6/18/23 17:05 6/18/23 16:19 ColDate: ColDate: ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.699 0.002 0.01 0.482 0.002 0.01 0.445 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

421520-200 Project: 421520-200 Project: Project: 421520-200 FLPE_24 FLPE_24 Locator: FLPE_24 Locator: Locator: FLPE carboy sample FLPE carboy sample Descrip: Descrip: Descrip: FLPE carboy sample L81690-67 L81690-68 Sample: L81690-69 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 18:53 6/18/23 19:09 6/18/23 18:35 ColDate: ColDate: ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.338 0.002 0.01 0.325 0.002 0.01 0.327 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

Project: 421520-200 Project: 421520-200 Project: 421520-200 Locator: FLPE_24 Locator: FIELDDUP Locator: FIELDDUP FLPE carboy sample FIELD DUPLICATE Descrip: Descrip: FIELD DUPLICATE Descrip: L81690-70 L81690-71 Sample: L81690-72 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 6/18/23 19:27 ColDate: ColDate: 6/18/23 15:10 ColDate: 6/18/23 15:32 **WET Weight Basis** WET Weight Basis WET Weight Basis **Parameters** Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.31 0.002 0.01 0.0711 0.002 0.01 0.0703 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L ES NONE Sample Information

	Project:	421520-200				Project:	421520-200				Project:	421520-200			
	Locator:	FIELDDUP				Locator:	FIELDDUP				Locator:	FIELDDUP			
	Descrip:	FIELD DUPLICA	TE			Descrip:	FIELD DUPLICAT	TE			Descrip:	FIELD DUPL	ICATE		
	Sample:	L81690-73				Sample:	L81690-74				Sample:	L81690-75			
	Matrix:	LG STORM WT	₹			Matrix:	LG STORM WTF	3			Matrix:	LG STORM \	NTR		
	ColDate:	6/18/23 16:02				ColDate:	6/18/23 16:19				ColDate:	6/18/23 16:48	3		
	WET Weight	Basis				WET Weigh	t Basis				WET Weigh	t Basis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone	0.855		0.002	0.01	ug/L	0.77	5	0.002	0.01	ug/L	0.539	9	0.002	0.01	ug/L
ES NONE										Ŭ					ŭ
Sample Information															

King County Environmental Lab Analytical Report

	Locator:	121520-200 FIELDDUP FIELD DUPLIC	ATE			Project: Locator: Descrip:	421520-200 FIELDDUP FIELD DUPLICA	тс			Project: Locator: Descrip:	421520-200 FIELDDUP FIELD DUPL	ICATE		
	Sample: Matrix:	L81690-76 LG STORM W 6/18/23 17:05				Sample: Matrix: ColDate: WET Weigh	L81690-77 LG STORM WTI 6/18/23 18:35				Sample: Matrix: ColDate: WET Weight	L81690-78 LG STORM V 6/18/23 18:53	VTR		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
6ppd-quinone ES NONE	0.486		0.002	0.01	ug/L	0.37	7	0.002	0.01	ug/L	0.358	3	0.002	0.01	ug/L
Sample Information															

King County Environmental Lab Analytical Report

	Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 FIELDDUP FIELD DUPLIC L81690-79 LG STORM W 6/18/23 19:09				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 FIELDDUP FIELD DUPLICA L81690-80 LG STORM WTF 6/18/23 19:27				Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 EQUIPBLANK EQUIPMENT L81690-81 LN BLANK W 6/18/23 13:50	BLANK TR		
	WET Weigh	t Basis				WET Weigh	t Basis				WET Weight	Basis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.35	5	0.002	0.01	ug/L	0.339	9	0.002	0.01	ug/L		<mdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td></mdl<>	0.002	0.01	ug/L
ES NONE															
Sample Information											Rinsate Blank - Teflon Pre				none

King County Environmental Lab Analytical Report

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 EQUIPBLANK EQUIPMENT E L81690-82 LN BLANK WT 6/18/23 13:50 It Basis				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 EQUIPBLANK EQUIPMENT I L81690-83 LN BLANK WT 6/18/23 19:35 It Basis	BLANK			Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 EQUIPBLANK EQUIPMENT I L81690-84 LN BLANK WT 6/18/23 19:35 Basis	BLANK		Units
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Valu	e Qual	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone ES NONE		<mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th><th></th><th><mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th><th></th><th><mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th></mdl<></th></mdl<></th></mdl<>	0.002	0.01	ug/L		<mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th><th></th><th><mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th></mdl<></th></mdl<>	0.002	0.01	ug/L		<mdl< th=""><th>0.002</th><th>0.01</th><th>ug/L</th></mdl<>	0.002	0.01	ug/L
Sample Information	Rinsate Blank - Silicon Pre					Rinsate Blank - Teflon Post					Rinsate Blank - Silicon Post				none

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

				6ppd-quinone	Sample Information
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L	none
CONT	421520-200	L81690-1	6/18/2023 15:10	0.0678	
CONT	421520-200	L81690-2	6/18/2023 15:32	0.071	
CONT	421520-200	L81690-3	6/18/2023 16:02	0.855	
CONT	421520-200	L81690-4	6/18/2023 16:19	0.76	
CONT	421520-200	L81690-5	6/18/2023 16:48	0.547	
CONT	421520-200	L81690-6	6/18/2023 17:05	0.486	
CONT	421520-200	L81690-7	6/18/2023 18:35	0.37	
CONT	421520-200	L81690-8	6/18/2023 18:53	0.348	
CONT	421520-200	L81690-9	6/18/2023 19:09	0.36	
CONT	421520-200	L81690-10	6/18/2023 19:27	0.341	
PTFE_TUB	421520-200	L81690-11	6/18/2023 15:10	0.0667	
PTFE_TUB	421520-200	L81690-12	6/18/2023 15:32	0.0596	
PTFE_TUB	421520-200	L81690-13	6/18/2023 16:02	0.807	
PTFE_TUB	421520-200	L81690-14	6/18/2023 16:19	0.753	
PTFE_TUB	421520-200	L81690-15	6/18/2023 16:48	0.554	
PTFE_TUB	421520-200	L81690-16	6/18/2023 17:05	0.504	
PTFE_TUB	421520-200	L81690-17	6/18/2023 18:35	0.361	
PTFE_TUB	421520-200	L81690-18	6/18/2023 18:53	0.344	
PTFE_TUB	421520-200	L81690-19	6/18/2023 19:09	0.342	
PTFE_TUB	421520-200	L81690-20	6/18/2023 19:27	0.325	
SILI_TUB	421520-200	L81690-21	6/18/2023 15:10	0.0645	
SILI_TUB	421520-200	L81690-22	6/18/2023 15:32	0.0688	
SILI_TUB	421520-200	L81690-23	6/18/2023 16:02	0.832	
SILI_TUB	421520-200	L81690-24	6/18/2023 16:19	0.725	
SILI_TUB	421520-200	L81690-25	6/18/2023 16:48	0.554	
SILI_TUB	421520-200	L81690-26	6/18/2023 17:05	0.508	
SILI_TUB	421520-200	L81690-27	6/18/2023 18:35	0.365	
SILI_TUB	421520-200	L81690-28	6/18/2023 18:53	0.339	
SILI_TUB	421520-200	L81690-29	6/18/2023 19:09	0.337	
SILI_TUB	421520-200	L81690-30	6/18/2023 19:27	0.322	
HDPE_FT	421520-200	L81690-31	6/18/2023 15:10	0.064	
HDPE_FT	421520-200	L81690-32	6/18/2023 15:32	0.0623	
HDPE_FT	421520-200	L81690-33	6/18/2023 16:02	0.806	

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

				6ppd-quinone	Sample Information
HDPE_FT	421520-200	L81690-34	6/18/2023 16:19	0.732	
HDPE_FT	421520-200	L81690-35	6/18/2023 16:48	0.544	
HDPE_FT	421520-200	L81690-36	6/18/2023 17:05	0.481	
HDPE_FT	421520-200	L81690-37	6/18/2023 18:35	0.336	
HDPE_FT	421520-200	L81690-38	6/18/2023 18:53	0.338	
HDPE_FT	421520-200	L81690-39	6/18/2023 19:09	0.331	
HDPE_FT	421520-200	L81690-40	6/18/2023 19:27	0.324	
HDPE_24	421520-200	L81690-41	6/18/2023 15:10	0.0634	
HDPE_24	421520-200	L81690-42	6/18/2023 15:32	0.063	
HDPE_24	421520-200	L81690-43	6/18/2023 16:02	0.789	
HDPE_24	421520-200	L81690-44	6/18/2023 16:19	0.701	
HDPE_24	421520-200	L81690-45	6/18/2023 16:48	0.529	
HDPE_24	421520-200	L81690-46	6/18/2023 17:05	0.49	
HDPE_24	421520-200	L81690-47	6/18/2023 18:35	0.366	
HDPE_24	421520-200	L81690-48	6/18/2023 18:53	0.339	
HDPE_24	421520-200	L81690-49	6/18/2023 19:09	0.349	
HDPE_24	421520-200	L81690-50	6/18/2023 19:27	0.33	
FLPE_FT	421520-200	L81690-51	6/18/2023 15:10	0.0537	
FLPE_FT	421520-200	L81690-52	6/18/2023 15:32	0.0524	
FLPE_FT	421520-200	L81690-53	6/18/2023 16:02	0.833	
FLPE_FT	421520-200	L81690-54	6/18/2023 16:19	0.735	
FLPE_FT	421520-200	L81690-55	6/18/2023 16:48	0.526	
FLPE_FT	421520-200	L81690-56	6/18/2023 17:05	0.456	
FLPE_FT	421520-200	L81690-57	6/18/2023 18:35	0.335	
FLPE_FT	421520-200	L81690-58	6/18/2023 18:53	0.322	
FLPE_FT	421520-200	L81690-59	6/18/2023 19:09	0.347	
FLPE_FT	421520-200	L81690-60	6/18/2023 19:27	0.31	
FLPE_24	421520-200	L81690-61	6/18/2023 15:10	0.0515	
FLPE_24	421520-200	L81690-62	6/18/2023 15:32	0.0525	
FLPE_24	421520-200	L81690-63	6/18/2023 16:02	0.794	
FLPE_24	421520-200	L81690-64	6/18/2023 16:19	0.699	
FLPE_24	421520-200	L81690-65	6/18/2023 16:48	0.482	
FLPE_24	421520-200	L81690-66	6/18/2023 17:05	0.445	
FLPE_24	421520-200	L81690-67	6/18/2023 18:35	0.338	

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

				6ppd-quinone	Sample Information
FLPE_24	421520-200	L81690-68	6/18/2023 18:53	0.325	
FLPE_24	421520-200	L81690-69	6/18/2023 19:09	0.327	
FLPE_24	421520-200	L81690-70	6/18/2023 19:27	0.31	
FIELDDUP	421520-200	L81690-71	6/18/2023 15:10	0.0711	
FIELDDUP	421520-200	L81690-72	6/18/2023 15:32	0.0703	
FIELDDUP	421520-200	L81690-73	6/18/2023 16:02	0.855	
FIELDDUP	421520-200	L81690-74	6/18/2023 16:19	0.775	
FIELDDUP	421520-200	L81690-75	6/18/2023 16:48	0.539	
FIELDDUP	421520-200	L81690-76	6/18/2023 17:05	0.486	
FIELDDUP	421520-200	L81690-77	6/18/2023 18:35	0.37	
FIELDDUP	421520-200	L81690-78	6/18/2023 18:53	0.358	
FIELDDUP	421520-200	L81690-79	6/18/2023 19:09	0.355	
FIELDDUP	421520-200	L81690-80	6/18/2023 19:27	0.339	
EQUIPBLANK	421520-200	L81690-81	6/18/2023 13:50		
EQUIPBLANK	421520-200	L81690-82	6/18/2023 13:50		
EQUIPBLANK	421520-200	L81690-83	6/18/2023 19:35		
EQUIPBLANK	421520-200	L81690-84	6/18/2023 19:35		
* Not converted to dry weight basis					

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

WG188625 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association Comments
L81690-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,- 6
L81690-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-11	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-12	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-21	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-22	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-31	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-32	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-41	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-42	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-51	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-52	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-61	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-62	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-71	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:10	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-72	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 15:32	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-81	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	6/18/2023 13:50	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-82	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	6/18/2023 13:50	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-83	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	BLANK WTR	6/18/2023 19:35	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
L81690-84	421520-200	Research WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	6/18/2023 19:35	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-
WG188625-1	MB	Nescai eti	AQ6PPDQ-LCMS	OTHR WTR		6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-

WDOE BMP Stormwater Herrera, L81690, June 18, 2023

WG188625-2	SB	AQ6PPDQ-LCMS	OTHR WTR	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,- WG188625-1
WG188625-3	MS	AQ6PPDQ-LCMS	OTHR WTR	6/21/2023 12:30	6/22/2023 7:30	6 WG188625-1,-2,-3,-4,-5,- L81690-84 6
WG188625-4	MSD	AQ6PPDQ-LCMS	OTHR WTR	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,- WG188625-3 L81690-84
WG188625-5	LD	AQ6PPDQ-LCMS	STORM WTR	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,- L81690-1
WG188625-6	ссс	AQ6PPDQ-LCMS	OTHR WTR	6/21/2023 12:30	6/22/2023 7:30	WG188625-1,-2,-3,-4,-5,-

WG188626 6PPDQ by LCMS

Sample L81690-3	Project 421520-200	Project Description WDOE Stormwater BMP Research	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 6/18/2023 16:02	Prep Date 6/22/2023 10:30	Anal Date 6/23/2023 9:00	QC Association WG188626-1,-2,-3,-4,-5,-	Comments
L81690-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-	
L81690-13	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-14	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-23	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-24	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-33	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-34	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-43	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-44	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-53	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-54	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-63	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-64	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-6	
L81690-73	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:02	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-	

L81690-74	421520-200		AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:19	6/22/2023 10:30	6/23/2023 9:00	WG188626-1,-2,-3,-4,-5,-
WG188626-1	МВ	Research	AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,-
WG188626-2	SB		AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,- WG188626-1
WG188626-3	MS		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,- L81690-53
WG188626-4	MSD		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,- WG188626-3 L81690-53
WG188626-5	LD		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,- L81690-3
WG188626-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 10:30	6/23/2023 9:00	6 WG188626-1,-2,-3,-4,-5,-
							, ,	6

WG188627 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81690-5	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-6	
L81690-6	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-15	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-16	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-25	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-26	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-35	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-36	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-45	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-46	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-55	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-56	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	
L81690-65	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-	

L81690-66	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-
L81690-75	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:48	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-
L81690-76	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 17:05	6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-
WG188627-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-
WG188627-2	SB		AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,- WG188627-1
WG188627-3	MS		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,- L81690-66
WG188627-4	MSD		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,- WG188627-3 L81690-66
WG188627-5	LD		AQ6PPDQ-LCMS	STORM WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,- L81690-76
WG188627-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		6/22/2023 17:00	6/23/2023 14:00	WG188627-1,-2,-3,-4,-5,-

WG188628 6PPDQ by LCMS

Sample L81690-7	Project 421520-200	Project Description WDOE Stormwater BMP Research	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 6/18/2023 18:35	Prep Date 6/23/2023 8:00	Anal Date 6/24/2023 8:30	QC Association Comments WG188628-1,-2,-3,-4,-5,-
L81690-8	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-17	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-18	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-27	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-28	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6
L81690-37	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6
L81690-38	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6
L81690-47	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6
L81690-48	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6
L81690-57	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- 6

L81690-58	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-67	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-68	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-77	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:35	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
L81690-78	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 18:53	6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
WG188628-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-
WG188628-2	SB		AQ6PPDQ-LCMS	OTHR WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- WG188628-1 6
WG188628-3	MS		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- L81690-77
WG188628-4	MSD		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- WG188628-3 L81690-77
WG188628-5	LD		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,- L81690-57
WG188628-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		6/23/2023 8:00	6/24/2023 8:30	WG188628-1,-2,-3,-4,-5,-

WG188629 6PPDQ by LCMS

Sample Project L81690-9 421520-200	•	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 6/18/2023 19:09	Prep Date 6/23/2023 12:30	Anal Date 6/24/2023 12:30	QC Association Comments WG188629-1,-2,-3,-4,-5,-
L81690-10 421520-200		AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-19 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-20 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-29 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-30 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-39 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-40 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-49 421520-200	WDOE Stormwater BMP A Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,- 6

L81690-50	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-59	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-60	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-69	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-70	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-79	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:09	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
L81690-80	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 19:27	6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
WG188629-1	МВ	Neseuren	AQ6PPDQ-LCMS	BLANK WTR		6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,-
WG188629-2	SB		AQ6PPDQ-LCMS	BLANK WTR		6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,- WG188629-1
WG188629-3	MS		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,- L81690-30
WG188629-4	MSD		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,- WG188629-3 L81690-30
WG188629-5	LD		AQ6PPDQ-LCMS	STORM WTR		6/23/2023 12:30	6/24/2023 12:30	WG188629-1,-2,-3,-4,-5,- L81690-30
WG188629-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		6/23/2023 12:30	6/24/2023 12:30	6 WG188629-1,-2,-3,-4,-5,- 6

Workgroup: WG188625 6PPDQ by LCMS

MB:WG188625-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG188625-2 MB:WG188625-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.229 115 50--150

MSD:WG188625-4 MS:WG188625-3 L81690-84 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L <MDL 0.2 0.257 128 50--150 0.2 0.256 128 0 0--45 6ppd-quinone

LD:WG188625-5 L81690-1 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.06780.068810--40

CCC:WG188625-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.002
 0.01
 ug/L
 0.2
 0.197
 99
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L81690-1	65
L81690-2	65
L81690-11	63
L81690-12	62
L81690-21	63
L81690-22	59
L81690-31	59
L81690-32	61
L81690-41	59
L81690-42	59
L81690-51	54
L81690-52	57
L81690-61	57
L81690-62	54
L81690-71	53
L81690-72	54
L81690-81	52
L81690-82	54
L81690-83	53
L81690-84	55
WG188625-1	65
WG188625-2	65
WG188625-3	53
WG188625-4	54
WG188625-5	54
WG188625-6	79

Workgroup: WG188626 6PPDQ by LCMS

MB:WG188626-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG188626-2 MB:WG188626-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.251 126 50--150

MSD:WG188626-4 MS:WG188626-3 L81690-53 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.833 0.2 1.06 113 50--150 0.2 1.06 113 0 0--45 6ppd-quinone

LD:WG188626-5 L81690-3 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.8550.956110--40

CCC:WG188626-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L1110080--120

Surrogate:	d5-6PPDQ 20200
(Lab Limits)	
L81690-3	55
L81690-4	56
L81690-13	56
L81690-14	54
L81690-23	54
L81690-24	56
L81690-33	55
L81690-34	54
L81690-43	53
L81690-44	54
L81690-53	52
L81690-54	52
L81690-63	50
L81690-64	52
L81690-73	50
L81690-74	48
WG188626-1	68
WG188626-2	65
WG188626-3	49
WG188626-4	49
WG188626-5	48
WG188626-6	80

Workgroup: WG188627 6PPDQ by LCMS

MB:WG188627-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG188627-2 MB:WG188627-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.249 125 50--150

MSD:WG188627-4 MS:WG188627-3 L81690-66 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.445 0.2 0.737 146 50--150 0.2 0.711 133 0--45 6ppd-quinone

LD:WG188627-5 L81690-76 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.4860.50540.-40

CCC:WG188627-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.002
 0.01
 ug/L
 0.2
 0.204
 102
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L81690-5	64
L81690-6	68
L81690-15	63
L81690-16	58
L81690-25	62
L81690-26	63
L81690-35	62
L81690-36	61
L81690-45	61
L81690-46	57
L81690-55	63
L81690-56	64
L81690-65	66
L81690-66	65
L81690-75	63
L81690-76	62
WG188627-1	71
WG188627-2	66
WG188627-3	11 *
WG188627-4	65
WG188627-5	61
WG188627-6	94

Workgroup: WG188628 6PPDQ by LCMS

MB:WG188628-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

0.002

SB:WG188628-2 MB:WG188628-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.253 126 50--150

MSD:WG188628-4 MS:WG188628-3 L81690-77 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

0.335

0.354

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.37 0.2 0.594 112 50--150 0.2 0.611 120 3 0--45 6ppd-quinone

5

0--40

LD:WG188628-5 L81690-57 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL Units SAMP Value LD Value RPD Qual Lab Limit

ug/L

CCC:WG188628-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

0.01

(Continuing Calibration Check)

6ppd-quinone

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.002
 0.01
 ug/L
 0.2
 0.2
 100
 80--120

Surrogate: (Lab Limits)	d5-6PPDQ 20200
L81690-7	68
L81690-8	68
L81690-17	69
L81690-18	69
L81690-27	67
L81690-28	67
L81690-37	69
L81690-38	69
L81690-47	68
L81690-48	68
L81690-57	68
L81690-58	67
L81690-67	63
L81690-68	70
L81690-77	67
L81690-78	65
WG188628-1	80
WG188628-2	77
WG188628-3	68
WG188628-4	67
WG188628-5	65
WG188628-6	91

Workgroup: WG188629 6PPDQ by LCMS

MB:WG188629-1 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

 Parameter
 MDL
 RDL
 Units
 MB Value
 Qual

 6ppd-quinone
 0.002
 0.01
 ug/L
 <MDL</td>

SB:WG188629-2 MB:WG188629-1 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.244 122 50--150

MSD:WG188629-4 MS:WG188629-3 L81690-30 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.322 0.2 0.511 94 50--150 0.2 0.542 110 6 0--45 6ppd-quinone

LD:WG188629-5 L81690-30 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.3220.3320--40

CCC:WG188629-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L10.9719780--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L81690-9	59
L81690-10	61
L81690-19	59
L81690-20	60
L81690-29	60
L81690-30	61
L81690-39	62
L81690-40	59
L81690-49	60
L81690-50	60
L81690-59	59
L81690-60	60
L81690-69	56

L81690-70	57
L81690-79	60
L81690-80	57
WG188629-1	58
WG188629-2	58
WG188629-3	59
WG188629-4	57
WG188629-5	62
WG188629-6	87

Lo	gin	:	P81690	
_	_			

WDOE BMP - Herrera 6PPDQ Add-on Field Protocol Sampling

FSU TC:		:
LPM: Meghan	Elkey	*,. *

Project: 421520-200

10,000. 42.1020 200	CHAIN OF	CUSTODY	
	Relinguished by Notholan Harry	Date 6/20/2023	Time 12:00
		Date 6 20/23	Time 125.00
	Sample Numbers		[All]
Sample Number	P81690-1	P81690-2	P81690-3
QC Link		all management, statute statute, symptys or, symbolicidadide the 200 cm so that debutters of some debutter professional debutters and the control of the con	
Locator	CONT	CONT	CONT
Short Loc Desc			
Locator Desc	Control Sample	Control Sample	Control Sample
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	Batch 1	Batch 1	Botch 2
Start Date/Time	LOB-06-18 1540	2023-06-18 15:37×	16:02
End Date/Time			
Time Span	The control of the co		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)
······································			생님이 아이들은 사람들이 가장 아이들의 것은 어느를 받는데 되었다.

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2023-06-18

Login: P81690	WDOE BMP - Herrera 6PPDQ Add	FSU TC:	
Project: 421520-200 Sample Number	P81690-4	P81690-5	P81690-6 '
QC Link	gegen and and the CO		The control of the co
Locator	CONT	CONT	CONT
Short Loc Desc	grade padamak (A.S.) (1.30) (1.00) (1	and the second s	And the series of the second control of the
Locator Desc	Control Sample	Control Sample	Control Sample
Site	I-5TAPE	I-STAPE.	I-STAPE
Comments	Batch 2	Batch 3	Both 3
Start Date/Time	10:19	16:48	17:05
End Date/Time			
Time Span	en tillstand (3) av grann med skadelige en stepte fram skadelin fraggrann skillsagskap fram sprengen skallstand (3) fram fram skillsagskap fram skallstand (3) fram fram skillsagskap fram skill		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200			FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-7	P81690-8	P81690-9	
QC Link	anagamatan da 2002, Anagamatan da 2001, promonan da 100 da	AND SECURITY CONTINUES AND		
Locator	CONT	CONT		
Short Loc Desc		The state of the s		
Locator Desc	Control Sample	Control Sample	Control Sample	
Site	I-5TAPE	I-STAPE	I-STAPE	
Comments	Botch 4	Batch 4	Batch 5	
Start Date/Time	18:35	18:53	19:09	
End Date/Time				
Time Span	and the state of t			
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	FSU TC: LPM: Meghan Elkey
Sample Number	P81690-10	P81690-11	P81690-12
QC Link			PTFE TUB
Locator	CONT	PTFE_TUB	and and an international control of the properties of the properti
Short Loc Desc		ere entermonis plan in the project and project in the pure after present and a final to be the project of the p	PATER A. L. L. L. C.
Locator Desc	Control Sample	PTFE tubing	PTFE tubing
Site	I-5TAPE	I-STAPE	I-STAPE
Comments	Botton 5	Batch 1	Botch 1
Start Date/Time	19:27	15- 10	15:32
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	FSU TC:LPM: Meghan Elkey	
Sample Number	P81690-13	P81690-14	P81690-15
QC Link		et appears y en che a through the secretaristic of single-property control or control of the con	AND CONTRACTORY OF THE PROPERTY OF THE PROPERT
Locator	PTFE_TUB	PTFE_TUB	PTFE_TUB
Short Loc Desc		And the contract of the contra	The state of the s
Locator Desc	PTFE tubing	PTFE tubing	PTFE tubing
Site	I-STAPE	I-STAPE	I-STAPE
Comments	Batch 2	Both 2	Batch 3
Start Date/Time	Wo=02	16:19	16:48
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Ad	FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-16	P81690-17	P81690-18
QC Link			
Locator	PTFE_TUB	PTFE_TUB	PTFE_TUB
Short Loc Desc		st. Opentity opentity of a normal contraction of the first transformation of the first property of the first transformation and the first property of the f	and provided the common and the comm
Locator Desc	PTFE tubing	PTFE tubing	PTFE tubing
Site	I-5TAPE	I-STAPE	I-STAPE
Comments	Batch 3	Batch 4	Boton 4
Start Date/Time	17:05	16:35	18:53
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Will bolloan Appor Distriction of Locality and an expension of the control of the			FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-19	P81690-20	P81690-21	
QC Link	egymanistatet prophietistus onga mentionalitatette programs otto timbet timbet onga symmetric mentionalitatet (mentionalitatet timbet on annotationalitatet (mentionalitatet timbet on annotationalitatet (mentionalitatet timbet on annotationalitatet timbet on annotationalitatet (mentionalitatet timbet on annotationalitatet timbet on an		in the control of the	
Locator	PTFE_TUB	PTFE_TUB	SILI TUB	
Short Loc Desc		and professional and in the commentation of the following and the comment of the		
Locator Desc	PTFE tubing	PTFE tubing	Silicone tubing	
Site	I-STAPE	I-5TAPE	I-STAPE	
Comments	Both 6	Batch 5	Botch 1	
Start Date/Time	19:09	19:27	15:10	
End Date/Time				
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-22	P81690-23	P81690-24
QC Link			$s_{ij} = s_{ij} + s$
Locator	SILI TUB	SILL TUB TO STATE TO	SILI TUB
Short Loc Desc	POPUL PROPERTY CONTRACTOR CONTRAC	The state of the s	
Locator Desc	Silicone tubing	Silicone tubing	Silicone tubing
Site	I-STAPE	I-STAPE	I-5TAPE
Comments	Batch 1	Botch 2	Botch 2
Start Date/Time	15:32	10:02	16=19
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Ad	d-on Field Protocol Sampling	LPM: Meghan Elkey
Sample Number	P81690-25	P81690-26	P81690-27
QC Link			
Locator	SILI_TUB	SILL_TUB	SILI TUB
Short Loc Desc		and was the first with the contract of the con	
Locator Desc	Silicone tubing	Silicone tubing	Silicone tubing
Site	I-5TAPE	I-STAPE	I-STAPE
Comments	Batch 3	Batch 3	Batch 4
Start Date/Time	16:43	17:05	18:35
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	FSU TC: LPM: Meghan Elkey
Sample Number	P81690-28	P81690-29	P81690-30
QC Link			. See A see
Locator	SILI_TUB	SILI_TUB	SILL TUB
Short Loc Desc	A ASSESSMENT OF THE STATE OF TH	Adaptive to the transfer of the second section of the second seco	
Locator Desc	Silicone tubing	Silicone tubing	Silicone tubing
Site	I-5TAPE	I-5TAPE	1-5TAPE
Comments	Botton 4	Batch 5	Boton 5
Start Date/Time	19:53	19:09	19:27
End Date/Time			
Time Span			
Sample Depth		Contracting to the contraction of the contraction o	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Ad	d-on Field Protocol Sampling	LPM: Meghan Elkey
Sample Number	P81690-31	P81690-32	P81690-33
QC Link		The state of the s	
Locator	HDPE_FT	HDPE_FT	HDPE_FT
Short Loc Desc	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	The probability of the control of th	
Locator Desc	HDPE bottle sample	HDPE bottle sample	HDPE bottle sample
Site	I-5TAPE	I-STAPE	I-STAPE
Comments	Batch 1	Batch 1	Batch 2
Start Date/Time	15-10	15:32	16:02
End Date/Time	and the second section of the section of the second section of the section of the second section of the section of th		
Time Span			
Sample Depth			All art and control and contro
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)

Login: P81690 Project: 421520-200	MDOE Bills - Hellera of LDG War-out Light Lordon gambing		FSU TC:	
Sample Number	P81690-34	P81690-35	P81690-36	
QC Link				
Locator	HDPE_FT	HDPE_FT	THE STATE OF THE S	
Short Loc Desc		Anna and the second a	HDPE bottle sample	
Locator Desc	HDPE bottle sample	HDPE bottle sample	1-5TAPE	
Site	I-5TAPE	I-STAPE	FULL CONTROL C	
Comments	Both 2	13 duh 3	Batch 3	
Start Date/Time	16=19	16:48	17:05	
End Date/Time			The state of the s	
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	

Login: P81690	WDOE BMP - Herrera 6PPDQ Add	FSU TC:		
Project: 421520-200		and a second	LPM: Meghan Elkey	
Sample Number	P81690-37	P81690-38	P81690-39	
QC Link	CONTRACTOR AND	(20) of the section o	and property and the first the control of the contr	
Locator	HDPE_FT	HDPE FT	HDPE_FT	
Short Loc Desc		polycycycolor, www. 2004 - construence, www.memory.com/schools/2012/2012/2012/2014/2014/2014/2014/2014		
Locator Desc	HDPE bottle sample	HDPE bottle sample	HDPE bottle sample	
Site	I-5TAPE	I-5TAPE	I-STAPE	
Comments	Botch 4	Both 4	Botch 5	
Start Date/Time	18.35	18:53	19:09	
End Date/Time				
Time Span	A green process in the second section of the section of the second section of the section of the second section of the section of the second section of the sect			
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	LPM: Meghan Elkey	
Sample Number	P81690-40	P81690-41	P81690-42	
QC Link			The suppression of the suppressi	
Locator	HDPE_FT	HDPE_24	HDPE 24	
Short Loc Desc	The state of the s			
Locator Desc	HDPE bottle sample	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours	
Site	I-5TAPE	I-STAPE	I-5TAPE	
Comments	Batch 5	Botch 1	Batch 1	
Start Date/Time	14:27	15:10	16=32	
End Date/Time				
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	1-011 1 leid 1 Totobol Gamping	LPM: Meghan Elkey
Sample Number	P81690-43	P81690-44	P81690-45
QC Link			HDPE 24
Locator	HDPE_24	HDPE 24	CALL AND THE PROPERTY OF THE P
Short Loc Desc	gang araw was a 1 st. 2 pang pagama gana ana katang paga manana ara 12 ang ang pagamana ana araw 23 pang pagamana was araw 3 pang	g yar samman in i fini maa yaarahaad haad hii iliya liga baan maa la dahii liga garaman aan ahii hii iya haan aan qaraa hii isa liga garaman aan ahii iya haan aan qaraa hii isa liga garaman aan ahii isa dahii iya haan aan qaraa hii isa liga garaman aan ahii iya haan aan qaraa hii isa liga garaman aan ahii isa dahii iya haan aan qaraa aan aa	LIDDE combon complex 24 hours
Locator Desc	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours
Site	I-STAPE	I-STAPE	I-STAPE
Comments	Batch 2	Both 2	Bath 3
Start Date/Time	16:02	16:19	16:48
End Date/Time			
Time Span		Annual Control of Control operation and a 15 of the 25 th 25	
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)

Login: P81690 Project: 421520-200	ogin: P81690 WDOE BMP - Heriela of Fb& Add-off Field Floteses Campaing		FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-46	P81690-47	P81690-48	
QC Link		HDPE 24	HDPE 24	
Locator	HDPE_24	A STATE FOR THE STATE OF THE ST	and the state of t	
Short Loc Desc Locator Desc	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours	
Site	I-5TAPE	I-5TAPE	I-STAPE	
Comments	Batch 3	Batch 4	Bath 4	
Start Date/Time	17:05	12:35	18:53	
End Date/Time	and the property of the second			
Time Span		general commences and the Commences and April		
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	

_ogin: P81690	1: P81690 WDOE BWP - Herrera GFFDQ Add-on Frod Frod Sampling		FSU TC: LPM: Meghan Elkey	
Project: 421520-200 Sample Number	P81690-49	P81690-50	P81690-51	
QC Link			FLPE FT	
Locator	HDPE_24	HDPE_24	A PROPERTY OF THE PROPERTY OF	
Short Loc Desc	e de la companya del companya de la companya del companya de la companya del la companya de la c	жи энгэн энгэг нь энгэ нь энгэн энгэн энгэн энгэ энгэ	TIDE Lettle comple	
Locator Desc	HDPE carboy sample - 24 hours	HDPE carboy sample - 24 hours	FLPE bottle sample	
Site	I-5TAPE	I-STAPE	I-5TAPE	
Comments	Batch 5	Batch 5	Batch 1	
Start Date/Time	19:09	19=27	15:10	
End Date/Time	and the photogram and and an internal constraint of the photogram			
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (2)	

Login: P81690 Project: 421520-200	ogin: P81690 WDOE BIMP - Heriera GFFDQ Add-011 Ficial Fictorial Company		FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-52	P81690-53	P81690-54	
QC Link		Applications of the control of the c	FLPE FT	
Locator	FLPE FT	FLPE FT	A BASII I I NO BURGARAN AND TO LEGARINA COMMINISTRAÇÃO DE ANTONIO DE CONTRACTOR DE CON	
Short Loc Desc	The second secon	The state of the s	TIDE hottle somple	
Locator Desc	FLPE bottle sample	FLPE bottle sample	FLPE bottle sample	
Site	I-STAPE	I-STAPE	I-STAPE	
Comments	Batch 1	Botch 2	BALL 2	
Start Date/Time	15:32	16:02	16=19	
End Date/Time				
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	

Login: P81690 Project: 421520-200	in: P81690 WDOE BMP - Herrela GFFDQ Add-Sit Flora FFC6333. Campung		FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-55	P81690-56	P81690-57	
QC Link Locator	FLPE FT	FLPE FT	FLPE FT	
Short Loc Desc Locator Desc Site	FLPE bottle sample	FLPE bottle sample	FLPE bottle sample	
Comments	Batch 3	Botch 3	Botch 4	
Start Date/Time	16:48	17:05	18:35	
End Date/Time				
Time Span				
Sample Depth				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-58	P81690-59	P81690-60
QC Link		FLPE_FT	FLPE_FT
Locator Chart Las Dass	FLPE	Andrew Colored Colored State (Colored State (Colore	Meren medial lana sirik binyang pangananan merencakan kepangan kemanan mendalah satu pangan pengan pengan kepangan menentah satu pangan pengan
Short Loc Desc Locator Desc	FLPE bottle sample	FLPE bottle sample	FLPE bottle sample
Site	I-5TAPE	1-5TAPE	I-5TAPE
Comments	Batch 4	BALL 6	Bothon 5
Start Date/Time	n=53	19:09	19:27
End Date/Time			
Time Span			
Sample Depth		See the first the 2010 processor for the first shaded the standard of the stan	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Ad	d-on Field Protocol Sampling	FSU TC:
Sample Number	P81690-61	P81690-62	P81690-63
QC Link	ag graf and and a first from the graft of th	FLPE 24	FLPE 24
Locator	FLPE_24	and the second s	the processing over the contract of the contra
Short Loc Desc	an all a state of the state of	FLPE carboy sample - 24 hours	FLPE carboy sample - 24 hours
Locator Desc	FLPE carboy sample - 24 hours	A BANKET PROFESSION TO THE STATE OF THE STAT	I-5TAPE
Site	I-STAPE	1-5TAPE	The state of the s
Comments	Batch 1	Botch 1	Both M. D.
Start Date/Time	15= 10	15=32	16:02
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Ad	d-on Field Protocol Sampling	LPM: Meghan Elkey
Sample Number	P81690-64	P81690-65	P81690-66
QC Link	Anna ta anna 1972 a 1982 ta tha ann air ann air an tha ann air 1982 a 1982 ta tha ann air ann air ann air ann air ann air ann an tha ann an 1982 a 1982 ta tha ann air	The state of the s	
Locator	FLPE_24	FLPE_24	FLPE_24
Short Loc Desc	the control of the co		and the second seco
Locator Desc	FLPE carboy sample - 24 hours	FLPE carboy sample - 24 hours	FLPE carboy sample - 24 hours
Site	I-5TAPE	I-STAPE	I-STAPE
Comments	Batch 2	Batch 3	Botch 3
Start Date/Time	16-19	16:48	17:05
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

WDOE BMP - Herrera 6PPDQ Add	LPM: Meghan Elkey	
P81690-67	P81690-68	P81690-69
	gravitati etterit in miner soci konnolla igonjulen illinenneme endoplajdojova ved krejenatajajdoja dosamoje gravjajdojajova agravitaj ag	
FLPE_24	FLPE_24	FLPE 24
100 mm	and the second section of the section o	
FLPE carboy sample - 24 hours	Particulation in the contract of the contract	FLPE carboy sample - 24 hours
I-5TAPE	I-STAPE	I-5TAPE
Batch 4	Batch 4	Bothon 5
18:35	18:53	19:09
4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)
	FLPE 24 FLPE carboy sample - 24 hours I-5TAPE NS - 35	FLPE 24 FLPE carboy sample - 24 hours I-5TAPE

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add-on Field Protocol Sampling		FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-70	P81690-71	P81690-72	
QC Link		#	Control of the Contro	
Locator	FLPE_24	FIELDDUP	FIELDDUP	
Short Loc Desc		A STATE OF THE STA		
Locator Desc	FLPE carboy sample - 24 hours	FIELD DUPLICATE	FIELD DUPLICATE	
Site	I-STAPE		FLDQC	
Comments	Batch 5	Batch 1	Botch 1	
Start Date/Time	19-27	15: 1Q	15:32	
End Date/Time				
Time Span				
Sample Depth		And the first the control of the con		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	FSU TC: LPM: Meghan Elkey	
Sample Number	P81690-73	P81690-74	P81690-75
QC Link		and the second s	FIELDDUP
Locator	FIELDDUP	FIELDDUP **OFFICE OF THE CONTROL OF	FIELDUM AND THE CONTROL OF THE CONT
Short Loc Desc	and the state of t		FIELD DUPLICATE
Locator Desc	FIELD DUPLICATE	FIELD DUPLICATE	FLDQC
Site	FLDQC		
Comments	Batch 2	Both 2	Botch 3
Start Date/Time	16:02	10-19	16:49
End Date/Time	The state of the s		
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	LPM: Meghan Elkey
Sample Number	P81690-76	P81690-77	P81690-78
QC Link		The first that we will be the first that the first	and the state of t
Locator	FIELDDUP	FIELDDUP	FIELDDUP
Short Loc Desc		er angelet for him to grant and a great property of the season of the se	
Locator Desc	FIELD DUPLICATE	FIELD DUPLICATE	FIELD DUPLICATE
Site	FLDQC	FLDQC	FLDQC
Comments	Batch 3	Batch 4	Batch 4
Start Date/Time	17:05	18:35	18:53
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P81690	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	LPM: Meghan Elkey		
Project: 421520-200 Sample Number	P81690-79	P81690-80	P81690-81 - PAE - TEE		
QC Link	Constitution for the second contract of the s				
Locator	FIELDDUP	FIELDDUP	EQUIPBLANK		
Short Loc Desc	4. 19. 20. 1/3 heregis from a annual 3.24 Nation (19. 20. 20. demode la la 20. 20. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19		EQUIPBLANK		
Locator Desc	FIELD DUPLICATE	FIELD DUPLICATE	EQUIPMENT BLANK		
Site	FLDQC	FLDQC	METRO		
Comments	Botch 5	Batch 5	Rinsate blank Teflon Pre (13 atch 1)		
Start Date/Time	19:09	19:27	2013-06-18 13:50		
End Date/Time			2023=06-18 13:5%		
Time Span					
Sample Depth					
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LA 6PPDQ (43)		

Login: P81690 Project: 421520-200	WDOE BMP - Herrera 6PPDQ Add	d-on Field Protocol Sampling	LPM: Meghan Elkey
Sample Number	P81690-82 -PRE-51L	P81690-83	P81690-84
QC Link			The second of th
Locator	EQUIPBLANK	EQUIPBLANK	EQUIPBLANK
Short Loc Desc	EQUIPBLANK	EQUIPBLANK	EQUIPBLANK
Locator Desc	EQUIPMENT BLANK	EQUIPMENT BLANK	EQUIPMENT BLANK
Site	METRO	METRO	METRO
Comments	Rinsate blank	Rinsate blank	Rinsate blank
	Grican Pre (Botch 1)	Tellan Post (Botch 1)	Isticon Post (Boton)
Start Date/Time	2023-06-18 13:50	19:35	19:35
End Date/Time	2023-06-19 13:58		
Time Span	And a second and a		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LA 6PPDQ (43)	4 LA 6PPDQ (43)	4 LA 6PPDQ (43)

LIQUID SAMPLE RECEIPT RECORD

ania Nomborio	5/1/~	~ //	e211							VECOKD			
ogin Number(s):	8/690	7 - U-	-84)		ject No.: 40	1520	2-20	0	Sub-Contracting: Y 1	(W)	List Product(s):		
ollect Date(s);	10-50	- 2 3			eive Date:	6-2	<i>20-6</i>	2.5	Changes: Y (N		List Parameter(s):		
	10-10-		SAMPLE REC						FIE	ELD PRESERVATION CH	ECKLIST (Circle and/or chec	k applicable sel	ections)
CONDITION	<u>V Acı</u>	ceptable?	Comment	<u>t ID</u>	CONDITION		<u>eptable?</u>	Comment ID	PRODUC	CT / Preservation	SM Action	Acceptable?	Corrective Action
abels / Fieldsheets	/	M N		Vol	umes		YAN		BNA / pH 6 - 9 w/ H ₂ SO ₄ or	r NaOH	√field sheet for F. pH	Y / N	□ Notify ORG
ontainer		Y ∫ N			ding Times		YN		GN / pH > 12 w/ NaOH with	nin 15 min	☐ Check pH	Y / N	Deliver to CONV
emperature (w/ ice)		//N/NA			ivery Location		Y N		NO23 pH < 2 w/ H ₂ SQ ₄		☐ Check pH	Y / N/NA	☐ Preserve by SM
	BOTTL	E COUNT	(#) AND DES	SCRIPTIO	N and SAMPLE	NUMBÉS	16		CR(VI) 7 TOTCR(VI) / pH 9.	.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y / N	☐ Deliver to CONV
#		<u>B</u>	ottle Descrip	ption: Sa	mple Numbers		1-11		ICP / HG-CVAA-M / pH < 2	2 w/ HNO ₃	☐ Check pH	Y/N	Preserve By SM
40 mL clear vial (\	(VOA):								O&G / HEM / PHENOL / ph	H < 2 w/ H ₂ SO ₄	Check documentation	Y / N	☐ Preserve by SM
60 mL clear glass	s (PHYTO):								PHYTOPLANKTON / Lugo		Visually inspect	Y / N	Deliver to MiCRO
60 mL CWM HDP	PE:								TKN / COD pH < 2 w/ H ₂ S	O₄ within 15 min	☐ Check pH	Y / N	
125 mL AWM HD	PE:								TOC / pH < 2 w/ HCI (NPDI		☐ Check pH	Y/N	Preserve By SM
125 ml, CNM HDF	PE:								TOTSULFIDE / pH > 9 w/ N	NaOH, ZnAc	Check documentation	Y/N	Preserve By SM
125 mL CWM HD	PE:								WDO / FIXED	,	Visually inspect	Y / N	☐ Deliver to CONV
125 mL GANM:									Other;		amy moreon	1 / N	☐ Deliver to CONV
125 mL GANM w/	HCI									INE CHI DOECEDVATION	CHECKLIST (Circle and/or c		
250 mL AWM HD	PE: 3 -								PRODUC	CT / Preservation	SM Action		
250 mL WM HD	PE: 51-6	(a)	250mL	CNM	FLPE _{ME 6/20}	0/23			Chiorinated Pesticides / p		√field sheet for F. pH	Acceptable?	Corrective Action
250 mL CWM HD	PE (MICRO)				WIL 0/2	91,43			HG-CVAA-L-Teflon (T/D	· · · · · · · · · · · · · · · · · · ·		Y/N	☐ Adjust pH
4 250 mL GAWM:	1-30.	41 -5/	0,61-	-84		····			· · · · · · · · · · · · · · · · · · ·	D)/pH<2w/ULTRA HNO ₃	Preserve & deliver	NA NA	NA
250 mL GAWM w	// H2SO4:								TOC / pH < 2 w/ HCl	U J / pri < 2 W ULIKA RNO ₃	Preserve & deliver	NA NA	NA
300 mL WDO (8 h									Other:		Preserve & deliver	NA NA	NA
500 mL AWM HDI									Other;			·	
500 mL CWM HD)PE·								Oliei,				
500 mL CWM PP									Product / Interference	INTERFERENCE LES	T (Circle and/or check applie		
500 mL HDPE (MI	·										Positive Test?	<u>Treated</u>	Corrective Action
500 mL HDPE, do	· · · · · · · · · · · · · · · · · · ·	ETALE).							BNA / Chlorine (Check doc		Y / N / not tested	Y/N	Deliver to ORG
500 mL Tefion (Hg		it intoj.							CN / Chiorine (Check docur		Y / N / not tested	Y/N	☐ Deliver to CONV
500 mL Telion, do		ETAL ON			· ···				CN / Suifide (Check field sh		Y / N / not tested	Y/N	☐ Deliver to CONV
500 mL GANM / G		IE IALOJ.							VOA / Chlorine (Check doc	umentaion)	Y / N / not tested	Y / N	Deliver to ORG
500 mL Polystyrer		- /METALO	· · · · · · · · · · · · · · · · · · ·						Other:				
· · · · · · · · · · · · · · · · · · ·	SIE FIRTAUON UNA	IS (METALS)):								HEADSPACE CHECK		
1L AWM HDPE:										ICT (SM Action)	Check For	Acceptable?	Corrective Action
1L CWM HDPE:	NDQ1								MICRO (Visually inspect)		Headspace (@ 1")	Y / N	☐ Notify MICRO
1L CWM PP (MIC	.KO):								TOTSULFIDE (Visually insp	pect)	Headspace (< 1")	Y/N	☐ Notify CONV
1L GANM:									VOA (Visually inspect)		Zero headspace	Y/N	☐ Notify ORG
1L GCWM; 1L GAWM w/ H ₂ St	· ·								WDO (Visually inspect)		Zero headspace	Y/N	☐ Notify CONV
<u>-</u>	, U ₄ .								Other,				
2L CWM HDPE: Other:									F	IELD FILTRATION CHEC	KLIST (Circle and/or check a	pplicable select	ions)
Jouren.			VOLUME TO THE PARTY OF THE PART		V			MIT OF THE PARTY O		ct (SM Action)	Field Filtered	Field Blank	Corrective Action
		C	OMMENTS !	I NOTIFIC	ATIONS	100	1		ORTHOP (Check Field She		Y (within 15 min y / n) / N	Y / N	Deliver to CONV
									NO2 / NO3 / NO23 / NH3 / S		Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
									Dissolved Metals (Check F	Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to METALS
			····						OOC (Deliver / Notify Unit)		Y (within 15 min or 1 day) / N	Y / N/NA	☐ Deliver to CONV
									DCOD / CR(VI) (Deliver / No	otify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV
									Other:				

CC: ☐ AQUATOX, ☐ CONV, ☐ METALS, ☐ MICRO, ☐ ORG, ☐

Deliver dissolved Hg-CVAF samples to METALS for filtration.

NOTES
 Deliver double-backed metals samples to METALS for process.

Deliver double-bagged metals samples to METALS for preservation.
 Do per test platfor preserved BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

JUN ZV ZB 12:35

DEPARTMENT OF ECOLOGY

Manchester Environmental Laboratory
7411 Beach Drive East ● Port Orchard, Washington 98366-8204

Case Narrative

July 19, 2023

To: Baker, Morgan

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047

Subject: 6 PPD-Q by LC-MS/MS

From: Myrna Mandjikov

Sample Receipt

Enclosed are the 6PPDQ results for the samples received by MEL on June 20, 2023. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

These samples were prepared, analyzed, and verified by MEL according to the submitted chain-of-custody and MEL's procedures. A Sample Correlation Table with batch summary is located in Appendix A. The samples were:

- extracted following a modification of method SW3535A.
- analyzed following MEL SOP730136.

Analyst Comments

None noted.

Sample Qualification

The samples were qualified according to MEL's procedures. The table in Appendix B summarizes the manual qualifiers added by MEL. All results reported below the method reporting limit (RL) were automatically qualified as estimates, but not included in Appendix B. The qualifiers are defined in Appendix C.

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendix D. All analytes met linearity requirements unless noted in Appendix E.

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 256.31 mL

Initial Vol: 256.31 mI Final Vol: 10 mL Lab ID #: 2306047-01 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

Field ID: DUPE_1

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	47.8	1		0.975
Surrogate Reco		Sample	Spike	0.4 =	% Rec.
CAS#	Analyte	Result	Level	% Rec.	Limits
TBD	D5-6PPD-quinone	26.4	78.0	34	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 264.73 mL

Final Vol: 264.73 m

Lab ID #: 2306047-02 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

Field ID: DUPE 2

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	64.5	1		0.944
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	31.2	75.5	41	20-200

Myrna Mandjíkov

Release Date: 7/19/2023

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 346.62 mL Final Vol: 10 mL Lab ID #: 2306047-03 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/14/2023 Matrix: Water Units: ng/L

Field ID: DUPE 3

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	442	5		3.61
Surrogate Reco		Sample	Spike		% Rec.
CAS#	Analyte	Result	Level	% Rec.	Limits
TBD	D5-6PPD-quinone	55.2	57.7	96	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 248.12 mL

Initial Vol: 248.12 m. Final Vol: 10 mL

Lab ID #: 2306047-04 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/14/2023 Matrix: Water

Field ID: DUPE 4

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	546	5		5.04
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	93.2	80.6	116	20-200

Myrna Mandjíkov

Release Date: 7/19/2023

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 247.83 mL

Final Vol: 10 mL

Lab ID #: 2306047-05 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

Field ID: DUPE_5

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	474	1		1.01
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	23.1	80.7	29	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 259.24 mL

Initial Vol: 259.24 mL Final Vol: 10 mL Lab ID #: 2306047-06 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/14/2023 Matrix: Water

Field ID: DUPE 6

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	347	5		4.82
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	87.6	77.1	114	20-200

Myrna Mandjíkov

Release Date:

7/19/2023

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 250.69 mL

Final Vol: 250.69 m

Lab ID #: 2306047-07 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

Field ID: DUPE_7

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	306	1		0.997
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	30.6	79.8	38	20-200

Myrna Mandjíkov

Release Date:

7/19/2023

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 263.07 mL Final Vol: 10 mL

D5-6PPD-quinone

TBD

Lab ID #: 2306047-08 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/14/2023 Matrix: Water Units: ng/L

Field ID: DUPE 8

94

20-200

Qualifier Dilution Result LLOQ CAS# Analyte 2754428-18-5 6PPD-quinone 232 5 4.75 **Surrogate Recovery:** Sample Spike % Rec. CAS# Analyte % Rec. Limits Result Level

71.2

Release Date:

76.0

Myrna Mandjíkov

7/19/2023

Project: 6PPD-q Characterization and Protocol

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 250.59 mL

Initial Vol: 250.59 ml Final Vol: 10 mL Lab ID #: 2306047-09 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

Field ID: DUPE 9

Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	239	1		0.998
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	18.9	79.8	24	20-200

Myrna Mandjíkov

Release Date: 7/19/2023

Project: 6PPD-q Characterization and Protocol

Field ID: DUPE_10

Work Order: 2306047 Project Officer: Baker, Morgan Initial Vol: 254.48 mL Final Vol: 10 mL Lab ID #: 2306047-10 Collected: 6/18/2023 Prep Method: SW3535A Analysis Method: SOP730136 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water Units: ng/L

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
2754428-18-5	6PPD-quinone	297	1		0.982
Surrogate Reco		Sample	Spike	0/ Dog	% Rec.
CAS#	Analyte	Result	Level	% Rec.	Limits
TBD	D5-6PPD-quinone	35.7	78.6	45	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

QC Type: Method Blank

Work Order: Batch QC Project Officer: Baker, Morgan Initial Vol: 250 mL Final Vol: 10 mL Lab ID #: B23G029-BLK1 Prep Method: SW3535A Analysis Method: SOP730136 Source Field ID: B23G029-BLK1 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water Units: ng/L

CAS#	Analyte		Result	Qualifier	LLOQ
2754428-18-5	6PPD-quinone		1.00	U	1.00
Surrogate Reco	overy: Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
CASH	Analyte	Nesuit	Levei	70 Ket.	Limits
TBD	D5-6PPD-quinone	44.3	80.0	55	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

Work Order: Batch QC Project Officer: Baker, Morgan Initial Vol: 250 mL

Final Vol: 10 mL

Lab ID #: B23G029-BS1 Prep Method: SW3535A Analysis Method: SOP730136 Source Field ID: B23G029-BS1 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

QC Type: LCS

Units: %

Analyte		Result	Spike Level	LLOQ	%Rec	%Rec Limits
6PPD-quin	one	74.1	80.0	1.00	93	50-150
Surrogate CAS#	Recovery: Analyte	Sam Res		Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone	38.	.4	80.0	48	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Project: 6PPD-q Characterization and Protocol

Work Order: Batch QC Project Officer: Baker, Morgan

Initial Vol: 250 mL Final Vol: 10 mL Lab ID #: B23G029-BSD1 Prep Method: SW3535A Analysis Method: SOP730136 Source Field ID: B23G029-BSD1 Batch ID: B23G029 Prepared: 7/10/2023 Analyzed: 7/12/2023 Matrix: Water

QC Type: LCS Dup

Units: %

Analyte		Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
6PPD-quino	one	65.4	80.0	82	12	50-150	40
Surrogate I CAS#	Recovery: Analyte		Sam Res	-	Spike Level	% Rec.	% Rec. Limits
TBD	D5-6PPD-quinone		25.	.5	80.0	32	20-200

Myrna Mandjíkov

7/19/2023

Release Date:

Appendix A **Sample Correlation Table**

Batch ID: B23G029 **Prep Method:** SW3535A

Prepared: 7/10/2023 **Analysis Method:** SOP730136

Field ID	MEL ID
DUPE_1	2306047-01
DUPE_2	2306047-02
DUPE_3	2306047-03
DUPE_4	2306047-04
DUPE_5	2306047-05
DUPE_6	2306047-06
DUPE_7	2306047-07
DUPE_8	2306047-08
DUPE_9	2306047-09
DUPE_10	2306047-10
Method Blank	B23G029-BLK1
LCS	B23G029-BS1
LCS Dup	B23G029-BSD1

Appendix B **Manual Qualification Table**

WO: 2306047	Analysis:	
WO: 2306047	Analysis:	

No manual qualifiers were added to the samples or batch QC.

Appendix C Data Qualifier Definitions

Code Definition

- E Reported result is an estimate because it exceeds the calibration range.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- NAF Not analyzed for.
- NC Not calculated.
- REJ The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- U The analyte was not detected at or above the reported sample quantitation limit.
- UJ The analyte was not detected at or above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte in the sample.
- The analyte was present in the sample. (Visual aid to locate detected compounds on the bold analytical report.)

Appendix D **QC** Exceptions Report

Lab ID Exception Analyte

No QC exceptions reported.

Appendix E Initial Calibration Exceptions Report

Calibration ID: B3G1201 Analysis: 6PPDQ

LabNumber Analyte QC Exception

No ICAL exceptions.



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: July 13, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, June 18, 2023

Stormwater samples were collected by Herrera Environmental Consultants on June 18, 2023. The samples were delivered to the King County Environmental Laboratory on June 20, 2023. The samples were given lab ID numbers L81564-1 and -2. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200
Locator: STTC-G2
Descrip: STTC central gravi
Sample: L81564-1
Matrix: LG STORM WTR
ColDate: 6/18/23 11:25

Project: 421520-200
Locator: STTC-G2
Descrip: STTC central gravi
Sample: L81564-2
Matrix: LG STORM WTR
ColDate: 6/18/23 16:34

WET Weight Basis

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	1.77		0.002	0.01	ug/L	1.3		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

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LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L			
STTC-G2	421520-200	L81564-1	6/18/2023 11:25	1.77			
STTC-G2	421520-200	L81564-2	6/18/2023 16:34	1.3			

King County Environmental Laboratory Batch Report

WG188630 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81564-1	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 11:25	6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	-
		Research						6	
L81564-2	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	6/18/2023 16:34	6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	-
		Research						6	
WG188630-1	MB		AQ6PPDQ-LCMS	BLANK WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	-
								6	
WG188630-2	SB		AQ6PPDQ-LCMS	BLANK WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	- WG188630-1
								6	
WG188630-3	MS		AQ6PPDQ-LCMS	STORM WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	- L81564-2
								6	
WG188630-4	MSD		AQ6PPDQ-LCMS	STORM WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	- WG188630-3 L81564-2
								6	
WG188630-5	LD		AQ6PPDQ-LCMS	STORM WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	- L81564-1
								6	
WG188630-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		6/24/2023 12:00	6/25/2023 10:00	WG188630-1,-2,-3,-4,-5,	-
								6	

King County Environmental Laboratory QC Report

Workgroup: WG188630 6PPDQ by LCMS

MB:WG188630-1 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG188630-2 MB:WG188630-1 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.229 115 50--150

MSD:WG188630-4 MS:WG188630-3 L81564-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual **Lab Limit** MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 1.3 0.2 1.58 139 50--150 0.2 1.57 134 1 0--45 6ppd-quinone

LD:WG188630-5 L81564-1 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L1.771.7910--40

CCC:WG188630-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 0.979
 98
 80--120

d5-6PPDQ Surrogate: (Lab Limits) 20--200 L81564-1 56 63 L81564-2 WG188630-1 70 WG188630-2 70 WG188630-3 63 WG188630-4 64 WG188630-5 56 91 WG188630-6

Login: P81564 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC - Event 1

FSU TC: LPM: Meghan Elkey

CHAIN OF CUSTODY										
e e e e e e e e e e e e e e e e e e e	Relinquished by	- Carlotte Control of the Control of	Date 19,2023	·	Time 1250 (FEDEX)					
e de la composition de la composition La composition de la composition de la La composition de la composition della comp	Received by		Date 6-20-2 3	>	Time 9:10					
	Sample Numbers	*.		[All]						
Sample Number	P81564-1		P81564-2		2000220022 - 2004 S 10-5					
QC Link		AND SOCIOLO CONTROLINA DE MANTE DE CONTROLINA DE CONTROLIN			A STATE OF THE STA					
Locator	STTC-G2	Carrier (1975) - Carrier Carrier Carrier (1975) - Carrier Carrier (1975) - Carrier Carrier (1975) - Carrier	STTC-G2							
Short Loc Desc										
Locator Desc	STTC central gravity lir	ne	STTC central gravity line							
Site	OTHER CITIES		OTHER CITIES							
Comments	First grab		Second grab							
Start Date/Time	June 18,2023	1125	16	34						
End Date/Time										
Time Span				,						
Sample Depth										
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)		4 LG 6PPDQ (43)	0.00 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A						

LIQUID SAMPLE RECEIPT RECORD

Login N	lumber(s): 8/5/64	7-1.2	Project No.: 42/	120-	200	Sub-Contracting: Y (N)	List Product(s):		
	Date(s): 0-18-6		Receive Date:	-200	3 04	Changes: VI N	List Parameter(s):		***************************************
100	3.2	SAMPLE RECEIPT					RVATION CHECKLIST (Circle and/or check	annlicable sele	ctions)
is constant to the	CONDITION AC	ceptable? Comment ID	CONDITION	Acceptable	e? Comment ID	PRODUCT / Preserva		Acceptable?	Corrective Action
Labels		MIN	Volumes	7// N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	□ Notify ORG
Contair	·····	IVIN	Holding Times	//Y// N		CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y / N	☐ Deliver to CONV
Tempe	rature (w/ ice)	/ N / NA	Delivery Location	V/N		NO23 pH < 2 W/ H ₂ SO ₄	☐ Check pH	Y / N / NA	Preserve by SM
	вотті	E COUNT (#) AND DESCRIP	TION and SAMPLE NU	IMBERS	11	CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH		Y / Ni	☐ Deliver to CONV
#		Bottle Description:	Sample Numbers			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
40	0 mL clear vial (VOA):					O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	☐ Preserve by SM
60	0 mL clear glass (PHYTO):					PHYTOPLANKTON / Lugois	Visually inspect	Y/N	Deliver to MICRO
60	0 mL CWM HDPE:					TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y / N	Preserve By SM
12	25 mL AWM HDPE:					TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
1:	25 mL CNM HDPE:					TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV
12	25 mL CWM HDPE:					WDO / FIXED	Visually inspect	Y/N	☐ Deliver to CONV
13	25 mL GANM:					Other:			
12	25 mL GANM w/HCI					ROUTINE SM PRE	SERVATION CHECKLIST (Circle and/or ch	eck applicable	selections)
2	50 mL AWM HDPE:					PRODUCT / Preserva	ation SM Action	Acceptable?	Corrective Action
25	50 mL CWM HDPE:					Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄	₄ or NaOH √ field sheet for F. pH	Y / N	☐ Adjust pH
2:	50 mL CWM HDPE (MICRO):					HG-CVAA-L-Teflon (T / D) / pH < 2 w/ ULT	TRA HCi Preserve & deliver	NA	NA
\mathcal{A}^{2}	50 mL GAWM:					ICPMS/HG-CVAA-M(T/D)/pH<2w/U	JLTRA HNO ₃ Preserve & deliver	NA	NA
2	50 mL GAWM w/ H2SO4:					TOC / pH < 2 w/ HCl	☐ Preserve & deliver	NA	NA
31	00 mL WDO (8 hour HT):					Other:			
5	00 mL AWM HDPE:					Other;			
5	00 mL CWM HDPE:						ERENCE TEST (Circle and/or check applications)	able selections)	
5	00 mL CWM PP (MICRO):					Product / Interference (SM Actio	on) Positive Test?	Treated	Corrective Action
5	00 mL HDPE (METALS):					BNA / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
5	00 mL HDPE, double-bagged (i	METALS):				GN / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to CONV
5	00 mL Teflon (Hg):					CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y/N	☐ Deliver to CONV
	00 mL Teflon, double-bagged (METALS):				VOA / Chlorine (Check documentaion)	Y / N / not tested	Y/N	☐ Deliver to ORG
5	00 mL GANM / GAWM:					Other;			
-	00 mL Polystyrene Filtration Ur	nits (METALS):					HEADSPACE CHECK	The plant of the section	
	L AWM HDPE:					PRODUCT (SM Acti	ion) Check For	Acceptable?	Corrective Action
	L CWM HDPE:				······································	MICRO (Visually inspect)	Headspace (@ 1")	. Y / N	☐ Notify MICRO
\vdash	L CWM PP (MICRO):					TOTSULFIDE (Visually Inspect)	Headspace (< 1")	Y / N	☐ Notify CONV
-	L GANM:					VOA (Visually Inspect)	Zero headspace	Y / N	☐ Notify ORG
_	L GCWM:					WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify CONV
I	L GAWM w/ H ₂ SO ₄ :					Other:			
	L CWM HDPE:						ATION CHECKLIST (Circle and/or check a	100 -000-000000000000000000000000000000	
l lo	Other:			in the warmen at the con-	1-	Product (SM Actio		Field Blank	Corrective Action
		COMMENTS / NO	TIFICATIONS	and the second		ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentati	Y (within 15 min y / n) / N	Y/N	☐ Deliver to CONV
—						Dissolved Metals (Check Field Sheet)	1 (1100011 1 000)) 1 1 1 1 1 1	Y / N / NA	Deliver to CONV
 					<u>.</u>	DOC (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to METALS
 						DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA Y / N / NA	Deliver to CONV
						Other:	Y (within 15 min y / n) / N	TININA	☐ Deliver to CONV
<u> </u>						Other:			
						00107.			

CC:	AQUATOX	. 🗆	CONV	. 🗆	METALS	. 🗆	MICRO	. 🗆	ORG.	

1. Deliver dissolved Hg-CVAF samples to METALS for filtration. **NOTES**

2. Deliver double-bagged metals samples to METALS for preservation.

3.)Do not test philor preserved BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

JUN 20 '23 05:17



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: October 5, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, August 31, 2023

Stormwater samples were collected by Herrera Environmental Consultants on August 31, 2023. The samples were delivered to the King County Environmental Laboratory on September 1, 2023. The samples were given lab ID numbers L81565-1 and -2. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkry

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200
Locator: STTC-G2
Descrip: STTC central gravi
Sample: L81565-1
Matrix: LG STORM WTR
ColDate: 8/31/23 9:25

Project: 421520-200
Locator: STTC-G2
Descrip: STTC central gravi
Sample: L81565-2
Matrix: LG STORM WTR
ColDate: 8/31/23 11:57
WET Weight Basis

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	2.38		0.002	0.01	ug/L	1.62		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

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LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
STTC-G2	421520-200	L81565-1	8/31/2023 9:25	2.38
STTC-G2	421520-200	L81565-2	8/31/2023 11:57	1.62

King County Environmental Laboratory Batch Report

WG190254 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81565-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	8/31/2023 9:25	9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	-
L81565-2	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	8/31/2023 11:57	9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	-
102562.4	422040 400	Research		CTODA A MATE	0/25/2022 0 00	0/25/2022 0 00	0/25/2022 44.00	6	
L82562-1	422040-100	SWS Bioretention 6PPDC	AQ6PPDQ-LCMS	STORM WTR	9/25/2023 0:00	9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	-
WG190254-1	MB		AQ6PPDQ-LCMS	OTHR WTR		9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	-
WG190254-2	SB		AQ6PPDQ-LCMS	OTHR WTR		9/25/2023 8:00	9/25/2023 14:00	6 WG190254-1,-2,-3,-4,-5,	- WG190254-1
						., .,	., .,	6	
WG190254-3	MS		AQ6PPDQ-LCMS	STORM WTR		9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	- L81565-2
								6	
WG190254-4	MSD		AQ6PPDQ-LCMS	STORM WTR		9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	- WG190254-3 L81565-2
						. / /	. / /	6	
WG190254-5	LD		AQ6PPDQ-LCMS	STORM WTR		9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	- L81565-1
WC400354.6	666		4.0.500000 1.5045	OTUD WITD		0/25/2022 0 00	0/25/2022 44.00	6	MED
WG190254-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		9/25/2023 8:00	9/25/2023 14:00	WG190254-1,-2,-3,-4,-5,	- MED
								U	

King County Environmental Laboratory QC Report

Workgroup: WG190254 6PPDQ by LCMS

MB:WG190254-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG190254-2 MB:WG190254-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.242 121 50--150

MSD:WG190254-4 MS:WG190254-3 L81565-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 1.62 0.2 1.85 119 50--150 0.2 94 3 0--45 6ppd-quinone

LD:WG190254-5 L81565-1 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L2.382.4950--40

CCC:WG190254-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L10.9769880--120

d5-6PPDQ Surrogate: (Lab Limits) 20--200 L81565-1 47 L81565-2 62 L82562-1 71 WG190254-1 77 75 WG190254-2 WG190254-3 60 WG190254-4 58 45 WG190254-5 WG190254-6 79 Login: P81565 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC - Event 2

FSU TC: T. Clark (HEC)
LPM: Meghan Elkey

CHAIN OF CUSTODY

	CHAIN OF	CUSTODY	
	Relinquished by	Date 2023 -08-3	Time 1234
	Received by	Date 9/1/23	Time 918
	Sample Numbers		[All]
Sample Number	P81565-1	P81565-2	
QC Link Locator	STTC-G2	STTC-G2	
Short Loc Desc Locator Desc Site	STTC central gravity line OTHER CITIES	STTC central gravity line OTHER CITIES	
Comments	First grab	Second grab	
Start Date/Time	2023-08-31 0925	1157	and the second
End Date/Time		<u></u>	Market Company of the
Time Span	Files A Province Control of the Cont		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	COMMAND TO THE OFFICE AS A STATE OF THE SECOND

LIQUID SAMPLE RECEIPT RECORD

Login Number(s): 31565	Project No.: 421520-200	Sub-Contracting: Y N	List Product(s):						
Collect Date(s): 8 31123	Receive Date: 9/1/23	Changes: Y (N)	List Parameter(s):						
SAMPLE RECEIPT	CONDITIONS	<u> </u>	CKLIST (Circle and/or check	applicable sele	GLIONS)				
CONDITION Acceptable? Comment ID	CONDITION Acceptable? Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action				
Labels / Fieldsheets A/N	Volumes /Y N	BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	☐ Notify ORG				
Container /Y/ N	Holding Times /Y N	CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y / N	☐ Deliver to CONV				
Temperature (w/ ice)	Delivery Location // N	NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N / NA	☐ Preserve by SM				
	HIGH STICKAMBLE NUMBERS	CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√field sheet for pH	Y/N	☐ Deliver to CONV				
# Bottle Description:		ICP / HG-CVAA-M / pH < 2 w/ HNO₃	☐ Check pH	Y/N	☐ Preserve By SM				
40 mL clear vial (VOA):		O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	☐ Preserve by SM				
60 mL clear glass (PHYTO):		PHYTOPLANKTON / Lugois	Visually inspect	Y/N	☐ Deliver to MICRO				
60 mL CWM HDPE:		TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y / N	Preserve By SM				
125 mL AWM HDPE:		TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	Preserve By SM				
125 mL CNM HDPE:		TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV				
125 mL CWM HDPE:		WDO / FIXED	Visually inspect	Y / N	☐ Deliver to CONV				
125 mL GANM:		Other:		an a photograph and a second					
125 mL GANM w/HCI		ROUTHNESMARES TRYALLON							
250 mL AWM HDPE:		PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action				
250 mL CWM HDPE:		Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	☐ Adjust pH				
250 mL CWM HDPE (MICRO):		HG-CVAA-L-Teflon (T/D)/pH < 2 w/ULTRA HCI	Preserve & deliver	NA	NA				
2 250 mL GAWM: -1, 2		ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO3	☐ Preserve & deliver	NA	NA				
250 mL GAWM w/ H2SO4:		TOC / pH < 2 w/ HCl	☐ Preserve & deliver	NA	NA				
300 mL WDO (8 hour HT):		Other:							
500 mL AWM HDPE:		Other:		fut singlise the second	roccostropinales estadimento de la constante d				
500 mL CWM HDPE:			(Circle and/or check applica		Comments				
500 mL CWM PP (MICRO):		Product / Interference (SM Action)	Positive Test?	<u>Treated</u>	Corrective Action				
500 mL HDPE (METALS):		BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG				
500 mL HDPE, double-bagged (METALS):		CN / Chlorine (Check documentation)	Y / N / not tested	Y / N	Deliver to CONV				
500 mL Teflon (Hg):		CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y / N	Deliver to CONV				
500 mL Teflon, double-bagged (METALS):		VOA / Chlorine (Check documentaion)	Y / N / not tested	Y / N	Deliver to ORG				
500 mL GANM / GAWM:	<u> </u>	Other:	141441633443-8361-332		a de la composiçõe de la c				
500 mL Polystyrene Filtration Units (METALS):		PRODUCT (SM Action)	HEADSRACE CHECK	Acceptable?	Corrective Action				
1L AWM HDPE:		PRODUCT (SM ACTION) MICRO (Visually inspect)	Check For Headspace (@ 1")	Y / N					
1L CWM HDPE:	·	MICRO (Visually inspect) TOTSULFIDE (Visually inspect)	Headspace (@ 1")	Y / N	Notify MICRO				
1L CWM PP (MICRO):		VOA (Visually inspect)	Zero headspace	Y / N	□ Notify CONV □ Notify ORG				
1L GANM:		WDO (Visually inspect)	Zero neadspace	Y / N	☐ Notify ORG				
1L GOWM:		Other:	Zero neguspace		- NORNY CONV				
1L GAWM w/ H₂SO₄:			(upside) and a second contract of	nicable select	ดาร์				
2L CWM HDPE:		Product (SM Action)	Field Filtered	Field Blank	Corrective Action				
Other:	THONONE	ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N	Deliver to CONV				
	The state of the second and the seco	NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	☐ Deliver to CONV				
		Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to METALS				
		DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N/NA	☐ Deliver to CONV				
		DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV				
		Other:							
		Other:							

CC: 🔲 AQUATOX, 🗀 CONV, 🗀 METALS, 🗀 MICRO, 🗀 (

NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
- 2. Deliver double-bagged metals samples to METALS for preservation.
- 3. Do not test pH for preserved BNA and TOTSULFIDE samples.
- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

Date / Time Completed:

FPOT PHONIS



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: November 2, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, October 24, 2023

Stormwater samples were collected by Herrera Environmental Consultants on October 24, 2023. The samples were delivered to the King County Environmental Laboratory on October 25, 2023. The samples were given lab ID numbers L81678-5, -6, -11, -12, and -13. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200
Locator: SCTF-TB1-IN
Descrip: SCTF-TB1 upstream
Sample: L81678-5
Matrix: LG STORM WTR

ColDate: 10/24/23 18:15

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB1-OUT Descrip: SCTF-TB1 downstrea

 Sample:
 L81678-6

 Matrix:
 LG STORM WTR

 ColDate:
 10/24/23 18:15

WET Weight Basis

Locator: SCTF-TB1-IN
Descrip: SCTF-TB1 upstream
Sample: L81678-11
Matrix: LG STORM WTR
ColDate: 10/24/23 19:44

421520-200

WET Weight Basis

Project:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual N	IDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.996	0.	.002	0.01	ug/L	0.303		0.002	0.01	ug/L	1.07		0.002	0.01	ug/L

Project: 421520-200
Locator: SCTF-TB1-OUT
Descrip: SCTF-TB1 downstrea
Sample: L81678-12
Matrix: LG STORM WTR

ColDate: 10/24/23 19:45

WET Weight Basis

Project: 421520-200
Locator: FIELDDUP
Descrip: FIELD DUPLICATE
Sample: L81678-13
Matrix: LG STORM WTR
ColDate: 10/24/23 18:15

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.212		0.002	0.01	ug/L	1.07		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB1-IN	421520-200	L81678-5	10/24/2023 18:15	0.996
SCTF-TB1-OUT	421520-200	L81678-6	10/24/2023 18:15	0.303
SCTF-TB1-IN	421520-200	L81678-11	10/24/2023 19:44	1.07
SCTF-TB1-OUT	421520-200	L81678-12	10/24/2023 19:45	0.212
FIELDDUP	421520-200	L81678-13	10/24/2023 18:15	1.07
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG190941 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81678-5	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	10/24/2023 18:15	10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
		Research						6	
L81678-6	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	10/24/2023 18:15	10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
		Research						6	
L81678-11	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	10/24/2023 19:44	10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
		Research						6	
L81678-12	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	10/24/2023 19:45	10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
		Research						6	
L81678-13	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	10/24/2023 18:15	10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
		Research						6	
WG190941-1	MB		AQ6PPDQ-LCMS	OTHR WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	-
								6	
WG190941-2	SB		AQ6PPDQ-LCMS	OTHR WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	- WG190941-1
								6	
WG190941-3	MS		AQ6PPDQ-LCMS	STORM WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	- L81678-6
								6	
WG190941-4	MSD		AQ6PPDQ-LCMS	STORM WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	- WG190941-3 L81678-6
								6	
WG190941-5	LD		AQ6PPDQ-LCMS	STORM WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	- L81678-11
								6	
WG190941-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		10/31/2023 9:00	10/31/2023 12:00	WG190941-1,-2,-3,-4,-5,	- MED
						• •	• •	6	

King County Environmental Laboratory QC Report

Workgroup: WG190941 6PPDQ by LCMS

MB:WG190941-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

6ppd-quinone

Parameter MDL RDL Units MB Value Qual 0.002 0.01 ug/L <MDL 6ppd-quinone

SB:WG190941-2 MB:WG190941-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.228 114 50--150

MSD:WG190941-4 MS:WG190941-3 L81678-6 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

1

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.303 0.2 0.543 120 50--150 0.2 0.525 111 3 0--45 6ppd-quinone

LD:WG190941-5 L81678-11 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL **Units SAMP Value LD Value** RPD **Qual Lab Limit** 6ppd-quinone 0.002 0.01 ug/L 1.07 1.06 1 0--40

CCC:WG190941-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

0.05

Parameter MDL RDL Units True Value CCC Value % Rec. **Qual Lab Limit** 0.01 ug/L 1.02 102 80--120

d5-6PPDQ Surrogate: (Lab Limits) 20--200 L81678-5 81 83 L81678-6 L81678-11 79 L81678-12 81 75 L81678-13 WG190941-1 76 WG190941-2 88 WG190941-3 82 WG190941-4 82 WG190941-5 74 WG190941-6 96

All locators are TB1 not TB4. See attached e-mail. ME 11/2/23

Scott Shumway 10/25/23 12:01

Du Nyry2 10/25/23 12:01

Sarryph Nighton 11,12,13

ogin: P81678	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 3	FSU TC:
'roject: 421520-200		P81678-11	P81678-12
Sample Number	P81678-10	TBI	TB1
QC Link	and the second s		SCTF-TB4-OUT
Locator	SCTF-TB25-OUT	SCTF-TB4-IN	
Short Loc Desa	The second secon	Andrew Control of the	
Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location
Site	N-5TAPE	I-5TAPE	I-5TAPE
Comments	Second grab	Second grab	Second grab
Start Date/Time		10/24/23 19:44	10/24/23 19:45
End Date/Time		N/A	N/A
Time Span		0	0
Sample Depth		energy dispersion tub	outlet pipe wein outfall
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43) Pipe	4 LG 6PPDQ (43)
- стуммунгу из поточентепнення нут мод диносовищими от 170		Sampled by Dylan A.	Sampled by Dylan A.

Login: P81678	WDOE BMP - Herrera 6PPDQ Add-On TAPE Event 3	FSU TC:
Project: 421520-200	·	LPM: Meghan Elkey
Sample Number	P81678-13	
QC Link	The Spiritual Laboratory (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990), and the Control and Michael 1990 (Control and Michael 1990).	annakarangan kan angan-ak sina 1985 si mini panga baha di daman kantilah kan 1995 di daman di dalam baham baha
Locator	FIELDDUP	
Short Loc Desc		and the second s
Locator Desc	FIELD DUPLICATE	
Site	FLDQC	
Comments	sampled inlet, done at sample	
Start Date/Time	10/24/23 18:15	
End Date/Time	N/A	
Time Span	A state of the control and the state of the control	
Sample Depth	energy dispension tob	
Dept, Matrix, Prod	4 LG 6PPDQ (43)	

Sampled by Scott S

Elkey, Meghan

From: Tim Clark <a href="mailt

To: Elkey, Meghan

Subject: Re: SCTF 10/24 6PPDQ sample question

Follow Up Flag: Follow up Flag Status: Flagged

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning, Meghan.

Please use the Locator SCTF-TB1 for these samples.

I have advised that field staff to modify the COC of there are any adjustments to the sample information. Especially since the bottle labels can be smudged.

Sorry for any confusion,

Clark

Get Outlook for Android

From: Elkey, Meghan Meghan.Elkey@kingcounty.gov

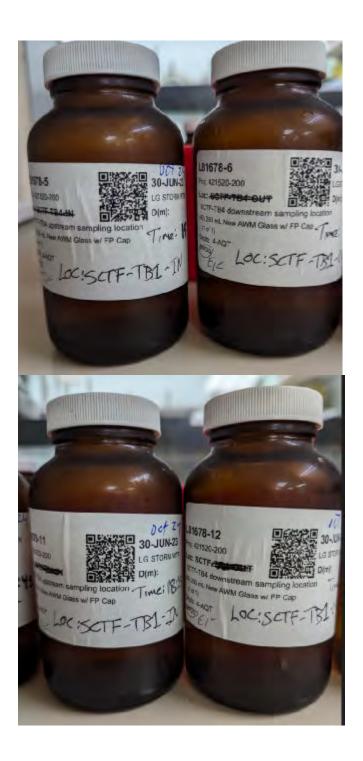
Sent: Thursday, November 2, 2023 8:32:54 AM

To: Tim Clark <a href="mailto:

Hi Clark,

There seems to be a discrepancy for the locators between the labels and field sheets for the SCTF 6PPDQ samples collected on 10/24. The labels have a handwritten locator of SCTF-TB1-IN and -OUT while the paperwork says SCTF-TB4-IN and -OUT.

Paperwork is attached, and here are the pics of the labels:



Please advise on which locator to assign to these samples.

Thank you,

Meghan Elkey (she/her/hers)
Laboratory Project Manager
King County Environmental Lab
322 W Ewing Street, Seattle, WA 98119
meghan.elkey@kingcounty.gov
(206) 477-7154

LIQUID SAMPLE RECEIPT RECORD

.ogin	Number(s): 4 10 48		•	Project No.:			·	Sub-Contracting: Y (N)	List Product(s):		
	t Date(s): (() つべ	23		Receive Date:	10 25	123		Changes: Y /(Ñ)	List Parameter(s):		
	4. 4. 5. 4. 4. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	S	AMPLE RECEIRT	CONDITIONS				HE CHRESERVATIONISH	IECKLIST (Circle and/or sheck	applicable sele	ctions)
	CONDITION	Acceptable?	Comment ID	CONDIT	ION A	cceptable?	Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
abels	s / Fieldsheets	/Y/ N		Volumes		MY N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ fleid sheet for F. pH	Y / N	☐ Notify ORG
onta		YIN		Holding Times		YN		CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
emp	erature (w/ ice)	Y /N/NA		Delivery Location		\Y∕I N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / Ņ / NA	Preserve by SM
	801		#) AND DESCRIP			ERS		CR(VI) / TOTCR(VI) / pH 9,3 - 9,7 w/ NaOH w/in 15 min	√ field sheet for pH	Y / N	☐ Deliver to CONV
#	www.	Bo	ottle Description:	Sample Num	<u>bers</u>			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y/N	Preserve By SM
	40 mL clear vial (VOA):							O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	☐ Preserve by SM
	60 mL clear glass (PHYTO):							PHYTOPLANKTON / Lugels	Visually inspect	Y / N	☐ Deliver to MICRO
	60 mL CWM HDPE:							TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N	☐ Preserve By SM
_	125 mL AWM HDPE:							TOC / pH < 2 w/ HCI (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
	125 mL CNM HDPE:							TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV
	125 mL CWM HDPE:							WDO / FIXED	Visually inspect	Y / N	☐ Deliver to CONV
 ł	125 mL GANM:							Other:			
	125 mL GANM w/HCI								I CHECKLIST (Circle and/or ch	eck applicable :	
	250 mL AWM HDPE:							PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:							Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH .	Y/N	☐ Adjust pH
	250 mL CWM HDPE (MICRO							HG-CVAA-L-Tefion (T / D) / pH < 2 w/ ULTRA HC	Preserve & deliver	NA NA	NA
	250 mL GAWM w/112907.	5,6,11-	15					ICPMS (T/D)/pH < 2 w/ULTRA HNO ₃	Preserve & deliver	NA NA	NA
	300 mL WDO (8 hour HT):			•				10C / pH < 2 w/ HCl	Preserve & deliver	NA	NA
	500 mL AWM HDPE:							Other:	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	***************************************	
	500 mL CWM HDPE:								ST (Circle and/or check applica	ible selections)	
	500 mL CWM HDPE: 500 mL CWM PP (MICRO):							Product / Interference (SM Action)	ST (Circle and/or check applica <u>Positive Test?</u>	Treated	Corrective Action
	<u> </u>							Product / Interference (SM Action) BNA / Chlorine (Check documentation)			Corrective Action Deliver to ORG
	500 mL CWM PP (MICRO):	d (METALS):						Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation)	Positive Test? Y / N / not tested Y / N / not tested	Treated Y/N Y/N	
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS):	d (METALS):						Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested	Treated Y/N Y/N Y/N	☐ Deliver to ORG
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge							Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation)	Positive Test? Y / N / not tested Y / N / not tested	Treated Y/N Y/N	☐ Deliver to ORG ☐ Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg):							Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested	Treated Y/N Y/N Y/N	□ Deliver to ORG □ Deliver to CONV □ Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration	d (METALS):	:					Product / Interference (SM Action) 8NA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other:	Positive Test? Y / N / not tested HEADSPAGE CHECK	Treated Y/N Y/N Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE:	d (METALS):	:					Product / Interference (SM Action) 8NA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For	Treated Y / N Y / N Y / N Y / N Y / N Acceptable?	□ Deliver to ORG □ Deliver to CONV □ Deliver to CONV □ Deliver to ORG Corrective Action
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1£ AWM HDPE:	d (METALS):	:					Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1")	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE:	d (METALS):	:					Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For	Treated Y/N Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM:	d (METALS):	:					Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace	Treated Y/N Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM:	d (METALS):	:					Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect) VOA (Visually inspect) WDO (Visually inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1") Headspace (< 1")	Treated Y/N Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1 L AWM HDPE: 1 L CWM HDPE: 1 L CWM PP (MICRO): 1 L GANM: 1 L GCWM: 1 L GAWM w/ H ₂ SO ₄ :	d (METALS):						Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chiorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other:	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y/N Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS):						Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chiorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Notify CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1 L AWM HDPE: 1 L CWM HDPE: 1 L CWM PP (MICRO): 1 L GANM: 1 L GCWM: 1 L GAWM w/ H ₂ SO ₄ :	d (METALS): Units (METALS):						Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chilorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Field Blank	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):	SOMMENISANO	TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chiorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (© 1") Headspace (< 1") Zero headspace Zero headspace CKLIST (Circle and/or check ap Field Filtered Y (within 15 min y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Field Blank Y/N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Notify CONV ORS Corrective Action Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):		TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (VIsually Inspect) VOA (Visually Inspect) VOA (Visually Inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace CKLIST (Circle and/or check ap Field Filtered Y (within 15 min y / n) / N Y (within 1 day y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Plicable select Field Blank Y/N Y/N/NA	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV ORS Corrective Action Deliver to CONV Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):		TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually Inspect) TOTSULFIDE (Visually Inspect) VOA (Visually Inspect) WDO (Visually Inspect) Cither: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace (CKLIST (Circle and/or check ap Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV ORS Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):		TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) WDO (Visually inspect) FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace CKLIST (Circle and/or check applied Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y / N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):		TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) WDO (Visually inspect) Cither: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit) DCOD / CR(VI) (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace (CKLIST (Circle and/or check ap Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N Y / N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV ORS Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagge 500 mL Teflon (Hg): 500 mL Teflon, double-bagge 500 mL GANM / GAWM: 500 mL Polystyrene Filtration 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM W/ H ₂ SO ₄ : 2L CWM HDPE:	d (METALS): Units (METALS):		TIFICATIONS				Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) WDO (Visually inspect) FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace CKLIST (Circle and/or check applied Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y / N	Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Deliver to CONV

CC: □ AQUATOX, □ CONV, □ METALS, □ MICRO, □ ORG, □

1. Deliver dissolved Hg-CVAF samples to METALS for filtration.

2. Deliver double-bagged metals samples to METALS for preservation.

3. Do not test pH for preserved BNA and TOTSULFIDE samples.

4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.

5. Enter "Time Span" for composite samples during sample login.

6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

NOTES

11100

90Y 25 '28 12 '20



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: November 14, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, November 1, 2023

Stormwater samples were collected by Herrera Environmental Consultants on November 1, 2023. The samples were delivered to the King County Environmental Laboratory on November 2, 2023. The samples were given lab ID numbers L82372-3 to -6 and -9 to -13. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200 Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea L82372-3 Sample:

Matrix: LG STORM WTR ColDate: 11/1/23 21:15

WET Weight Basis

421520-200 Project: Locator: SCTF-TB25-OUT Descrip: SCTF-TB2.5 downstr

Sample: L82372-4 Matrix: LG STORM WTR ColDate: 11/1/23 21:16

WET Weight Basis

Sample: L82372-5 Matrix: LG STORM WTR ColDate: 11/1/23 21:20

421520-200

SCTF-TB1-IN

SCTF-TB1 upstream

WET Weight Basis

Project:

Locator:

Descrip:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.209		0.002	0.01	ug/L	0.194		0.002	0.01	ug/L	0.248		0.002	0.01	ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB1-OUT

 Descrip:
 SCTF-TB1 downstrea

 Sample:
 L82372-6

Matrix: LG STORM WTR ColDate: 11/1/23 21:20

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea

 Sample:
 L82372-9

 Matrix:
 LG STORM WTR

 ColDate:
 11/1/23 22:57

 WET Weight Basis

 Sample:
 L82372-10

 Matrix:
 LG STORM WTR

 ColDate:
 11/1/23 22:58

421520-200

SCTF-TB25-OUT

SCTF-TB2.5 downstr

WET Weight Basis

Project:

Locator:

Descrip:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-guinone	0.0083	<rdl< td=""><td>0.002</td><td>0.01</td><td>ua/L</td><td>0.726</td><td></td><td>0.002</td><td>0.01</td><td>ua/L</td><td>0.596</td><td></td><td>0.002</td><td>0.01</td><td>ua/L</td></rdl<>	0.002	0.01	ua/L	0.726		0.002	0.01	ua/L	0.596		0.002	0.01	ua/L

Project: 421520-200 Locator: SCTF-TB1-IN Descrip: SCTF-TB1 upstream Sample: L82372-11 Matrix: LG STORM WTR

11/1/23 22:55 ColDate:

WET Weight Basis

421520-200 Project: SCTF-TB1-OUT Locator: Descrip: SCTF-TB1 downstrea

Sample: L82372-12 Matrix: LG STORM WTR ColDate: 11/1/23 22:56

WET Weight Basis

Project: 421520-200 Locator: FIELDDUP FIELD DUPLICATE Descrip:

Sample: L82372-13 Matrix: LG STORM WTR ColDate: 11/1/23 21:15

WET Weight Basis

				Oual			
DI.	וחח	l lmita	Value	0	MDI	וחם	

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.713		0.002	0.01	ug/L	0.018		0.002	0.01	ug/L	0.211		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

)
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB25-IN	421520-200	L82372-3	11/1/2023 21:15	0.209
SCTF-TB25-OUT	421520-200	L82372-4	11/1/2023 21:16	0.194
SCTF-TB1-IN	421520-200	L82372-5	11/1/2023 21:20	0.248
SCTF-TB1-OUT	421520-200	L82372-6	11/1/2023 21:20	0.0083
SCTF-TB25-IN	421520-200	L82372-9	11/1/2023 22:57	0.726
SCTF-TB25-OUT	421520-200	L82372-10	11/1/2023 22:58	0.596
SCTF-TB1-IN	421520-200	L82372-11	11/1/2023 22:55	0.713
SCTF-TB1-OUT	421520-200	L82372-12	11/1/2023 22:56	0.018
FIELDDUP	421520-200	L82372-13	11/1/2023 21:15	0.211
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG191053 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82372-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 21:15	11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	-
L82372-4	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 21:16	11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	-
		Research						6	
L82372-5	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 21:20	11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	-
		Research						6	
L82372-6	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 21:20	11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	-
		Research						6	
L82372-13	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 21:15	11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	-
		Research						6	
WG191053-1	MB		AQ6PPDQ-LCMS	OTHR WTR		11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	_
								6	
WG191053-2	SB		AQ6PPDQ-LCMS	OTHR WTR		11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	- WG191053-1
						, ,,	, ,,	6	
WG191053-3	MS		AQ6PPDQ-LCMS	STORM WTR		11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	- 182372-6
***************************************	1415		AQUIT DQ ECIVIS	3101111111111		11, 0, 2023 0.00	11,0,2023 11.00	6	102372 0
WG191053-4	MSD		AQ6PPDQ-LCMS	STORM WTR		11/6/2023 8:00	11/6/2023 11:00		- WG191053-3 L82372-6
WG151055-4	IVISD		AQUIT DQ-LCIVIS	STORIVI WTR		11/0/2023 8.00	11/0/2023 11:00	6	- W0131033-3 L02372-0
WG191053-5	LD		AQ6PPDQ-LCMS	STORM WTR		11/6/2023 8:00	11/6/2023 11:00	· ·	102272 2
MG131023-2	LD		AQ6PPDQ-LCIVIS	STURIVI WTR		11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	- L023/2-3
						/ . /	/ . /	6	
WG191053-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		11/6/2023 8:00	11/6/2023 11:00	WG191053-1,-2,-3,-4,-5,	- MED
								6	

King County Environmental Laboratory Batch Report

WG191069 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82372-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 22:57	11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	
L82372-10	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 22:58	11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	
L82372-11	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 22:55	11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	
L82372-12	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/1/2023 22:56	11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	
WG191069-1	MB		AQ6PPDQ-LCMS	OTHR WTR		11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	
WG191069-2	SB		AQ6PPDQ-LCMS	OTHR WTR		11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	WG191069-1
WG191069-3	MS		AQ6PPDQ-LCMS	STORM WTR		11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	L82372-12
WG191069-4	MSD		AQ6PPDQ-LCMS	STORM WTR		11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	WG191069-3 L82372-12
WG191069-5	LD		AQ6PPDQ-LCMS	STORM WTR		11/7/2023 8:00	11/7/2023 11:00	WG191069-1,-2,-3,-4,-5,-	L82372-10
WG191069-6	ССС		AQ6PPDQ-LCMS	OTHR WTR		11/7/2023 8:00	11/7/2023 11:00	6 WG191069-1,-2,-3,-4,-5,-	
								6	

King County Environmental Laboratory QC Report

Workgroup: WG191053 6PPDQ by LCMS

MB:WG191053-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

6ppd-quinone

Parameter MDL RDL Units MB Value Qual 0.002 0.01 ug/L <MDL 6ppd-quinone

0.01

SB:WG191053-2 MB:WG191053-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.227 114 50--150

MSD:WG191053-4 MS:WG191053-3 L82372-6 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

1

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual **Lab Limit** MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.0083 0.2 0.231 111 50--150 0.2 0.229 110 1 6ppd-quinone 0--45

LD:WG191053-5 L82372-3 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL **Units SAMP Value LD Value** RPD **Qual Lab Limit** 6ppd-quinone 0.002 0.01 ug/L 0.209 0.218 4 0--40

CCC:WG191053-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

0.05

Parameter MDL RDL Units True Value CCC Value % Rec. **Qual Lab Limit** ug/L 1.02 102 80--120

d5-6PPDQ Surrogate: (Lab Limits) 20--200 L82372-3 83 75 L82372-4 L82372-5 77 L82372-6 80 77 L82372-13 WG191053-1 81 WG191053-2 80 WG191053-3 81 WG191053-4 82 76 WG191053-5 WG191053-6 99

King County Environmental Laboratory QC Report

Workgroup: WG191069 6PPDQ by LCMS

MB:WG191069-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG191069-2 MB:WG191069-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.221 111 50--150

MSD:WG191069-4 MS:WG191069-3 L82372-12 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.018 0.2 0.236 109 50--150 0.2 0.247 115 0--45 6ppd-quinone

LD:WG191069-5 L82372-10 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.5960.61840--40

CCC:WG191069-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L10.9879980--120

d5-6PPDQ
20200
77
71
75
89
81
77
84
85
64
103

_ogin: P82372 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On TAPE Event 5

FSU TC:	
I PM: Meghan Fikev	

CHAIN OF CUSTODY

	CHAIN OF	JUU / UD /						
	Relinquished by	Date 11/02/23	Time 12:38					
The second secon	Received by S	Date 11-2-23	Fime 1238					
	Sádople Nambers							
Sample Number	P82372-1	P82372-2	P82372-3					
QC Link								
Locator	SCVF-TB2-IN	SCTF-TB2-OUT	SCTF-TB25-IN					
Short Loc Desc								
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF-TB2.5 upstream sampling station					
Site	I-5TAPE	I-5TAPE	I-5TAPE					
Comments	First grab	First grab	First grab					
Start Date/Time			11/01/23 21:15					
End Date/Time			N/A					
Time Span			0					
Sample Depth			audfall pipe Into energy dispersion tab 4 LG GAPDQ (43)					
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4/LG 6PPDQ (43)	4 LG 6PPDQ (43)					

Sample Number	P82372-4	P82372-5	P82372-6
QC Link		SCIF-IB1-IN	SOTE TB4-OUT
Locator	SCTF-TB25-OUT	. 1923 C. C. Alberto, Chamilton, 1994, Comp. (P. C. Chamilton, 1994) C. C. C. Chamilton, C. C. C. C. Chamilton, C. C. C. Chamilton,	подавить под-можения подавить страть подавить подавить подавить подавить подавить подавить подавить подавить п
Short Loc Desc Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-#94 upstream sampling location	SCTF-TE downstream sampling location
Site	1-5TAPE	I-5TAPE	I-5TAPE
Comments	First grab	First grab	First grab
Start Date/Time	1/01/23 21:16	11/01/23 21:20	11/0/23 21:20
End Date/Time	N/A	N/A	N/A
Time Span	0,11	0	0, 0
Sample Depth	weir spilloven of outlet pipe	dispersion tub	weir spillover of autlet pipe 4 LG 6PPDQ (43)
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

.ogin: P82372	WDOE BMP - Herrera 6PPD	FSU TC:				
Project: 421520-200	***************************************		LPM: Meghan Elkey			
Sample Number	₽82372-7	P82372-8	P82372-9			
QC Link	and the second s		e politicata a record, property anticome. As a record of the anticompany of which distributions that the condition of the anticome of the anti			
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-TB25-IN			
Short Lec Desc						
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF-TB2.5 upstream sampling station			
Site	I-5TAPE	I-5TAPE	I-5TAPE			
Comments	Second grab	Second grab	Second grab			
Start Date/Time			11/01/23 22:57			
End Date/Time			N/A			
Time Span			0			
Sample Depth			antful pipe into energy			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LØ 6PPDQ (43)	4 LG 6PPDQ (43)			

.ogin: P82372	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 5	FSU TC: LPM: Meghan Elkey				
Project: 421520-20 Sample Number	P82372-10	P82372-11	P82372-12				
QC Link		SCTF-TB1-IN	SETF-TB1-OUT				
Locator	SCTF-TB25-OUT	SCIF-IBA-IX	90TF-TB4-OUT And the continuous and the continuous continuous continuous and the continu				
Short Lec Desc		184	T81				
Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-TB upstream sampling location	SCTF-TB4 downstream sampling location				
Site	I-5TAPE	I-5TAPE	I-5TAPE				
Comments	Second grab	Second grab	Second grab				
Start Date/Time	11/01/23 22:58	11/01/23 22:55	11/01/23 22:56				
End Date/Time	N/A	NA	N/A				
Time Span	0	6	0				
Sample Depth	weir spill-ver of	autifall pipe into ever aispussion tub 4 LG GRPDQ (43)	weir spillower of autlet pipe				
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)) J				
	Sampled by	3 ampled by	Sampled by				
	Dalon A	Dyan A	D. L. A				

ogin: P82372	ogin: P82372 WDOE BMP - Herrera 6PPDQ Add-On TAPE Event 5					FSU TC:				
Project: 421520-200	,,		LPM:	Meghan El	key	ann				
Sample Number	P82372-13		g	nananan mananan kananan da						
QC Link	The second secon	a milanda 1979 (1978) ka kalamadi dalam 1979 (1984) kada di Silli (1985) (1984) (1984) kada di milanda (1985) (1984) kada di Silli (1985) (1984) (1984) (1984) kada di	 			222,020,021,1229				
Locator	FIELDDUP	Chieffer (Control of the Control of	**************************************	> 5 Control of the Co	mentalis esta esta de la companya de	A				
Short Loc Desc										
Locator Desc	FIELD DUPLICATE	posso comunicamente de la proposición de la manda de la compansión de la manda de la compansión de la compan	<u> </u>							
Site	FLDQC	aksis olehini olunya, yak iyek isonan liilililila wasa isol islahalakika kasasasi islah olunya ila kasa ya sol amballalii.	dente (o.o.) we make	Manufacture of the property of the second se	ara apamananatati o tot mortilladar					
Comments	Field dup of SOTF-TB	15 IV	Mandada A Caranda Cara							
Start Date/Time	1/01/23 21:15				MINING, SANJENDONING, TILLINGS (STANS STANS ON THE STANS OF THE STANS ON THE STANS					
End Date/Time	N/A		Sport and a summarian	ANNUN ALVONO AMBALANGUN AN INGAA A CO	920028911111222282845950505555555555558888888888888	aana Horon oo kaan				
Time Span	0		And the second s							
Sample Depth	dispussion tub				and the second s					
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)									
- consideration and consequent an arrange and an arrange and are all and a second a	оминистичного принципального постоя принципального принципального странения принципального принц	<u> anno esta como al quanto anazona esta como antico antico a terresta antico a tito de tito de tito de tito de</u>	agarous mit dictase d	A TO GATE GATE THE CONTROL OF THE ALL PARTY HIS PARTY.	CLICANA LIPO, PAR PRINCIPAL AND					

LIQUID SAMPLE RECEIPT RECORD

EIGOID CAMILLE RECEIL I RECORD											
Logi	in Number(s): \$23	72-13-6	<u>,,9-13)</u>	Project No.: 4916	120-20	0	Sub-Contracting: Y	N/	List Product(s):		
Coll	ect Date(s): //~/ -	-23	,	Receive Date: 7	1-2-2	3	Changes: Y / N		List Parameter(s):		
			SAMPLE RECEIP	T CONDITIONS			FIE	LD PRESERVATION CHE	CKLIST (Circle and/or chec	k applicable selec	tions)
	CONDITION	Acceptable*	Comment ID	CONDITION	Acceptable?	Comment ID		CT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	els / Fieldsheets	//r / N		Volumes	YIN		BNA / pH 6 - 9 w/ H ₂ SO ₄ or	NaOH	√ fleid sheet for F. pH	Y/N	Notify ORG
Cont	tainer	//Y/ N		Holding Times	YIN		CN / pH > 12 w/ NaOH with	in 15 min	☐ Check pH	Y / N	Deliver to CONV
Tem	perature (w/ ice)	Y/I N/NA		Delivery Location	Y/N		NO23 pH < 2 w/ H ₂ SO ₄		☐ Check pH		Preserve by SM
		BOTTLE COUN	(#) AND DESCRI	PTION and SAMPLE N	UMBERS		CR(VI) / TOTCR(VI) / pH 9.	3 - 9,7 w/ NaOH w/in 15 min	√field sheet for pH		Deliver to CONV
#				: Sample Numbers			ICP / HG-CVAA-M / pH < 2		☐ Check pH		Preserve By SM
-	40 mL clear vial (VOA):	•					O&G / HEM / PHENOL / ph		Check documentation		Preserve by SM
	60 mL clear glass (PHY						PHYTOPLANKTON / Lugo		Visually Inspect	Y/N	Deliver to MICRO
	60 mL CWM HDPE:						TKN / COD pH < 2 w/ H ₂ St		☐ Check pH		
	125 mL AWM HDPE:						TOC / pH < 2 w/ HCI (NPDI				Preserve By SM
	125 ml., CNM HDPE:					***************************************	TOTSULFIDE / pH > 9 w/ N		Check pH Check documentation	Y / N	Preserve By SM
	125 mL CWM HDPE:			\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			WDO / FIXED	10011, 22010	Visually inspect		Deliver to CONV
	125 mL GANM:						Other:		visually inspect	Y/N	Deliver to CONV
	125 mL GANM w/HCI							NEWNERSONATION	ari-akiris akampanya	Territoria de la composição de la compos	
	250 mL AWM HDPE:	-							CHECKLIST (Circle and/or o		
							1	CT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:						Chlorinated Pesticides / p		√ fleid sheet for F. pH		Adjust pH
-0	250 mL CWM HDPE (M	2-/	3				HG-CVAA-L-Teffon (T/D		☐ Preserve & deliver		YA .
	250 mL GAWM;	" " " " " " " " " " "	/				 	D) / pH < 2 w/ ULTRA HNO ₃	Preserve & deliver		NA .
	250 mL GAWM w/ H2S0						TOC / pH < 2 w/ HCl		Preserve & deliver	NA I	YA .
	300 mL WDO (8 hour H	IT):					Other:				
	500 mL AWM HDPE:						Other:				
	500 mL CWM HDPE:		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·					l (Circle and/or check appli	cable selections)	
	500 mL CWM PP (MICE	RO):					Product / Interferent	ce (SM Action)	Positive Test?	<u>Treated</u>	Corrective Action
	500 mL HDPE (METALS	S):					BNA / Chlorine (Check doc	cumentation)	Y / N / not tested	Y / N	Deliver to ORG
	500 mL HDPE, double-t	bagged (METALS):					CN / Chlorine (Check docu	mentation)	Y / N / not tested	Y / N	Deliver to CONV
<u> </u>	500 mL Teflon (Hg):						CN / Sulfide (Check field st	heet for DF)	Y / N / not tested	Y / N	Deliver to CONV
	500 mL Teflon, double-l						VOA / Chlorine (Check doc	cumentaion)	Y / N / not tested	Y / N	Deliver to ORG
<u></u>	500 mL GANM / GAWM	A:					Other:				
	500 mL Polystyrene Filt	tration Units (METAL	.S):						HEADSPACE CHECK		
	1L AWM HDPE:						PRODU	JCT (SM Action)	Check For	Acceptable?	Corrective Action
	1L CWM HDPE:						MICRO (Visually inspect)		Headspace (@ 1")	Y/N	Notify MICRO
L	1L CWM PP (MICRO):						TOTSULFIDE (Visually ins	pect)	Headspace (< 1")	YIN	Notify CONV
	1L GANM;						VOA (Visually inspect)		Zero headspace	Y/N	Notify ORG
	1L GÇWM:						WDO (Visually inspect)		Zero headspace	Y/N	Notify CONV
	1L GAWM w/ H ₂ SO ₄ :						Other:				
	2L CWM HDPE:							IELD FILTRATION CHEC	CLIST (Circle and/or check	applicable selection	ins)
	Other:					***	Produ	ict (SM Action)	Field Filtered	Field Blank	Corrective Action
			COMMENTS / NO	TIFICATIONS			ORTHOP (Check Field She	eet)	Y (within 15 min y / n) / N	Y/N	Deliver to CONV
							NO2 / NO3 / NO23 / NH3 /	SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
							Dissolved Metals (Check	Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to METALS
							DOC (Deliver / Notify Unit)		Y (within 15 min or 1 day) / N	Y / N / NA	Deliver to CONV
							DCOD / CR(VI) (Deliver / N	łotify Unit)	Y (within 15 min y / n) / N	Y / N/NA	Deliver to CONV
							Other:				
							Other:				
	CC: □ AQUATOX,	CONV. II ME	TALS. (1) MICRO	□ ORG. □							
		······································									<u> </u>
	NOTES			es to METALS for filtration.			•	es ASAP to appropriate section		en i de americani de am	
	MOTES			ples to METALS for preser			pan" for composite sampl	- , -	ĒW.	W 02 '23 12	[D.L.
	1	3. Do not test p	hypor preserved BNA	and TOTSULFIDE samples	5	 Split algae samp 	le into 60 mL clear glass	if PHYTOQUAL is requested.			11

Date / Time Completed:

SM	Signatu	inc



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: November 14, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, November 6, 2023

Stormwater samples were collected by Herrera Environmental Consultants on November 6, 2023. The samples were delivered to the King County Environmental Laboratory on November 7, 2023. The samples were given lab ID numbers L82371-5 to -6 and -11 to -13. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200
Locator: SCTF-TB1-IN
Descrip: SCTF-TB1 upstream
Sample: L82371-5
Matrix: LG STORM WTR

ColDate: 11/6/23 13:05
WET Weight Basis

Project: 421520-200 Locator: SCTF-TB1-OUT Descrip: SCTF-TB1 downstrea

 Sample:
 L82371-6

 Matrix:
 LG STORM WTR

 ColDate:
 11/6/23 13:06

 WET Weight Basis

Locator: SCTF-TB1-IN
Descrip: SCTF-TB1 upstream
Sample: L82371-11
Matrix: LG STORM WTR
ColDate: 11/6/23 15:03

421520-200

WET Weight Basis

Project:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual I	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.782	0	0.002	0.01	ug/L	0.174		0.002	0.01	ug/L	1.3		0.002	0.01	ug/L

Project: 421520-200
Locator: SCTF-TB1-OUT
Descrip: SCTF-TB1 downstrea
Sample: L82371-12
Matrix: LG STORM WTR

ColDate: 11/6/23 15:04

WET Weight Basis

Project: 421520-200
Locator: FIELDDUP
Descrip: FIELD DUPLICATE

Sample: L82371-13
Matrix: LG STORM WTR
ColDate: 11/6/23 13:05

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.0722		0.002	0.01	ug/L	0.833		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

				•
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB1-IN	421520-200	L82371-5	11/6/2023 13:05	0.782
SCTF-TB1-OUT	421520-200	L82371-6	11/6/2023 13:06	0.174
SCTF-TB1-IN	421520-200	L82371-11	11/6/2023 15:03	1.3
SCTF-TB1-OUT	421520-200	L82371-12	11/6/2023 15:04	0.0722
FIELDDUP	421520-200	L82371-13	11/6/2023 13:05	0.833
* Not converted to dry weight basis	1			

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG191124 6PPDQ by LCMS

Sample L82371-5	Project 421520-200	Project Description WDOE Stormwater BMP	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 11/6/2023 13:05	Prep Date 11/8/2023 13:00	Anal Date 11/8/2023 15:30	QC Association WG191124-1,-2,-3,-4,-5,	Comments
L82371-6	421520-200	Research WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/6/2023 13:06	11/8/2023 13:00	11/8/2023 15:30	6 WG191124-1,-2,-3,-4,-5,	-
L82371-11	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/6/2023 15:03	11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	-
L82371-12	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/6/2023 15:04	11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	-
L82371-13	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/6/2023 13:05	11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	-
L82827-1	422040-100	SWS Bioretention 6PPDQ	AQ6PPDQ-LCMS	OTHR WTR	11/6/2023 0:00	11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	-
WG191124-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	-
WG191124-2	SB		AQ6PPDQ-LCMS	OTHR WTR		11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	- WG191124-1
WG191124-3	MS		AQ6PPDQ-LCMS	STORM WTR		11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	- L82371-6
WG191124-4	MSD		AQ6PPDQ-LCMS	STORM WTR		11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	- WG191124-3 L82371-6
WG191124-5	LD		AQ6PPDQ-LCMS	STORM WTR		11/8/2023 13:00	11/8/2023 15:30	WG191124-1,-2,-3,-4,-5,	- L82371-5
WG191124-6	ССС		AQ6PPDQ-LCMS	OTHR WTR		11/8/2023 13:00	11/8/2023 15:30	6 WG191124-1,-2,-3,-4,-5, 6	- MED

King County Environmental Laboratory QC Report

Workgroup: WG191124 6PPDQ by LCMS

MB:WG191124-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG191124-2 MB:WG191124-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

SB Value Parameter MDL RDL Units MB Value True Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.21 105 50--150

MSD:WG191124-4 MS:WG191124-3 L82371-6 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.174 0.2 0.41 118 50--150 0.2 0.398 112 3 0--45 6ppd-quinone

LD:WG191124-5 L82371-5 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

 Parameter
 MDL
 RDL
 Units SAMP Value
 LD Value
 RPD
 Qual Lab Limit

 6ppd-quinone
 0.002
 0.01
 ug/L
 0.782
 0.788
 1
 0--40

CCC:WG191124-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L10.9649680--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82371-5	74
L82371-6	87
L82371-11	70
L82371-12	83
L82371-13	65
L82827-1	92
WG191124-1	80
WG191124-2	83
WG191124-3	76
WG191124-4	78
WG191124-5	68
WG191124-6	100

_ogin: P82371

WDOE BMP - Herrera 6PPDQ Add-On TAPE Event 4

Project: 421520-200 **CHAIN OF CUSTODY** Time Date Relinquished by Time Date [AII] Sample Numbers P82371-3 P82371-2 P82371-1 Sample Number QC Link SCTF-TB25-IN SCTF-TB2-OUT SCTF-TB2-IN Locator Short Loc Desc SCTF-TB2.5 upstream sampling SCTF-TB2 downstream SCTF-TB2 upstream sampling Locator Desc station sampling station station I-5TAPE I-5TAPE Site I-5TAPE First grab First grab Comments First grab Start Date/Time End Date/Time Time Span Sample Depth 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod

(Cont ID)

Login: P82371 Project: 421520-200	WDOE BMP - Herrera 6PPE	OQ Add-On TAPE Event 4	FSU TC: LPM: Meghan Elkey		
Sample Number	R82371-4	P82371-5	P82371-6		
QC Link		SCIF-TRI-TV	SCTF-TB1-OUT		
Locator	SCTF-TB25-OUT	9 011-184-11	SCIF-TB4-OUT		
Short Loc Desc		<u> </u>	<u> 781</u>		
Locator Desc	SCTF-TB2.5 downstream sampling station	SCTF-Test upstream sampling location	SCTF-184 downstream sampling location		
Site	I-5TAPE	I-5TAPE	I-5TAPE		
Comments	First grab	First grab	First grab		
Start Date/Time		11/6/23 13:05	11/6/23 13:06		
End Date/Time		N/A	N/A		
Time Span		0	O		
Sample Depth		dispersion tub 30 4 LG 6PPDQ (43)	weir outfall of outlet pipe		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6P₱DQ (43)	4 LG 6PPDQ (43)		
the part of the all defendent produced and the set substitutions.		S ald bu	Sampled by		

_ogin: P82371 Project: 421520-200	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 4	LPM: Meghan Elkey
Sample Number	P82371-7	P82371-8	P82371-9
QC Link		100 May 100 Ma	The state of the s
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-TB25-IN
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTK-TB2.5 upstream sampling station
Site	I-5TAPE	I-5TAPE	I-5TAPE\
Comments	Second grab	Second grab	Second grab
Start Date/Time			
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

_ogin: P82371	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 4	FSUTC:					
Project: 421520-20	0		LPM: Meghan Elkey					
Sample Number	P82371-10	P82371-11	P82371-12					
QC Link		SCTF-TB1-IV	SCTF-TB1-OUT					
Locator	SCTF-TB25-OUT	SCTF-FB4-W	SCTP-TB4-00T					
Short Loc Desc		781	TB1					
Locator Desc	SCTF-TB2.5 downstream / sampling station	SCTF- TB4 upstream sampling location	SCTF- rs4- downstream sampling location					
Site	I-5TAPE	I-5TAPE	I-STAPE					
Comments	Second grab	Second grab	Second grab					
Start Date/Time		11/6/23 15:03	11/6/23 15:04					
End Date/Time		N/A	N/A					
Time Span		0	0					
Sample Depth		outfall pipe of energy dispersion tub 4 LG 6PPDQ (43)	weir outfall of outlet pipe					
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)					

Sampled by Scott 5

Sampled by Scott S

_ogin: P82371	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 4	F30 IV.
Project: 421520-200			LPM: Meghan Elkey
Sample Number	P82371-13		
QC Link		tudi (1914), p. 1904 makkilbad kalan (1914), p. 1004 makalbak mi (1814), p. 1004 makalbakan di (1814), p. 1004 makabakan di (1814), p. 1004 makabakan di (1814), p. 1004 makalbakan di (1814), p. 1004 makabakan di (1814), p	
Locator	FIELDDUP	Plantik, 1993, o. olombody militalis kilalishi milita kahilishi kilalishi ki	
Short Loc Desc			
Locator Desc	FIELD DUPLICATE		
Site	FLDQQ	enne en	Spring visition with the control of
Comments	Field dudicate of first		
Start Date/Time	11/6/23 13:05		
End Date/Time	N/A		
Time Span	0		
Sample Depth	autifall pipe of energy		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)		

Sampled by Scott S.

LIQUID SAMPLE RECEIPT RECORD

and the second s				<u></u>
Login Number(s): 82371-(5,6,11-13)	Project No.: 42/520-200	Sub-Contracting: Y / N	List Product(s):	d .
Collect Date(s): //-6-23	Receive Date: //- 7-2 3	Changes: Y / N	List Parameter(s):	
SAMPLE RECEIPT	r conditions	FIELD PRESERVATION C	HECKLIST (Circle and/or check	(applicable selections)
CONDITION Acceptable? Comment ID	CONDITION Acceptable? Comment		SM Action	Acceptable? Corrective Action
Labels / Fieldsheets /Y // N	Volumes /Y / N	BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N
Container / Y / N	Holding Times Y / N	CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y / N Deliver to CONV
Temperature (w/ ice)	Delivery Location / y / N	NO23 pH < 2 w/ H₂SO4	☐ Check pH	Y / N / NA Preserve by SM
BOTTLE COUNT (#) AND DESCRIP	PTION and SAMPLE NUMBERS	CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y / N Deliver to CONV
# Bottle Description:	: Sample Numbers	ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N Preserve By SM
40 mL clear vial (VOA);		O&G / HEM / PHENOL / pH < 2 w/ H/sO4	Check documentation	Y / N Preserve by SM
60 mL clear glass (PHYTO):		PHYTOPLANKTON / Lugois	Visually inspect	
60 mL CWM HDPE:		TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	
125 mL AWM HDPE:		TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	
125 mL CNM HDPE:	-	TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	
125 mL CWM HDPE:		WDO / FIXED	Visually inspect	
125 mL GANM:		Other:		Y / N Deliver to CONV
125 mL GANM w/HCI		ROUTINE SMIPRESERVATION		
250 mL AWM HDPE:		PRODUCT / Preservation		
250 mL CWM HDPE:			SM Action	Acceptable? Corrective Action
250 mL CWM HDPE (MICRO):		Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH HG-CVAA-L-Tarion (T / D) / pH < 2 w/ ULTRA HCI	√ field sheet for F. pH	Y / N
5 250 mL GAWM: 5 6 11-13			Preserve & deliver	NA NA
250 mL GAWM w/ H2SO4:		ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO ₃	Preserve & deliver	NA NA
300 mL WDO (8 hour HT):		TOC / pH < 2 w/ HCl	Preserve & deliver	NA NA
500 mL AWM HDPE:		Other:		
500 mL CWM HDPE:		· Other:		
			ST (Circle and/or check applic	able selections)
500 mL CWM PP (MICRO):		Product / Interference (SM Action)	Positive Test?	<u>Treated</u> <u>Corrective Action</u>
500 mL HDPE (METALS):		BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N Deliver to ORG
500 mL HDPE, double-bagged (METALS):		CN / Chlorine (Check documentation)	Y / N / not tested .	Y / N Deliver to CONV
500 mL Teflon (Hg);		CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y / N 🔲 Deliver to CONV
500 mL Tefion, double-bagged (METALS):		VOA / Chlorine (Check documentation)	Y / N / not tested	Y / N 🔲 Deliver to ORG
500 mL GANM / GAWM;		Other:		:
500 mL Polystyrene Filtration Units (METALS):			HEADSPACE CHECK	
1L AWM HDPE:		PRODUCT (SM Action)	Check For	Acceptable? Corrective Action
1L CWM HDPE:		MICRO (Visually inspect)	Headspace (@ 1")	Y / N Notify MICRO
1L CWM PP (MICRO):	·	TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y / N
1L GANM:		VOA (Visually inspect)	Zero headspace	Y / N D Notify ORG
1L GCWM:		WDO (Visually inspect)	Zero headspace	Y / N
1L GAWM w/ H₂SO₄:		Other:		A recting CONV
2L CWM HDPE;		FIELD EILTRATION CHE	CKLIST (Circle and/or check a	onlicable selections)
Other:		Product (SM Action)	Field Filtered	Field Blank Corrective Action
COMMENTS / NOT	TIFICATIONS	ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N Deliver to CONV
		NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA Deliver to CONV
	_	Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA Deliver to METALS
		DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA Deliver to CONV
		DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA Deliver to CONV
		Other:		□ Delivet to COMA
		Other: .		
CC: AQUATOX, CONV, METALS, MICRO, C	3 ORG 🗆			:
A D. S. A. D. MICKO, L.				

1.	Deliver dissolved	Hg-CVAF	sampi

NOTES

les to METALS for filtration.

4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.

5. Enter "Time Span" for composite samples during sample login.

6. Split algae sample into 60 ml, clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: December 1, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, November 21, 2023

Stormwater samples were collected by Herrera Environmental Consultants on November 21, 2023. The samples were delivered to the King County Environmental Laboratory on November 22, 2023. The samples were given lab ID numbers L81678-1 to -4, -7 to -10 and L82371-3, -4, -9 and -10. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

 Project:
 421520-200

 Locator:
 SCTF-TB2-IN

 Descrip:
 SCTF-TB2 upstream

 Sample:
 L81678-1

 Matrix:
 LG STORM WTR

ColDate: 11/21/23 20:30

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-OUT Descrip: SCTF-TB2 downstrea

 Sample:
 L81678-2

 Matrix:
 LG STORM WTR

 ColDate:
 11/21/23 20:30

WET Weight Basis

WET Weight Basis

421520-200

L81678-3

SCTF-TB1-IN

SCTF-TB1 upstream

LG STORM WTR

11/21/23 20:30

Project:

Locator:

Descrip:

Sample:

Matrix:

ColDate:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.603		0.002	0.01	ug/L	0.245		0.002	0.01	ug/L	0.631		0.002	0.01	ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB1-OUT

 Descrip:
 SCTF-TB1 downstrea

 Sample:
 L81678-4

Matrix: LG STORM WTR ColDate: 11/21/23 20:30

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-IN Descrip: SCTF-TB2 upstream

 Sample:
 L81678-7

 Matrix:
 LG STORM WTR

 ColDate:
 11/21/23 21:27

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-OUT Descrip: SCTF-TB2 downstrea

Sample: L81678-8

Matrix: LG STORM WTR

ColDate: 11/21/23 21:27

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.147		0.002	0.01	ug/L	0.701		0.002	0.01	ug/L	0.608		0.002	0.01	ug/L

421520-200

L81678-10

SCTF-TB1-OUT

LG STORM WTR

SCTF-TB1 downstrea

Project: 421520-200 Locator: SCTF-TB1-IN Descrip: SCTF-TB1 upstream L81678-9 Sample: Matrix: LG STORM WTR

ColDate: 11/21/23 21:25

WET Weight Basis

ColDate: 11/21/23 21:25 WET Weight Basis

ColDate: 11/21/23 20:30 WET Weight Basis

Project:

Locator:

Descrip:

Sample:

Matrix:

421520-200

L82371-3

SCTF-TB25-IN

SCTF-TB2.5 upstrea

LG STORM WTR

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.663		0.002	0.01	ug/L	0.269		0.002	0.01	ug/L	0.651		0.002	0.01	ug/L

Project:

Locator:

Descrip:

Sample:

Matrix:

 Project:
 421520-200

 Locator:
 SCTF-TB25-OUT

 Descrip:
 SCTF-TB2.5 downstr

 Sample:
 L82371-4

Matrix: LG STORM WTR ColDate: 11/21/23 20:30

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea

 Sample:
 L82371-9

 Matrix:
 LG STORM WTR

 ColDate:
 11/21/23 21:29

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-OUT Descrip: SCTF-TB2.5 downstr

Sample: L82371-10
Matrix: LG STORM WTR
ColDate: 11/21/23 21:29

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.23		0.002	0.01	ug/L	0.696		0.002	0.01	ug/L	0.589		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

				•
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB2-IN	421520-200	L81678-1	11/21/2023 20:30	0.603
SCTF-TB2-OUT	421520-200	L81678-2	11/21/2023 20:30	0.245
SCTF-TB1-IN	421520-200	L81678-3	11/21/2023 20:30	0.631
SCTF-TB1-OUT	421520-200	L81678-4	11/21/2023 20:30	0.147
SCTF-TB2-IN	421520-200	L81678-7	11/21/2023 21:27	0.701
SCTF-TB2-OUT	421520-200	L81678-8	11/21/2023 21:27	0.608
SCTF-TB1-IN	421520-200	L81678-9	11/21/2023 21:25	0.663
SCTF-TB1-OUT	421520-200	L81678-10	11/21/2023 21:25	0.269
SCTF-TB25-IN	421520-200	L82371-3	11/21/2023 20:30	0.651
SCTF-TB25-OUT	421520-200	L82371-4	11/21/2023 20:30	0.23
SCTF-TB25-IN	421520-200	L82371-9	11/21/2023 21:29	0.696
SCTF-TB25-OUT	421520-200	L82371-10	11/21/2023 21:29	0.589
* Not converted to dry weight basis				
ie i i i i i i i i i i i i i i i i i i	·			

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

WG191393 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L81678-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-3	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-4	421520-200	Research WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	6 WG191393-1,-2,-3,-4,-5,-	
L81678-7	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:27	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-8	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:27	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:25	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L81678-10	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:25	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L82371-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L82371-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 20:30	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L82371-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:29	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
L82371-10	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	11/21/2023 21:29	11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
WG191393-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	
WG191393-2	SB		AQ6PPDQ-LCMS	OTHR WTR		11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	WG191393-1
WG191393-3	MS		AQ6PPDQ-LCMS	STORM WTR		11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	L82371-10
WG191393-4	MSD		AQ6PPDQ-LCMS	STORM WTR		11/27/2023 8:30	11/27/2023 11:00		WG191393-3 L82371-10
WG191393-5	LD		AQ6PPDQ-LCMS	STORM WTR		11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	L82371-3
WG191393-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		11/27/2023 8:30	11/27/2023 11:00	WG191393-1,-2,-3,-4,-5,-	MED

King County Environmental Laboratory QC Report

WDOE BMP Stormwater Herrera, L81678 and L82371, November 21, 2023

Workgroup: WG191393 6PPDQ by LCMS

MB:WG191393-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG191393-2 MB:WG191393-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.215 108 50--150

MSD:WG191393-4 MS:WG191393-3 L82371-10 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.589 0.2 0.764 87 50--150 0.2 0.754 83 1 6ppd-quinone 0--45

LD:WG191393-5 L82371-3 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.6510.65710-40

CCC:WG191393-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.02
 102
 80--120

King County Environmental Laboratory QC Report

WDOE BMP Stormwater Herrera, L81678 and L82371, November 21, 2023

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L81678-1	75
L81678-2	78
L81678-3	72
L81678-4	79
L81678-7	73
L81678-8	72
L81678-9	69
L81678-10	76
L82371-3	73
L82371-4	75
L82371-9	67
L82371-10	71
WG191393-1	86
WG191393-2	82
WG191393-3	68
WG191393-4	73
WG191393-5	67
WG191393-6	91

.ogin: P81678 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On TAPE Event 3

FSU TC: LPM: Meghan Elkey

CHA	IN	OF	CUS	TOI	DY

	Q112 T.		
	Relinquished by Hirthalm Harmy	Date ጊያንን - \\ -ጊጊ	Time 09:10
	Received by	Date /	Time
	In Ill	11/22/23	7:10'
	Sample Numbers		[All]
Sample Number	P81678-1	P81678-2	P81678-3
QC Link		A CONTRACTOR OF THE CONTRACTOR	781
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-F BQ5 -IN
Short Loc Desc	AMA (SOL) (2) Solve to the content of the Content o	11,000	781
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF-1 92. 5 upstream sampling station
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	First grab	First grab	First grab
Start Date/Time	23-11-39221 20130		
End Date/Time	23-11-2221 20:30		
Time Span	0 mms -		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

x All samples	from "first grad	o" tallon @ 20	1:70 on 23-11-24-21
Sample Number T	P81678-4	P82371-3	P82371-4
QC Link			SOTF-TB25-OUT
hort Loc Desc	SCTF-TB1-OUT	3C11 1342 .	
-ocator Desc	SCTF-TB1 lown:	Mary Marshay	SCTF-TB25 downstream sampling station
Site	I-STAPE	I-STAPE	I-5 TAPE
omments	First grab	First Grab	First Grab
start Date/Time	1		7
ind Date/Time	23-11-板 20:50		
ime Span	0 mas	HLG 6PPDQ	4 LG 6 PPDQ
ept, Matrix, age 1 of 5 Prod,	4 LG GPPDQ	(213)	J (43)

ogin: P81678	WDOE BMP - Herrera 6PPD	Q Add-On TAPE Event 3	FSU TC:
roject: 421520-200			LPM: Meghan Elkey
Sample Number	P81678-7	P81678-8	P81678-9
QC Link	and the second s		781 series de la companya del companya de la companya del companya de la companya
ocator	SCTF-TB2-IN	SCTF-TB2-OUT	SCTF-TBA6-IN
Short Loc Desc			
.ocator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	SCTF- †B&5 upstream sampling station
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	Second grab	Second grab	Second grab
Start Date/Time	23-11-21 21:27	23-11-21 21.24	27-11-21 21:25
End Date/Time			
Гime Span	0		7
Sample Depth			
Dept, Matrix, Prod Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Sample Number	P81678-10	P82371-9	P82371-10
QC Link			
	SCTF-TB1-OUT	SCIF-TB25-IN	SOTF-TBUS-OUT
Short Loc Desc			
Locator Desc	SCTF-TBI lownstream	SCTF-TB25 upstream sampling station	SCTF-TB25 Lownstream sampling Station
	I-5 TAPE	I-5 TAPE	T-5 TAPE
Site Comments	second grab	second grab	second grab
Start Date/Time	TELEVISION OF THE PARTY OF THE	13-11-51 51:5	9 23-11-21 21229
End Date/Time		The state of the s	
Time Span	0 mb		
Dept. Matrix, Prod	4 LG 6 PPDQ (43)	4 L4 69906	1 4 6 PPDQ (43)
Page 3 of 5			

LIQUID SAMPLE RECEIPT RECORD

L a = '	Number of the All	<u>i</u>		n : (1) / (A) &	····) (** 1	.O.				List Product(s):		
	Number(s): 8 164	0		Project No.: 4915				Sub-Contracting: Y (I N				
Colle	ct Date(s): 1112-1123				122/2		~~~~	Changes: Y / N		List Parameter(s):		:
AR FEED			AMPLE RECEIPT	CONDITIONS		100		FIELD PRE	SERVATION CHEC	KLIST (Circle and/or check	applicable sej	ections)
		Acceptable?	Comment ID	CONDITION		table?	Comment ID	PRODUCT / Prese	ervation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets	/YYN		Volumes	K	N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH		√ field sheet for F. pH	Y/N	☐ Notify ORG
	ainer	/ Y/N		Holding Times	//Y	N		CN / pH > 12 w/ NaOH within 15 mln		☐ Check pH	Y/N	☐ Deliver to CONV
Tem	perature (w/ ice)	Y // N / NA		Delivery Location		/ N		NO23 pH < 2 w/ H ₂ SO ₄		Check pH	Y / N / NA	☐ Preserve by SM
4 2	BOT	tee count (#	f) AND DESCRIP	PITION and SAMPLE N	UMBERS			CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ Na	aOH w/in 15 min	√ field sheet for pH	Y/N	☐ Deliver to CONV
#		Bot	ttle Description:	Sample Numbers				ICP / HG-CVAA-M / pH < 2 w/ HNO ₃		☐ Check pH	Y/N	☐ Preserve By SM
	40 ml. clear vial (VOA):							O&G / HEM / PHENOL / pH < 2 w/ H ₂ S	;O₄	Check documentation	Y / N	Preserve by SM
	60 mL clear glass (PHYTO):							PHYTOPLANKTON / Lugols		Visually inspect	Y/N	☐ Deliver to MICRO
	60 mL CWM HDPE:							TKN / COD pH < 2 w/ H2SO4 within 15	min	☐ Check pH	Y/N	☐ Preserve By SM
	125 mL AWM HDPE:							TOC / pH < 2 w/ HCI (NPDES only)		☐ Check pH	Y/N	☐ Preserve By SM
	125 mL CNM HDPE:							TOTSULFIDE / pH > 9 w/ NaOH, ZnAc		Check documentation	. Y / N	☐ Deliver to CONV
	125 mL CWM HDPE:							WDO / FIXED		Visually inspect	Y / N	☐ Deliver to CONV
	125 mL GANM:							Other:			:	
	125 mL GANM w/HCI							ROUTINE SM F	RESERVATION C	HECKLIST (Circle and/or ch	ieck applicable	selections)
	250 mL AWM HDPE:							PRODUCT / Pres		SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:							Chlorinated Pesticides / pH 5 - 9 w/ H		√ fleid sheet for F. pH	Y / N	☐ Adjust pH
	250 mL CWM HDPE (MICRO)):						HG-CVAA-L-Terion (T/D)/pH<2w	·· ····	☐ Preserve & deliver	NA .	NA NA
\$	250 mL GAWM: - 4	7-10						ICPMS/HG-CVAA-M(T/D)/pH<2	. w/ ULTRA HNO₃	Preserve & deliver	NA	NA
C	250 mL GAWM w/ H2SO4;		-					TOC / pH < 2 w/ HCl		Preserve & deliver	NA	NA ·
	300 mL WDO (8 hour HT):						Other:		L. 11030170 & UCRYCI	:		
	500 mL AWM HDPE:		,		•			Other:				····
	500 mL CWM HDPE;							INTE	REERENGETEST	(Circle and/or check applie	ible selections	
	500 mL CWM PP (MICRO):	-						Product / Interference (SM A		Positive Test?	Treated	Corrective Action
	500 mL HDPE (METALS):							BNA / Chlorine (Check documentation)		Y / N / not tested	Y / N	
	500 mL HDPE, double-bagger	d (METALS):						CN / Chlorine (Check documentation)		Y / N / not tested	Y / N	Deliver to ORG
	500 mL Teflon (Hg):							CN / Sulfide (Check field sheet for DF)		Y / N / not tested	Y / N	☐ Deliver to CONV
	500 mL Tefion, double-bagge	d (MÉTALS):						VOA / Chlorine (Check documentation)		Y / N / not tested	Y / N	Deliver to CONV
	500 mL GANM / GAWM:							Other:		1 / W / HOC tested	1 / N	Deliver to ORG
	500 mL Polystyrene Filtration	Units (METALS):	·····						a apollo	HEADSPACE CHECK		
	1L AWM HDPE:							PRODUCT (SM.		Check For	Accomtoble	Carractive Action
	1L CWM HDPE:							MICRO (Visually inspect)	Actory		Acceptable?	Corrective Action
	1L CWM PP (MICRO):					· · · · · · · · · · · · · · · · · · ·		TOTSULFIDE (Visually inspect)		Headspace (@ 1")	Y / N Y / N	□ Notify MICRO
	1L GANM:							VOA (Visually inspect)		Headspace (< 1")		□ Notify CONV
	1L GCWM:							WDO (Visually Inspect)		Zero headspace	Y/N	□ Notify ORG
	1L GAWM w/ H ₂ SO ₄ :			····				Other;	1	Zero headspace	Y/N	☐ Notify CONV
	2L CWM HDPE:			······				MINISTER CONTRACTOR CO	TENTIONIEPIECE	us concentraces		
	Other:			,				Product (SM A	ction)	LIST (Circle and/or check a Field Filtered	Field Blank	Corrective Action
TOTAL SERVICE		Ci	OMMENTS / NO	TECATIONS				ORTHOP (Check Field Sheet)		Y (within 15 min y / a) / N	Y / N	··
er characteristics					14			NO2 / NO3 / NO23 / NH3 / Si (Docume	entation)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
								Dissolved Metals (Check Field Sheet)		Y (within 15 min y / n) / N	Y / N / NA	Deliver to CONV
•					***************************************			DOC (Deliver / Notify Unit)	*	Y (within 15 min or 1 day) / N	Y / N/NA	Deliver to METALS
								DCOD / CR(VI) (Deliver / Notify Unit)		Y (within 15 min y / n) / N	Y / N / NA	Deliver to CONV
								Other:		- (many readily ray in	1111111	☐ Deliver to CONV
		••••						Other:				
	CC: EL ADDATOY EL C	ONV O META	IS IS MICEO S	OPC C								
	CC: AQUATOX, C							n files				
		Deliver dissolver						and all MICEA complex ACAB to				

NOTES	Deliver double-bagged	metals samples to METALS	for preservation
	Do not test pH for pres	erved BNA and TOTSULFIDE	E samples. 📝
	Λ,	710	-0.11

- Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

Date / Time Completed: _______ #84 22 23 09:28

roject: 421520-200 LPM: Meghan Elkey

	CHAIN OF	CUSTODY	
	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	L82371-3	L82371-4	L82371-9
λC Link		All the first three the contract of the contra	en in the second of the second of the second
.ocator	SCTF-TB25-IN	SCTF-TB25-OUT	SCTF-TB25-IN
Short Loc Desc			
ocator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	SCTF-TB2.5 upstream sampling station
ite	I-5TAPE	I-5TAPE	I-STAPE
comments	First grab	First grab	second grab
Start Date/Time	11-21-2023 08:30 PM	11-21-2023 08:30 PM	11-21-2023 09:29 PM
ind Date/Time		alan da kawanda shi ka da	energamentana kan menggunan ara san kanananan akan ara keramanan a mengkah kan menananan samak sa ama amerin
ime Span			
ample Depth	ry de region (160 commence amount in a considerable audicide de décidio de décidio de décidio de la distribució de designado de la distribució de designado de la distribució de decidio de la distribució de decidio de la distribució de decidio de la distribució de	agan en mara mahaman et et spiran et en mahammah kitairan un mahammanan kahakitan kitai maka kitai dalambilika	
ept, Matrix, Prod Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

roject: 421520-20	0		LPM: Meghan Elkey
ample Number	L82371-10		
(C Link	 (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	ka shi alimur a guar karamul kurumili 2003 (1925), ku ki daka munakki 21.5 (1925), karar a pipat piragaya ya pipa pipagaya mu un numuri 24 ki 2003	
ocator	SCTF-TB25-OUT		
hort Loc Desc			
ocator Desc	SCTF-TB2.5 downstream		
	sampling station		A Bankara kan kan kan kan kan kan kan kan kan ka
ite	I-5TAPE		
comments	First grab		
tart Date/Time	11-21-2023 09:29 PM		
nd Date/Time			
	*Anthoroughan		
ime Span			
	doos ervos	W no name	
ample Depth			
ept, Matrix, Prod Cont ID)	4 LG 6PPDQ (43)		

LIQUID SAMPLE RECEIPT RECORD

Login Number(s): 42	137 -	Project No.: 421	520-200		Sub-Contracting: Y / N	List Product(s):	<u> </u>	
	1/23	Receive Date: //	1921/2 3		Changes: Y /N	List Parameter(s):		
		LE RECEIPT CONDITIONS			FIELD PRESERVATION CH			
CONDITION		omment ID CONDITION	Acceptable? C	omment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Labels / Fieldsheets	X/IN	Volumes	AV N	20mment ID	BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH		
Container	XIN	Holding Times	YIN	 -	CN / pH > 12 w/ NaOH within 15 min		Y / N	☐ Notify ORG
Temperature (w/ ice)	Y N/NA	Delivery Location	Y/ N		NO23 pH < 2 w/ H ₂ SQ ₄	☐ Check pH	Y/N	Deliver to CONV
16		ND DESCRIPTION and SAMPLE			CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	☐ Check pH √field sheet for pH	Y / N/NA	Preserve by SM
#		Description: Sample Numbers	HUMBERS				Y / N	☐ Deliver to CONV
40 mL clear vial (VOA	***************************************	Description. Sample Numbers			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
60 mL clear glass (PI	- 				O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	Preserve by SM
60 mL CWM HDPE:	1110).				PHYTOPLANKTON / Lugols	Visually inspect	Y/N	☐ Deliver to MiCRO
125 mL AWM HDPE:					TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N	Preserve By SM
125 mL CNM HDPE:					TOC / pH < 2 w/ HCI (NPDES only)	☐ Check pH	Y/N	Preserve By SM
					TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N - 1	☐ Deliver to CONV
125 mL CWM HDPE: 125 mL GANM:					WDO / FIXED	Visually Inspect	Y/N .	☐ Deliver to CONV
					Other:			
125 mL GANM w/HCI	<u> </u>				ROUTINE SM PRESERVATION		-	
250 mL AWM HDPE:					PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
250 mL CWM HDPE:		•			Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y/N	☐ Adjust pH
250 mL CWM HDPE					HG-CVAA-L-Tefion (T/D)/pH<2w/ULTRAHCI	Preserve & deliver	NA	NA
¥ 250 mL GAWM: <u>ス</u>	, 4, 9,10				ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO ₃	Preserve & deliver	NA	NA
250 mL GAWM w/ H2					TOC / pH < 2 w/ HCi	Preserve & deliver	NA	NA
300 mL WDO (8 hour	r HT):				Other:			
500 mL AWM HDPE:			·		Other:		1	
500 mL CWM HDPE:					INTERFERENCE TE	ST (Circle and/or check applic	able selections	Price Co. Called A. Called
500 mL CWM PP (MI	CRO);				Product / Interference (SM Action)	Positive Test?	<u>Treated</u>	Corrective Action
500 mL HDPE (META	ALS):				BNA / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
500 mL HDPE, doubl	e-bagged (METALS):				CN / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to CONV
500 mL Teflon (Hg):		•			CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y/N	☐ Deliver to CONV
500 mL Teflon, doubi	ie-bagged (METALS):				VOA / Chlorine (Check documentaion)	Y / N / not tested	Y/N	☐ Deliver to ORG
500 mL GANM / GAV	VM:				Other:	-	-	7
500 mL Polystyrene F	Filtration Units (METALS):			•	The grades of the second of the second of the second	HEADSPACE CHECK		
1L AWM HDPE:					PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
1L CWM HDPE:					MICRO (Visually inspect)	Headspace (@ 1")	Y / N	□ Notify MICRO
1L CWM PP (MICRO):				TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y/N	☐ Notify CONV
1L GANM:				* '	VOA (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG
1L GCWM:					WDO (Visually inspect)	Zero headspace	Y / N	☐ Notify CONV
1L GAWM w/ H ₂ SO ₄ :					Other:		- /	TO MORE A COMA
2L CWM HDPE:						KLIST (Circle and/or check a	onlicable select	ions)
Other:					Product (SM Action)	Field Filtered	Field Blank	Corrective Action
	COM	MENTS / NOTIFICATIONS			ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y/N	☐ Deliver to CONV
				1000	NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N/NA	☐ Deliver to CONV
		-			Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to METALS
-					DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N/NA	Deliver to CONV
					DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y/N/NA	☐ Deliver to CONV
					Other:			
					Other:			
CC: ADUATO	X, D. CONV, D METALS,	□ MICRO. □ ORG. □						
	<u> </u>							
1	 Deliver dissolved Hg 	g-CVAF samples to METALS for filtration	n, 4.	Deliver pH, WD0	 and all MICRO samples ASAP to appropriate section 	n for immediate processing.		

NOTES	2. Deliver double-bagged n	netals samples to i	METALS for pr	eservation
	3. Do not test pH for preser	ved BNA and TOT	SULFIDE sam	ples. 🧷
SM Signature:		41	L L	<u> </u>

4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.

Date / Time Completed:

- 5. Enter "Time Span" for composite samples during sample togin.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: December 29, 2023

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, December 19, 2023

Stormwater samples were collected by Herrera Environmental Consultants on December 19, 2023. The samples were delivered to the King County Environmental Laboratory on the date of sample collection. The samples were assigned lab ID numbers L82954-1 to -8 and -17. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

Meghan Clkey

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200
Locator: SCTF-TB1-IN
Descrip: SCTF-TB1 upstream
Sample: L82954-1
Matrix: LG STORM WTR

ColDate: 12/19/23 11:55

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB1-OUT Descrip: SCTF-TB1 downstrea

 Sample:
 L82954-2

 Matrix:
 LG STORM WTR

 ColDate:
 12/19/23 11:56

WET Weight Basis WET Weight B

ColDate: 12/19/23 13:15
WET Weight Basis

421520-200 SCTF-TB1-IN

L82954-3

SCTF-TB1 upstream

LG STORM WTR

Project:

Locator:

Descrip:

Sample:

Matrix:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.447		0.002	0.01	ug/L	0.0092	<rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td><td>1.37</td><td></td><td>0.002</td><td>0.01</td><td>ug/l</td></rdl<>	0.002	0.01	ug/L	1.37		0.002	0.01	ug/l

Project: 421520-200 Locator: SCTF-TB1-OUT Descrip: SCTF-TB1 downstrea L82954-4 Sample:

Matrix: LG STORM WTR ColDate: 12/19/23 13:16

WET Weight Basis

421520-200 Project: SCTF-TB2-IN Locator: Descrip: SCTF-TB2 upstream

Sample: L82954-5 Matrix: LG STORM WTR ColDate: 12/19/23 11:57

WET Weight Basis

Project: 421520-200 SCTF-TB2-OUT Locator:

Descrip: SCTF-TB2 downstrea Sample: L82954-6 Matrix: LG STORM WTR

ColDate: 12/19/23 11:58

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.0672		0.002	0.01	ug/L	0.447		0.002	0.01	ug/L	0.226		0.002	0.01	ug/L

Project: 421520-200
Locator: SCTF-TB2-IN
Descrip: SCTF-TB2 upstream
Sample: L82954-7
Matrix: LG STORM WTR

ColDate: 12/19/23 13:16

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-OUT Descrip: SCTF-TB2 downstrea

ColDate: 12/19/23 13:16
WET Weight Basis

Project:

Locator:

Descrip:

Sample:

Matrix:

421520-200

FIELDDUP

L82954-17

FIELD DUPLICATE

LG STORM WTR

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-guinone	1.41		0.002	0.01	ua/L	0.813		0.002	0.01	ua/L	1.3		0.002	0.01	ua/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

				•
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB1-IN	421520-200	L82954-1	12/19/2023 11:55	0.447
SCTF-TB1-OUT	421520-200	L82954-2	12/19/2023 11:56	0.0092
SCTF-TB1-IN	421520-200	L82954-3	12/19/2023 13:15	1.37
SCTF-TB1-OUT	421520-200	L82954-4	12/19/2023 13:16	0.0672
SCTF-TB2-IN	421520-200	L82954-5	12/19/2023 11:57	0.447
SCTF-TB2-OUT	421520-200	L82954-6	12/19/2023 11:58	0.226
SCTF-TB2-IN	421520-200	L82954-7	12/19/2023 13:16	1.41
SCTF-TB2-OUT	421520-200	L82954-8	12/19/2023 13:16	0.813
FIELDDUP	421520-200	L82954-17	12/19/2023 13:16	1.3
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG191820 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association Comments
L82954-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 11:55	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- 6
L82954-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 11:56	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- 6
L82954-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 13:15	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- 6
L82954-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 13:16	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
L82954-5	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 11:57	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
L82954-6	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 11:58	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
L82954-7	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 13:16	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
L82954-8	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 13:16	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
L82954-17	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	12/19/2023 13:16	12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
WG191820-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,-
WG191820-2	SB		AQ6PPDQ-LCMS	OTHR WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- WG191820-1
WG191820-3	MS		AQ6PPDQ-LCMS	STORM WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- L82954-2
WG191820-4	MSD		AQ6PPDQ-LCMS	STORM WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- WG191820-3 L82954-2
WG191820-5	LD		AQ6PPDQ-LCMS	STORM WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- L82954-8
WG191820-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		12/21/2023 7:00	12/21/2023 10:30	WG191820-1,-2,-3,-4,-5,- MED 6

King County Environmental Laboratory QC Report

Workgroup: WG191820 6PPDQ by LCMS

MB:WG191820-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG191820-2 MB:WG191820-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.198 99 50--150

MSD:WG191820-4 MS:WG191820-3 L82954-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.0092 0.2 0.204 97 50--150 0.2 0.202 96 1 0--45 6ppd-quinone

LD:WG191820-5 L82954-8 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.8130.83530--40

CCC:WG191820-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 0.892
 89
 80--120

King County Environmental Laboratory QC Report

WDOE BMP Stormwater Herrera, L82954, December 19, 2023

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82954-1	65
L82954-2	66
L82954-3	58
L82954-4	65
L82954-5	62
L82954-6	63
L82954-7	55
L82954-8	57
L82954-17	51
WG191820-1	70
WG191820-2	68
WG191820-3	62
WG191820-4	63
WG191820-5	58
WG191820-6	74

Login: P82954

Dept, Matrix, Prod (Cont ID)

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	8.600

roject: 421520-200		· 10-1	LFM. Meghan Likey
•	CHAIN OF	CUSTODY	
Signed	Relinquished by	Date 12/19/29	Time 15:40
signed on last	Received by	Date	Time
pagte	Sample Numbers		[All]
Sample Number	P82954-1	P82954-2	
QC Link	ad badde Addition (1989) in administration and administration (1990).		magan mana dan 2000 kwita 1900 mang kaman danikan kari 2000 kwita 1900 manahadinan katika mengka 1900 manaha mandi daliki 2000 kwita 1900 kwita 1900 mili daliki 1900 kwita 1900
Locator	SCTF-TB1-IN	SCTF-TB1-OUT	
Short Loc Desc Locator Desc	SCTF-TB1 upstream sampling station	scream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	12/19/23 (1:55	12/19/23 11:56	
End Date/Time	NA	N/A	
Time Span	0	0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan	Elkev

	VIII (1) (1)	<u> </u>	
	Relinquished by	Date 12/19/23	Time 13:40
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82954-3	P82954-4	
QC Link			
Locator	SCTF-TB1-IN	SCTF-TB1-OUT	Section of American Continues of the America
Short Loc Desc	SCTF-TB1 upstream Sampling	outfall of outlet wer	and a sum on the sum and a sum of a sum of a sum of a sum of the s
Locator Desc	SCTF-TB1 upstream Sampling station	SCTF-TB1 downstream sampling station	and the state of t
Site	I-5TAPE	I-5TAPE	and the second s
Comments	Second grab	Second grab	
Start Date/Time	12/19/23 13:15	12/19/23 13:16	
End Date/Time	N/A	N/A	
Time Span		0	
Sample Depth	N/A	NA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan	Elkev

	Relinquished by Scott Shumwan	Date 12)19/23	Time 15:40
		Date	Time
	Sample Numbers		[AII]
Sample Number	P82954-5	P82954-6	
QC Link		00 00 00 00 00 00 00 00 00 00 00 00 00	
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	and participated the second control of the control
Short Loc Desc	inlet energy dispersion toub	sctfall of outlet weir	
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	12/19/23 11:57	12/19/23 11:58	
End Date/Time	N/A	N/A	
Time Span		0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan	Fikev

 	Relinquished by	12/19/23	Time 15:40	
	Received by	Date	Time	
	Sample Numbers			[AII]
Sample Number	P82954-7	P82954-8		LLEANLTAN
QC Link			er general er fram om fråm at det skallede hallede kollet for halle er kollet for skallede kollet for the first fo	auaumaaaaaaa
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	Anna and a second a second and a second a second and a se	hisasisis restr
Short Loc Desc	ontfall into energy dis, tob	ontfall of outlet weir SCTF-TB2 downstream		والمستحدث والمستحدد
Locator Desc	SCTF-TB2 upstream sampling station	sampling station		
Site	I-5TAPE	I-5TAPE		in i
Comments	Second grab	Second grab		
Start Date/Time	12/19/23 13:16	12/19/23 13:16		
End Date/Time	NA	N/A		control of control of
Time Span		0		
Sample Depth	N/A	N/A		ducatoropa est
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC: LPM: Meghan Elkey

	O/pairt O/		
	Relinquished by,	Date 12/19/23	Time 15:40
	Received by	Date 1219-23	Time 15.40)
	Sample Numbers	en e	[AII]
Sample Number	P82954-17		
QC Link	20 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C		and the second section of the section of
Locator	FIELDDUP		
Short Loc Desc	TB2-IN upstream state		
Locator Desc	FIELD DUPLICATE		gang pang sa sakah samanasa menisah di didak pang di penganah menah di didak di didak mengang pengangan menganah menganah di didak di dida
Site	FLDQC		ting the second
Comments	duplicate of TB2-IN		
Start Date/Time	12/19/23 13:16		
End Date/Time	NΑ		
Time Span		good for an in the second seco	
Sample Depth	ŊA		
Dept, Matrix, Prod	4 LG 6PPDQ (43)		

LIQUID SAMPLE RECEIPT RECORD

Logî	n Number(s): \$295	7-	(1-8,17)	Project No.: 4	- a1500	-200		Sub-Contracting: Y / (V	List Product(s):		
Colle	ct Date(s): ノス イ	7 -	23	Receive Date:	121	9-23		Changes: Y (N)	List Parameter(s):		
i i			SAMPLE RECEIPT	CONDITIONS				FIELD PRESERVATION CH	ECKLIST (Circle and/or check	applicable sele	etions)
		40.	table? Comment ID	CONDITI	ON Ac	ceptable?	Comment iD	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets	Y		Volumes		M/N		BNA / pH 6 - 9 w/ H ₂ \$O ₄ or NaOH	√ fleid sheet for F. pH	YIN	☐ Notify ORG
	ainer /		N ·	Holding Times		Y / N		GN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y / N	☐ Deliver to CONV
Tem	······································		I / NA	Delivery Location		Y/N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N / NA	☐ Preserve by SM
9.9	BOTITE	E C	OUNT (#) AND DESCRIP			RS		CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y / N	☐ Deliver to CONV
#		٠.	Bottle Description:	Sample Numl	<u>bers</u>			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
	40 mL clear vial (VOA):							O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	Preserve by SM
	60 mL clear glass (PHYTO):							PHYTOPLANKTON / Lugois	Visually inspect	Y / N	☐ Deliver to MICRO
	60 mL CWM HDPE:							TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N	Preserve By SM
	125 mL AWM HDPE:							TOC / pH < 2 w/ HCt (NPDES only)	☐ Check pH	Y/N	Preserve By SM
	125 mL CNM HDPE:							TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y/N	☐ Deliver to CONV
	125 mL CWM HDPE:							WDQ / FIXED	Visually inspect	Y / N	☐ Deliver to CONV
	125 mL GANM:						•	Other:			N. M.
	125 mL GANM w/HCI						····	ROUTINE SM PRESERVATION			
-	250 mL AWM HDPE:							PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:						·····	Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ fleid sheet for F. pH	Y / N	☐ Adjust pH
9	250 mL CWM HDPE (MICRO): 250 mL GAWM: 1-8 1	-7						HG-GVAA-L-Tefion (T/D)/pH<2w/ULTRAHC	☐ Preserve & deliver	NA NA	NA
	250 mL GAWM: -0 ,	/−						ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO₃	Preserve & deliver	NA	NA .
	300 mL WDO (8 hour HT):							TOC / pH < 2 w/ HCl Other:	Preserve & deliver	, NA	NA
	500 mL AWM HDPE;							Other:			
	500 mL CWM HDPE:					 			ST (Circle and/or check applica	(Newson)	
	500 mL CWM PP (MICRO):							Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
	500 mL HDPE (METALS):							BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	
	500 mL HDPE, double-bagged (I	MET	ALS):					CN / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL Teflon (Hg):							CN / Suifide (Check field sheet for DF)	Y / N / not tested	Y / N	☐ Deliver to CONV
	500 ml. Teflon, double-bagged (i	MET	ALS):					VOA / Chłorine (Check documentajon)	Y / N / not tested	Y / N	Deliver to ORG
	500 mL GANM / GAWM:							Other,			Delives to ORG
	500 mL Polystyrene Filtration Un	nits (METALS):		0.000				HEADSPACE CHECK		
	1L AWM HDPE:	3	······································					PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
	1L CWM HDPE:							MICRO (Visually inspect)	Headspace (@ 1")	Y / N	□ Notify MICRO
	1L CWM PP (MICRO):							TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y/N	☐ Notify CONV
	1L GANM:				•			VOA (Visually inspect)	Zero headspace	Y/N	□ Notify ORG
	1L GCWM:							WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify CONV
	1L GAWM w/ H ₂ SO ₄ :							Other:			
	2L CWM HDPE:							FIELD FILTRATION CHE	CKLIST (Circle and/or check a)	plicable select	ions)
<u> </u>	Other:	:						Product (SM Action)	<u>Field Filtered</u>	Field Blank	Corrective Action
			COMMENTS / NO	TIFICATIONS				ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y/N	☐ Deliver to CONV
								NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
								Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to METALS
								DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA	'
								DOC (Deliver / Notify Unit) DCOD / CR(VI) (Deliver / Notify Unit)			☐ Deliver to METALS
								DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA	☐ Deliver to METALS ☐ Deliver to CONV

CC;	AQUATOX,	CONV,	METALS,	MICRO.	ORG.	

NOTES

Deliver dissolved Hg-CVAF samples to METALS for filtration.
 Deliver double-begged registals samples to METALS for preservation.
 Do not test of for preserved BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRQ samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Spen" for composite samples during sample login.
- 6. Split elgae sample into 60 mL clear glass if PHYTQQUAL is requested.

Date / Time Completed:

NEFT STREET

SM Signatur



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: January 16, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, January 8, 2024

Stormwater samples were collected by Herrera Environmental Consultants on January 8, 2024. The samples were delivered to the King County Environmental Laboratory on January 9, 2024. The samples were assigned lab ID numbers L82954-9 to -14 and L82955-5 to -8 and -17. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200 Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea Sample: L82954-9 Matrix: LG STORM WTR

ColDate: 1/8/24 21:28

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-OUT Descrip: SCTF-TB2.5 downstr

Sample: L82954-10 Matrix: LG STORM WTR ColDate: 1/8/24 21:29

WET Weight Basis

Locator: SCTF-TB25-IN Descrip: SCTF-TB2.5 upstrea Sample: L82954-11

421520-200

Matrix: LG STORM WTR ColDate: 1/8/24 22:32

WET Weight Basis

Project:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.428		0.002	0.01	ug/L	0.35		0.002	0.01	ug/L	0.902		0.002	0.01	ug/L

Project: 421520-200 Locator: SCTF-TB25-OUT Descrip: SCTF-TB2.5 downstr L82954-12 Sample:

Matrix: LG STORM WTR ColDate: 1/8/24 22:32 **WET Weight Basis**

Project: SCTF-TB4-IN Locator: Descrip: SCTF-TB4 upstream L82954-13 Sample: Matrix:

LG STORM WTR ColDate: 1/8/24 21:35 WET Weight Basis

421520-200

Locator: SCTF-TB4-OUT Descrip: SCTF-TB4 downstrea Sample: L82954-14 Matrix: LG STORM WTR ColDate: 1/8/24 21:34

421520-200

WET Weight Basis

Project:

Parameters Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units AQ KCEL SOP 4077: 6PPDQ by LCMS 0.523 0.002 0.01 0.58 0.002 0.01 0.244 0.002 0.01 ug/L 6ppd-quinone ug/L ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB2-IN

 Descrip:
 SCTF-TB2 upstream

 Sample:
 L82955-5

 Matrix:
 LG STORM WTR

Matrix: LG STORM W ColDate: 1/8/24 21:31 WET Weight Basis Project: 421520-200 Locator: SCTF-TB2-OUT Descrip: SCTF-TB2 downstrea

Sample: L82955-6
Matrix: LG STORM WTR
ColDate: 1/8/24 21:32
WET Weight Basis

 Sample:
 L82955-7

 Matrix:
 LG STORM V

 ColDate:
 1/8/24 22:34

Project:

Locator:

Descrip:

SCTF-TB2 upstream L82955-7 LG STORM WTR

421520-200

SCTF-TB2-IN

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.505		0.002	0.01	ug/L	0.32		0.002	0.01	ug/L	0.866		0.002	0.01	ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB2-OUT

 Descrip:
 SCTF-TB2 downstrea

 Sample:
 L82955-8

Matrix: LG STORM WTR ColDate: 1/8/24 22:34
WET Weight Basis

Project: 421520-200
Locator: FIELDDUP
Descrip: FIELD DUPLICATE
Sample: L82955-17
Matrix: LG STORM WTR
ColDate: 1/8/24 22:32

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.52		0.002	0.01	ug/L	0.887		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

				ð
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB25-IN	421520-200	L82954-9	1/8/2024 21:28	0.428
SCTF-TB25-OUT	421520-200	L82954-10	1/8/2024 21:29	0.35
SCTF-TB25-IN	421520-200	L82954-11	1/8/2024 22:32	0.902
SCTF-TB25-OUT	421520-200	L82954-12	1/8/2024 22:32	0.523
SCTF-TB4-IN	421520-200	L82954-13	1/8/2024 21:35	0.58
SCTF-TB4-OUT	421520-200	L82954-14	1/8/2024 21:34	0.244
SCTF-TB2-IN	421520-200	L82955-5	1/8/2024 21:31	0.505
SCTF-TB2-OUT	421520-200	L82955-6	1/8/2024 21:32	0.32
SCTF-TB2-IN	421520-200	L82955-7	1/8/2024 22:34	0.866
SCTF-TB2-OUT	421520-200	L82955-8	1/8/2024 22:34	0.52
FIELDDUP	421520-200	L82955-17	1/8/2024 22:32	0.887
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

WG192078 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82954-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 21:28	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
L82954-10	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 21:29	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research						6	
L82954-11	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:32	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research						6	
L82954-12	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:32	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
L82954-13	421520 200	Research	A OCDDDO LOMS	CTORNA MATR	1/0/2024 21:25	1/10/2024 7:20	1/10/2024 10:20	6 WC103078 1 3 3 4 F	
L02954-15	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 21:35	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
L82954-14	421520-200	WDOE Stormwater BMP	AO6PPDO-LCMS	STORM WTR	1/8/2024 21:34	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	_
		Research			, -, -	, ., .	, ,, ,	6	
L82954-15	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:30	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research						6	
L82954-16	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:30	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research			. /- /			6	
L82955-5	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 21:31	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
L82955-6	421520-200	Research WDOE Stormwater BMP	A O S P P D O L C M S	STORM WTR	1/8/2024 21:32	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	_
102333-0	421320-200	Research	AQUI I DQ-LCIVIS	STORIVI WTR	1/0/2024 21.32	1/10/2024 7.30	1/10/2024 10:30	6	
L82955-7	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:34	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research						6	
L82955-8	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:34	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
		Research						6	
L82955-17	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	1/8/2024 22:32	1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	-
WG192078-1	MB	Research	AQ6PPDQ-LCMS	OTHR WTR		1/10/2024 7:30	1/10/2024 10:30	6 WG192078-1,-2,-3,-4,-5,	
WG192078-1	IVID		AQUFFDQ-LCIVIS	OTTIK WTK		1/10/2024 7.30	1/10/2024 10.30	6	
WG192078-2	SB		AQ6PPDQ-LCMS	OTHR WTR		1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	- WG192078-1
								6	
WG192078-3	MS		AQ6PPDQ-LCMS	STORM WTR		1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	- L82955-8
								6	
WG192078-4	MSD		AQ6PPDQ-LCMS	STORM WTR		1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	- WG192078-3 L82955-8
WC102070 F	10		AOCDDDO I CNAC	CTODA A VA/TD		1/10/2024 7:20	1/10/2024 10:20	6	102055 7
WG192078-5	LD		AQ6PPDQ-LCMS	STORM WTR		1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	- L02955-/
WG192078-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		1/10/2024 7:30	1/10/2024 10:30	WG192078-1,-2,-3,-4,-5,	- MED
	-00			=		_, _0, _0	_, _0, _00.00	6	

Workgroup: WG192078 6PPDQ by LCMS

MB:WG192078-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

 Parameter
 MDL
 RDL
 Units
 MB Value
 Qual

 6ppd-quinone
 0.002
 0.01
 ug/L
 <MDL</td>

SB:WG192078-2 MB:WG192078-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.223 111 50--150

MSD:WG192078-4 MS:WG192078-3 L82955-8 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.52 0.2 0.72 100 50--150 0.2 0.68 80 6 0--45 6ppd-quinone

LD:WG192078-5 L82955-7 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

(Lab Dapileate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.8660.87710--40

CCC:WG192078-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.03
 103
 80--120

King County Environmental Laboratory QC Report

WDOE BMP Stormwater Herrera, L82954 and L82955, January 8, 2024

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82954-9	76
L82954-10	74
L82954-11	73
L82954-12	72
L82954-13	71
L82954-14	76
L82954-15	71
L82954-16	75
L82955-5	67
L82955-6	68
L82955-7	68
L82955-8	56
L82955-17	71
WG192078-1	81
WG192078-2	75
WG192078-3	61
WG192078-4	58
WG192078-5	63
WG192078-6	93

Dept, Matrix, Prod

(Cont ID)

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:		51 P
LPM: Me	ghan Elkey	6.621

10ject. 421320-200	CHAIN OF	CUSTODY	
signed	Relinquished by	Date 12/19/29	Time 15:40
on ast	Received by	Date 12-19-23	Time 1540
pagts	Sample Numbers		[AII]
Sample Number	P82954-1	P82954-2	
QC Link			
Locator	SCTF-TB1-IN	SCTF-TB1-OUT	
Short Loc Desc	antial of energy dis, tub	outfall of outlet weir	engerm eigen mag er op met op de te eer en er op een te met te en en eer en eer en eer een een met op de de te
Locator Desc	SCTF-TB1 upstream/sampling	SCTF-TB1 downstream sampling station	
on may make entropy at the first of the second seco	station I-5TAPE	I-STAPE	
Site Comments	First grab	First grab	
Start Date/Time	12/19/23 (1:55	12/19/23 11:56	
End Date/Time	NA	N/A	
Time Span	0	0	
Sample Depth	N/A	NA	
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Medhan Elkey	

	CHAIN OF	CUSTODY		
· · · · · · · · · · · · · · · · · · ·	Relinquished by Scott Shumway	Date 12/19/23	Time 15:40	
	Received by	Date	Time	
	Sample Numbers	Sample Numbers [All		
Sample Number	P82954-3	P82954-4		
QC Link Locator	SCTF-TB1-IN	SCTF-TB1-OUT		
Short Loc Desc Locator Desc	SCTF-TB1 upstream sampling station	sattal of outlet wer SCTF-TB1 downstream sampling station		
Site	I-5TAPE	I-5TAPE		
Comments	Second grab	Second grab		
Start Date/Time	12/19/23 13:15	12/19/23 13:16		
End Date/Time	N/A	N/A		
Time Span	0	0		
Sample Depth	N/A	N/A		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		
	**.			

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	,

CHAIN OF COSTODY				
	Relinquished by Scott Shumway	Date 12/19/23	Time 15:40	
	Received by 0	Date	Time	
	Sample Numbers		[AII]	
Sample Number	P82954-5	P82954-6		
QC Link				
Locator	SCTF-TB2-IN	SCTF-TB2-OUT		
Short Loc Desc	inlet energy dispersion to	sctf-tb2 downstream		
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station		
Site	I-5TAPE	I-5TAPE		
Comments	First grab	First grab		
Start Date/Time	12/19/23 11:57	12/19/23 11:58		
End Date/Time	MA	N/A		
Time Span	0	0		
Sample Depth	N/A	N/A		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkev	-

	CHAIN OF	CHAIN OF CUSTODY		
	Relinquished by	Date 19/23	Time 15:40	
	Received by	Date	<i>Time</i>	
	Sample Numbers [All]			
Sample Number	P82954-7	P82954-8		
QC Link		and the second s	CONTROL CONTRO	
Locator	SCTF-TB2-IN	SCTF-TB2-OUT		
Short Loc Desc	ontfall into energy dis. tob	ontfall of outlet weir SCTF-TB2 downstream		
Locator Desc	SCTF-TB2 upstream sampling station	sampling station		
Site	I-5TAPE	I-5TAPE	the state of the s	
Comments	Second grab	Second grab		
Start Date/Time	12/19/23 13:16	12/19/23 13:16		
End Date/Time	N/A	N/A		
Time Span		0		
Sample Depth	N/A	N/A		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan	Elkev

	OF A BUT OF		***
	Relinquished by	Date 1/9/24	Time 12:09
dia ang 17 militari Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malamatan Malama	Regelived by	Date 9-24	Time 1209
	Sample Numbers		[AII]
Sample Number	P82954-9	P82954-10	A Linkship Control of the Control of
QC Link	A CANTON AND THE CONTROL OF T		
Locator	SCTF-TB25-IN	SCTF-TB25-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/8/24 21:28	1/8/24 21:289	
End Date/Time	N/A	N/A	
Time Span	0	0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU 1	ГС:	
LPM:	Meghan Elkey	

	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[All]
Sample Number	P82954-11	P82954-12	
QC Link			gagan yang seperantah dan kanada kanada seperangan sebagai kanada dan kanada dan kanada dan kanada dan kanada s
Locator	SCTF-TB25-IN	SCTF-TB25-OUT	and processing the contract of
Short Loc Desc			and the second second contract the second contract to the second contract to the second contract to the second
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/8/24 22:32	1/8/21 22:32 N/A	
End Date/Time	N/A	NIA	
Time Span		0	
Sample Depth	N/A	NIA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	

			•
·	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82954-13	P82954-14	
QC Link	Company of the second of the s	100 (1000) (1000	
Locator	SCTF-TB4-IN	SCTF-TB4-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/6/24 21:35	1/8/24 21:34 N/A	
End Date/Time	NIA	N/A	
Time Span		0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU 1	гс:	
I DM.	Meghan Fikey	

:	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82954-15	P82954-16	
QC Link Locator	SCTF-TB4-IN	SCTF-TB4-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/8/24 22:30	1/8/24 22:30	
End Date/Time	N/A	N/A	
Time Span	and formation is a compared to the compared to	0	
Sample Depth	N/A	NIA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC: LPM: Meghan Elkey

	VIII 11. VI		
	Relinquished by	Date 12/19/23	Time 15:40
	Received by 1	Date 1219-23	Time 15.40)
	Sample Numbers		[AII]
Sample Number	P82954-17		
QC Link	And the state of t		
Locator	FIELDDUP		
Short Loc Desc	TB2-IN upstream state	M	
Locator Desc	FIELD DUPLICATE		tt. Beginning gegen gegen amman en mit en statuet omtet tritte var en
Site	FLDQC		
Comments	duplicate of TB2 TIN		
Start Date/Time	12/19/23 13:16		
End Date/Time	N/A		
Time Span	Ø,		
Sample Depth	NA		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)		

LIQUID SAMPLE RECEIPT RECORD

Login	Number(s): 8294	74	-11-8	(17)	Project No.: 4	21520-	200		Sub-Contracting: Y / (N)	List Product(s):		
Colle	ct Date(s): /2 -	19	-23		Receive Date:	1279	1-23		Changes: Y N	List Parameter(s):		
			8	AMRLERECEIN	CONDITIONS				FIELD PRESERVAT	ionicheckulst (circle and/or check	applicable sele	ections)
	CONDITION		eptable?	Comment ID	CONDITION	N Acc	eptable?	Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Label	s / Fieldsheets		r n		Volumes		Y / N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√fleid sheet for F. pH	Y/N	☐ Notify ORG
Conta			d i n		Holding Times		Y / N		CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
Temp	erature (w/ ice)		N/NA		Delivery Location		Y / N	-	NO23 pH < 2 w/ H₂SO₄ ·	☐ Check pH	Y / N / NA	☐ Preserve by SM
	BO	TILE	COUNT	#) AND DESCRIP	TION and SAMP	LE NUMBER	S	0.00	CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15	min √field sheet for pH	Y/N	☐ Deliver to CONV
#	•		<u>B</u>	ottle Description:	Sample Number	S			ICP / HG-CVAA-M / pH < 2 w/ HNO3	☐ Check pH	Y/N	☐ Preserve By SM
	40 mL clear vial (VOA):								O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	☐ Preserve by SM
	60 mL clear glass (PHYTO):		.,						PHYTOPLANKTON / Lugois	Visually Inspect	Y/N	Deliver to MICRO
	60 mL CWM HDPE:								TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N	☐ Preserve By ŚM
 	125 mL AWM HDPE:								TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y/N	Preserve By SM
	125 mL CNM HDPE:								TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y/N	Deliver to CONV
	125 mL CWM HDPE:						••••		WDO / FIXED	Visually inspect	Y/N	☐ Deliver to CONV
	125 mL GANM:								Other:			
	125 mL GANM w/HCI		····				··			VATION CHECKLIST (Circle and/or ch	ck applicable	selections)
<u> </u>	250 mL AWM HDPE:								PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:							,	Chlorinated Pasticides / pH 5 - 9 w/ H ₂ SO ₄ or NaO	OH √ field sheet for F. pH	Y/N	☐ Adjust pH
	250 mL CWM HDPE (MICRO	0): 	,					·	HG-CVAA-L-Teflon(T / D)/pH < 2 w/ ULTRA HC	Preserve & deliver	NA	NA
7	250 mL GAWM: 5-8,	17							ICPMS/HG-CVAA-M(T/D)/pH<2w/ULTRAH	HNO ₃ Preserve & deliver	NA	NA
	250 mL GAWM w/ H2SO4:	,							TOC / pH < 2 w/ HCl	☐ Preserve & deliver	NA	NA
	300 mL WDO (8 hour HT):								Other:			•
· · · · · · · · · · · · · · · · · · ·	500 mL AWM HDPE:								Other:			
-	500 mL CWM HDPE:									NGE TEST (Circle and/or check applica	ble selections	
	500 mL CWM PP (MICRO):								Product / Interference (SM Action)	Positive Test?	<u>Treated</u>	Corrective Action
	500 mL HDPE (METALS):								BNA / Chiorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL HDPE, double-bagg	ed (Mi	ETALS):						CN / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to CONV
	500 mL Teflon (Hg):								CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y/N	☐ Deliver to CONV
	500 mL Teflon, double-bagg	ed (Mi	ETALS):						VOA / Chlorine (Check documentaion)	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL GANM / GAWM:								Other:			
	500 mL Polystyrene Filtration	n Unite	(METALS):						HEADSPAGE CHECK		
	1L AWM HDPE:								PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
	1L CWM HDPE:								MICRO (Visually inspect)	Headspace (@ 1")	Y/N	☐ Notify MICRO
$\vdash \vdash$	1L CWM PP (MICRO):			-					TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y/N	☐ Notify CONV
	1L GANM:								VOA (Visually inspect)	Zero headspace	Y / N	☐ Notify ORG
\vdash	1L GCWM: 1L GAWM w/ H₂SQ₄:					·			WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify CONV
	···								Other:			THE OTHER DESIGNATION OF THE STREET, SAN THE S
	2L CWM HDPE: Other:								FIELD FILTRATION Product (SM Action)	N CHECKLIST (Circle and/or check ap		
(i)	Other.			OMMENTS AND	distriction of		THE STREET		•	Field Filtered	Field Blank	Corrective Action
				emaining (NO	IFICATIONS				ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 15 min y / n) / N	YIN	☐ Deliver to CONV
									Dissolved Metals (Check Field Sheet)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
									DOC (Deliver / Notify Unit)	Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Y / N / NA Y / N / NA	Deliver to METALS
									DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA Y / N / NA	Deliver to CONV
									Other:	1 (within 15 mary 18)7 N	I / H/NA	☐ Deliver to CONV
		*							Other:			
				#		•						

C:		AQUAT	OX, □	CONV, □	METALS, □	MiCRO, □	IORG, 🏻
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NOTES

- Deliver dissolved Hg-CVAF samples to METALS for filtration.
 Deliver double-bagged metals samples to METALS for preservation.
- 3. Do not jest of for preserved BNA and TOTSULFIDE samples.
- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immédiate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

新工作的 特里的男性的

LIQUID SAMPLE RECEIPT RECORD

Logia	n Number(s): \$2954-69 9-16	Project No.: 4	21520-201	<i>•</i>)	Sub-Contracting: Y (N)	List Product(s):		
Colle	ect Date(s): /-8-24	Receive Date: /	-9-24		Changes: Y (N)	List Parameter(s):		
	SAMP	LE RECEIPT CONDITIONS			EIEUD PRESERVATION CH	ECKLIST/Circle and/or check	applicable sele	ections)
		mment ID CONDITION		Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets /Y / N	Volumes	J(r) N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	☐ Notify ORG
	ainer / Y/ N	Holding Times	Y/I N		CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
Temp	perature (w/ ice) Y N / NA	Delivery Location	(y/N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N/NA	☐ Preserve by SM
		ND DESCRIPTION and SAMPL			CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y/N	☐ Deliver to CONV
#	Bottle i	Description: Sample Numbers	È		ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
<u> </u>	40 mL clear viat (VOA):				O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	YIN	Preserve by SM
	60 mL clear glass (PHYTO):	-			PHYTOPLANKTON / Lugois	Visually inspect	YIN	☐ Deliver to MICRO
	60 mL CWM HDPE:				TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y / N	Preserve By SM
	125 mL AWM HDPE:				TOC / pH < 2 w/ HCI (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
ļ	125 mL CNM HDPE:				TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV
	125 mL CWM HDPE:				WDO / F(XED	Visually inspect	Y / N	☐ Deliver to CONV
	125 mL GANM:				Other:			
	125 mL GANM w/HCI				ROUTINE SM PRESERVATION		eck applicable	selections)
	250 mL AWM HDPE:				PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:				Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y / N	☐ Adjust pH
27	250 mL CWM HDPE (MICRO):				HG-CVAA-L-Teffon (T / D) / pH < 2 w/ ULTRA HCI.	Preserve & deliver	NA	NA
1	250 mL GAWM: 9-16				ICPMS/HG-CVAA-M (T/D)/pH<2w/ULTRAHNO3	☐ Preserve & deliver	NA	NA
<u> </u>	250 mL GAWM w/ H2SO4:				TOC / pH < 2 w/ HCi	Preserve & deliver	NA	NA .
ļ	300 mL WDO (8 hour HT);				Other:			
<u> </u>	500 mL AWM HDPE:				Other:			
	500 mL CWM HDPE:				INTERFERENCE (E	St (Circle and/or check applica	ible selections	
	500 mL CWM HDPE: 500 mL CWM PP (MICRO):				INTERFERENCE TE Product / Interference (SM Action)	ST (Girdle and/or check application Positive Test?	ible selections Treated	Corrective Action
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation)	***************************************		
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation)	Positive Test?	Treated Y / N Y / N	Corrective Action
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested	<u>Treated</u> Y / N	Corrective Action Deliver to ORG
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation)	Positive Test? Y / N / not tested Y / N / not tested	Treated Y / N Y / N	Corrective Action ☐ Deliver to CRG ☐ Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested	Treated Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other:	Positive Test? Y / N / not tested HEADSPACE CHECK	Treated Y/N Y/N Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action)	Positive Test? Y / N / not tested NEADSPACE CHECK Check For	Treated Y / N Y / N Y / N Y / N Y / N Acceptable?	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1")	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO):				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Corrective Action
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL Teflon, double-bagged (METALS): 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GCWM:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other:	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y/N Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Pilicable select	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:				INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace CKUST (Circle and/or check a Field Filtered	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Field Blank	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify ORG Notify CONV Notify CONV Corrective Action
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENTS / NOTIFICATIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace CKLIST (Circle anti/or check af Field Filtered Y (within 15 min y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Pillcable select Field Blank Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify Micro Notify ORG Notify CONV Notify CONV Corrective Action Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENTS / NOTIFICATIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentalon) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NO3 / NH3 / SI (Documentation)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace CKLIST (Circle anti/or check a) Field Filtered Y (within 15 min y / n) / N Y (within 1 day y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Pilicable select Field Blank Y/N Y/N/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify ORG Notify CONV Notify CONV Corrective Action Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENTO NOTIFICATIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace KLIST (Gircle and/or check a) Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N	Treated Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENTO NOTIFICATIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentalon) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NO3 / NH3 / SI (Documentation)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace KLIST (Circle and/or check a Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENTS NOTIFICATIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CM / Chlorine (Check documentation) CM / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace KLIST (Gircle and/or check a) Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N	Treated Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV
	500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagged (METALS): 500 mL Teflon (Hg): 500 mL Teflon, double-bagged (METALS): 500 mL GANM / GAWM: 500 mL Polystyrene Filtration Units (METALS): 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	MENIONNONFILMANIONS			INTERFERENCE TE Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHE Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace KLIST (Circle and/or check a Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV Deliver to CONV Deliver to CONV Deliver to CONV

NOTES

 Deliver dissolved Hg-CVAF samples to METALS for filtration.
 Deliver double-bagged metals samples to METALS for preservation. 3. Do not test purior preserved BNA and FQTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

WDOE BMP - Herrera 6PPDQ Add-On TAPE

	OIIAIII OI		<u> </u>
	Relinquished by	Date 1/9/24	Time /2:10
		Date 1-9-21	Time 1210
	SamplelNumpers		[All]
Sample Number	P82955-5	P82955-6	
QC Link	Half (Control of the Control of the		Market and the second
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/8/24 21:31	1/8/24 21:32	
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I DM: Meghan Fikey	

	01771111 0.		
	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82955-7	P82955-8	
QC Link			
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/8/24 22:34	1/8/24 22:34	
End Date/Time	N/A	N/A	
Time Span		0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	

	Relinquished by	Date		Time
	Received by	Date		Time
	Sample Numbers			[All]
Sample Number	P82955-17			
QC Link				
Locator	FIELDDUP			
Short Loc Desc				
Locator Desc	FIELD DUPLICATE		e paga panamanangga ar at nata attautuna para arta paganar ana para ara merupakan selekar eta ferrara 18	of the second control
Site	FADQC	ļ		en e
Comments	Second grob			
Start Date/Time	1/8/24 22:32			
End Date/Time	N/A			
Time Span	0			
Sample Depth	N/A			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)			

LIQUID SAMPLE RECEIPT RECORD

Logi	Number(s): 82955-15-8217	Project No.: 421	520-200		Sub-Contracting; Y / (V)	List Product(s):		
Colle	ct Date(s): /-8-24	Receive Date: / -9	-24		Changes: Y (N	List Parameter(s):		
	SAMPL	ERECEIPT CONDITIONS			A	ECKLIST (Circle and lor check	amelicable sel	et(one)
		nment ID CONDITION	Accentable?	Comment ID	PRODUCT / Preservation -	SM Action	Acceptable?	Corrective Action
Labe	ls / Fleidsheets /k/ / N	Volumes	A) N		BNA / pH 6 - 9 w/ H₂SO₄ or NaOH	√field sheet for F. pH	Y / N	
	ainer / X / N	Holding Times	/ N		CN / pH > 12 w/ NaOH within 15 min		Y / N	□ Notify ORG
Tem	perature (w/ ice) /y// N / NA	Delivery Location	YIN		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH ☐ Check pH	Y / N / NA	Deliver to CONV
	BOTTLE COUNT (#) AN	DESCRIPTION and SAMPLE N			CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ fleid sheet for pH	Y / N	Preserve by SM
#		escription: Sample Numbers		# /1000 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 -	ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	Deliver to CONV
_	40 mL clear vial (VOA):				O&G / HEM / PHENOL / PH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	Preserve By SM
	60 mL clear glass (PHYTO):	•			PHYTOPLANKTON / Lugois	Visually inspect	Y / N	☐ Preserve by SM ☐ Deliver to MICRO
	60 mL CWM HDPE:				TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y / N	Preserve By SM
	125 mL AWM HDPE:				TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
	125 mL CNM HDPE:				TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	Deliver to CONV
	125 mL CWM HDPE:				WDO / FIXED	Visually inspect	Y / N	Deliver to CONV
	125 mL GANM:				Other;			□ Deaver to CONV
	125 mL GANM w/HCi				ROUTINESM PRESERVATION	(effection (effection) of the	eck applicable	selections)
	250 mL AWM HDPE:				PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:		,		Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y / N	Adjust pH
	250 mL CWM HDPE (MICRO):				HG-CVAA-L-Teffon (T/D)/pH < 2 w/ULTRA HCI	☐ Preserve & deliver	NA NA	NA Aujust pri
5	250 ml. GAWM: 5-8,17				ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO ₃	☐ Preserve & deliver	NA	NA ·
~	250 mL GAWM w/ H2SO4:	-			TOC / pH < 2 w/ HCi	Preserve & deliver	NA NA	NA
	300 mL WDO (8 hour HT):				Other:	Last 1 Fedder of the deliver		
	500 mL AWM HDPE:	-			Other:			
	500 mL CWM HDPE;				NTERFERENCE TE	ST (Circle and/or check applies	ble selections	
	500 mL CWM PP (MICRO):				Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
	500 mL HDPE (METALS);			**************************************	BNA / Chlorine (Check documentation)	Y / N / not tested	Y/N	Deliver to ORG
	500 mL HDPE, double-bagged (METALS):				CN / Chlorine (Check documentation)	Y / N / not tested	Y / N	Deliver to CONV
	500 mL Teflon (Hg):				CN / Suifide (Check field sheet for DF)	Y / N / not tested	Y / N	☐ Deliver to CONV
	500 mL Teflon, double-bagged (METALS):				VOA / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL GANM / GAWM:				Other:			Deliver to ORG
	500 mL Polystyrene Filtration Units (METALS):					HEADSPACE CHECK		
	1L AWM HDPE:				PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
	1L CWM HDPE:				MICRO (Visually Inspect)	Headspace (@ 1")	Y / N	□ Notify MICRO
	1L CWM PP (MICRO):				TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y / N	☐ Notify MICRO
	1L GANM:				VOA (Visually inspect)	Zero headspace	Y / N	☐ Notify CONV
	1L GCWM:		***************************************		WDO (Visually inspect)	Zero headspace	Y / N	☐ Notify CONV
	1L GAWM w/ H ₂ SO ₄ ;				Other:			□ Noury CONV
	2L CWM HDPE:	v			EIEUD EILTRATIONIGHE	KLIST (Circle and/or check ar	nlicable select	ions)
	Other:				Product (SM Action)	Field Filtered	Field Blank	Corrective Action
	COMM	ients inotifications			ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV
					NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV
					Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to METALS
	-				DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA	☐ Deliver to CONV
					DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV
					Other:			
	· · · · · · · · · · · · · · · · · · ·		·		Other:			
	CC: AQUATOX, CONV, METALS, &	MICRO II ORG II				·····		

:O:	AQ	UΑ,	гох,	, 🗆	CON/	/, □	MET	ΓALS,	MICRO,	ORG,	

NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
- 2. Deliver double bagged metals semples to METALS for preservation. 3. Do not test of the preserved BNA and FOTSULFIDE samples.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

4. Deliver pH, WDO, end all MICRO samples ASAP to appropriate section for immediate processing.

JAN 08 74 17:54



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: January 23, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, January 18, 2024

Stormwater samples were collected by Herrera Environmental Consultants on January 18, 2024. The samples were delivered to the King County Environmental Laboratory on the date of sample collection. The samples were assigned lab ID numbers L82955-9 to -12. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

 Project:
 421520-200

 Locator:
 SCTF-TB25-IN

 Descrip:
 SCTF-TB2.5 upstrea

 Sample:
 L82955-9

Matrix: LG STORM WTR ColDate: 1/18/24 14:00

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB25-OUT Descrip: SCTF-TB2.5 downstr

 Sample:
 L82955-10

 Matrix:
 LG STORM WTR

 ColDate:
 1/18/24 14:00

WET Weight Basis

Locator: SCTF-TB25-IN
Descrip: SCTF-TB2.5 upstrea
Sample: L82955-11

421520-200

 Sample:
 L82955-11

 Matrix:
 LG STORM WTR

 ColDate:
 1/18/24 15:00

WET Weight Basis

Project:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.509		0.002	0.01	ug/L	0.418		0.002	0.01	ug/L	0.666		0.002	0.01	ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB25-OUT

 Descrip:
 SCTF-TB2.5 downstr

 Sample:
 L82955-12

Matrix: LG STORM WTR ColDate: 1/18/24 15:00

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.499		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB25-IN	421520-200	L82955-9	1/18/2024 14:00	0.509
SCTF-TB25-OUT	421520-200	L82955-10	1/18/2024 14:00	0.418
SCTF-TB25-IN	421520-200	L82955-11	1/18/2024 15:00	0.666
SCTF-TB25-OUT	421520-200	L82955-12	1/18/2024 15:00	0.499
* Not converted to dry weight bas	is			

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG192221 6PPDQ by LCMS

Sample L82955-9	Project 421520-200	Project Description WDOE Stormwater BMP	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 1/18/2024 14:00	Prep Date 1/19/2024 7:20	Anal Date 1/19/2024 10:00	QC Association WG192221-1,-2,-3,-4,-5,-	Comments
L02933-9	421320-200	Research	AQOPPDQ-LCIVIS	STORIVI WTK	1/16/2024 14.00	1/19/2024 7.20	1/19/2024 10.00	6	
L82955-10	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/18/2024 14:00	1/19/2024 7:20	1/19/2024 10:00	WG192221-1,-2,-3,-4,-5,-	
L82955-11	421520-200		AQ6PPDQ-LCMS	STORM WTR	1/18/2024 15:00	1/19/2024 7:20	1/19/2024 10:00	WG192221-1,-2,-3,-4,-5,-	
L82955-12	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/18/2024 15:00	1/19/2024 7:20	1/19/2024 10:00	WG192221-1,-2,-3,-4,-5,-	
WG192221-1	MB	Research	AQ6PPDQ-LCMS	OTHR WTR		1/19/2024 7:20	1/19/2024 10:00	WG192221-1,-2,-3,-4,-5,-	
WG192221-2	SB		AQ6PPDQ-LCMS	OTHR WTR		1/19/2024 7:20	1/19/2024 10:00	6 WG192221-1,-2,-3,-4,-5,-	WG192221-1
WG192221-3	MS		AQ6PPDQ-LCMS	STORM WTR		1/19/2024 7:20	1/19/2024 10:00	6 WG192221-1,-2,-3,-4,-5,-	L82955-10
WG192221-4	MSD		AQ6PPDQ-LCMS	STORM WTR		1/19/2024 7:20	1/19/2024 10:00		WG192221-3 L82955-10
WG192221-5	LD		AQ6PPDQ-LCMS	STORM WTR		1/19/2024 7:20	1/19/2024 10:00	6 WG192221-1,-2,-3,-4,-5,-	L82955-9
WG192221-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		1/19/2024 7:20	1/19/2024 10:00	6 WG192221-1,-2,-3,-4,-5,-	MED
								6	

King County Environmental Laboratory QC Report

Workgroup: WG192221 6PPDQ by LCMS

MB:WG192221-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG192221-2 MB:WG192221-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.205 102 50--150

MSD:WG192221-4 MS:WG192221-3 L82955-10 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.418 0.2 0.622 102 50--150 0.2 0.622 102 0 0--45 6ppd-quinone

LD:WG192221-5 L82955-9 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.5090.52120--40

CCC:WG192221-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

Parameter	MDL	RDL	Units	True Value	CCC Value	% Rec.	Qual Lab Limit
6ppd-quinone	0.01	0.05	ug/L	1	1.03	103	80120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82955-9	57
L82955-10	59
L82955-11	56
L82955-12	58
WG192221-1	65
WG192221-2	56
WG192221-3	58
WG192221-4	60
WG192221-5	57
WG192221-6	72

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:		
I DM: Mod	han Fikev	

	CHAIN O	- 0031001	
	Relinquished by	Date 1/9/24	Time /2:10
	Received by	Date 1-9-21	Time 1210
	SamplelNumbers		[AII]
Sample Number	P82955-5	P82955-6	
QC Link	And and the Control of the Control of the Prince of the Control of		
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/8/24 21:31	1/8/24 21:32	
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan Flk	ev

	CHAIN O	FCUSTODT		
	Relinquished by	Date		Time
	Received by	Date		Time
	Sample Numbers			[AII]
Sample Number	P82955-7	P82955-8		
QC Link	1 (PAD Charles Co. Carlos de Adulado Aradella Al Carlos Carlos de Adulados de Comercianos Carlos de Carlos de Carlos Carl	A CONTRACTOR OF THE CONTRACTOR	anamanana wasanana	Amerika se semme situat tin tillik kin kin tim se sem e hall mentatat in terrement tim kin til til til til tim se kin til
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	<u> </u>	
Short Loc Desc			and the second second	
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station		
Site	I-5TAPE	I-5TAPE		
Comments	Second grab	Second grab		
Start Date/Time	1/8/24 22:34	1/8/24 22:3	34	
End Date/Time	N/A	NJA		
Time Span	0	0		
Sample Depth	N/A	N/A		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkev	

	CHAIN OF	ועטונטט	
	Relinquished by Nick Brtis	Date	Time 15:21
	Received by	Date 1/18/24	Time 15: 21
	Sample Numbers		[AII]
Sample Number	P82955-9	P82955-10	
QC Link			
Locator	SCTF-TB25-IN	SCTF-TB25-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/18/24 14:00	1/18/24 14:00	
End Date/Time	N4	NA	
Time Span	### The second of the second o		
Sample Depth	NA	NA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC: ______ LPM: Meghan Elkey

	CHAIN OF	נטטוטטו	
	Relinquished by Nick Fartish	Date 	Time 15:21
	Received by	Date 1/18/24	Time 15:81
	Sample Numbers		[All]
Sample Number	P82955-11	P82955-12	
QC Link	To the first of the second sec	200 APR 2 1 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	No damental 1883 are production and additional and additional and additional and a state of the
Locator	SCTF-TB25-IN	SCTF-TB25-OUT	
Short Loc Desc			a summing a market as a secret contains a miles in the metal and a secret contains a
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/18/24 15:00	1/18/24 15:00	
End Date/Time	WA .		
Time Span	p	6	
Sample Depth	NA	NA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan Elkey	

	CHAIN OF	C0310D1	
į ;	Relinquished by	Date	<i>Tim</i> e
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82955-17		
QC Link	Liphon particle 2.00 milestrative of the control of		Sandallander (1997) in the periodical desirable states of the property of the comment of the desirable states as the comment of the comment o
Locator	FIELDDUP		
Short Loc Desc			
Locator Desc	FIELD DUPLICATE	The second secon	the committee of the special prime and the committee of the control of the committee of the
Site	FADQC		and the second s
Comments	Second grap of inlet		
Start Date/Time	1/8/24 22:32		
End Date/Time	N/A		
Time Span	0		
Sample Depth	N/A		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)		

r.—	· · · · · · · · · · · · · · · · · · ·			ECEIPT RECORD	•		
	gin Number(s): 82 955-15-8,171	Project No.: 4 2/520-20		Sub-Contracting; Y / (N)	List Product(s):		
COI	ellect Date(s): /-8-24	Receive Date: 1-9-29	, "	Changes: Y (N	List Parameter(s):		
H	A B 1 B 1 B 1 B 1 B 1 B 1 B 1 B 1 B 1 B	ECEIPT CONDITIONS		FIELD PRESERVATION OF	ECKLIST/Circle/and/or/ched	applicable sel	ections)
١	CONDITION Acceptable? Comme	nt ID <u>CONDITION</u> <u>Acceptab</u>	le? Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	
-	bels / Fieldsheets / / N	Volumes		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ fleid sheet for F. pH	Y / N	
_	ontainer // / / N mperature (w/ ice) // / N / NA	Holding Times //r N		CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	Notify ORG
161	177 167164	Delivery Location /Y N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N/NA	Deliver to CONV
	BOTTLE COUNT (#) AND DE	SORIETION and SAMPLE NUMBERS **		CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 mln	√ field sheet for pH	Y / N	Preserve by SM
#		ription: Sample Numbers		ICP / HG-CVAA-M / pH < 2 W/ HNO ₃	☐ Check pH	Y/N	☐ Deliver to CONV
<u> </u>	40 mL clear vial (VOA):			OBG / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	Preserve By SM
<u> </u>	60 mL clear glass (PHYTO):			PHYTOPLANKTON / Lugois	Visually inspect	Y / N	Preserve by SM
	60 mL CWM HDPE:			TKN / COD pH < 2 w/ H₂SO₄ within 15 min	☐ Check pH	Y/N	☐ Deliver to MICRO ☐ Preserve By SM
-	125 mL AWM HDPE:			TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
┝	125 mL CNM HDPE:			TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y/N	
<u> </u>	125 mL CWM HDPE:			WDC / FIXED	Visually Inspect	Y / N	Deliver to CONV
	125 mL GANM:			Other:			Deliver to CONV
_	125 mL GANM w/HCI			ROUNTINE SMEDRESTERVANION		eck amplicable	eologione)
_	250 mL AWM HOPE:			PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE;			Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y / N	
_	250 mL CWM HDPE (MICRO):			HG-CVAA-L-Teflon (T/D)/pH < 2 w/ULTRA HCI	☐ Preserve & deliver	NA NA	☐ Adjust pH NA
D	250 mL GAWM: 5-8,17		****	ICPMS / HG-CVAA-M (T/D)/pH<2 w/ULTRA HNO3	Preserve & deliver	NA NA	NA .
<u> </u>	250 mL GAWM w/ H2SO4:			TOC / pH < 2 w/ HCl	☐ Preserve & deliver	NA NA	NA NA
	300 mL WDO (8 hour HT):			Other:	□ LiezetAs or delinet	- NA	
	500 mL AWM HDPE:			Other:			
ļ	500 mL CWM HDPE:			INVERFERENCETES	T (Circle and/or check applied	ania salawiwa	
\vdash	500 mL CWM PP (MICRO):			Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
<u> </u>	500 mL HDPE (METALS):			BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	
ļ	500 mL HDPE, double-bagged (METALS):			CN / Chlorine (Check documentation)	Y / N / not tested	Y / N	Deliver to ORG
<u> </u>	500 mL Teflon (Hg):			CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y / N	Deliver to CONV
<u> </u>	500 mL Teflon, double-bagged (METALS):			VOA / Chiorine (Check documentation)	Y / N / not tested	Y / N	Deliver to CONV
	500 mL GANM / GAWM:			Other:			☐ Deliver to ORG
	500 mL Polystyrene Filtration Units (METALS):				HEADSPACE CHECK		
	1L AWM HDPE:			PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
	1L CWM HOPE:			MICRO (Visually inspect)	Headspace (@ 1")	Y / N	□ Notify MICRO
<u> </u>	1L CWM PP (MICRO):			TOTSULFIDE (Visually Inspect)	Headspace (< 1")	Y/N	
	1L GANM:			VOA (Visually inspect)	Zero headspace	Y / N	□ Notify CONV □ Notify ORG
	1L GCWM: 1L GAWM w/ H ₂ SO ₄ :			WDO (Visually inspect)	Zero headspace	Y/N	Notify CONV
				Other:			D Rollly COMV
	2L CWM HDPE:			FIELD FILTRATION CHEC	KLIST (Circle and/or check ar	olicable selecti	innsi
	Other;			Product (SM Action)	Field Filtered		Corrective Action
	COMMENTS	VANOTIFICATIONS		ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N:	☐ Deliver to CONV
				NO2 / NO3 / NO23 / NH3 / St (Documentation)	Y (within 1 day y / n) / N	Y / N/NA	Deliver to CONV
				Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N		Deliver to METALS
				DQC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N		☐ Deliver to CONV
				DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to CONV
				Other:			
	CO. C. AQUATOV C. C.			Other:		-	
	CC: AQUATOX, CONV, METALS, MIC	······································		<u>.</u>			
	1. Deliver dissolved Hg-CVAF	samples to METALS for filtration.	4. Deliver pH, WDO.	and all MICRO samples ASAP to appropriate section	for immediate processing		
	NOTES 2. Deliver double bagged meta	semples to METALS for preservation.	5. Enter "Time Spar	n" for composite samples during sample togin.			
	3. Do not test of preserved	BNA and TOTSULFIDE samples.		into 60 mL clear class if PHYTOOLIAL is requested			

6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

Date / Time Completed:

<u> 164 95 72 79 79 7</u>

SM Signature:

	in Number(s): 82 9,55	- 44 4 1 6			LOLII I ILLOO			
		Project No.: (4)			Sub-Contracting: Y N	List Product(s):		
COI		Receive Date: 1 / 18	29	4570	Changes: Y (N)	List Parameter(s):		-
	SAMPLE RECEIPT				FIELD PRESERVAT	ION CHECKLIST (Circle and/or check	applicable seld	ections)
	CONDITION Acceptable? Comment ID	CONDITION	Acceptable?	Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	els / Fieldsheets // N	Volumes	MY N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	Y/N	☐ Notify ORG
	tainer /Y// N	Holding Times	Y / N		CN / pH > 12 w/ NaOH within 15 min	Check pH	Y/N	☐ Deliver to CONV
reit	perature (w/ ice) // N/ NA	Delivery Location	y/n		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N / NA	☐ Preserve by SM
	BOTTLE COUNT (#) AND DESCRIP	TION and SAMPLE NU	MBERS		CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15	min √ fleid sheet for pH	Y/N	☐ Deliver to CONV
#	Bottle Description:	Sample Numbers			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
	40 mL clear vial (VOA):				O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	Preserve by SM
<u> </u>	60 mL clear glass (PHYTO):				PHYTOPLANKTON / Lugois	Visually inspect	Y / N	☐ Deliver to MICRO
	60 mL CWM HDPE:				TKN / COD pH < 2 w/ H2SO4 within 15 min	Check pH	Y / N	☐ Preserve By SM
ļ	125 mL AWM HDPE:				TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	☐ Preserve By SM
<u> </u>	125 mL CNM HDPE:				TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV
<u> </u>	125 mt, CWM HDPE:				WDO / FIXED	Visually inspect	Y / N	Deliver to CONV
L	125 mL GANM:	·			Other:			LI Bellyel to COMV
<u> </u>	125 mL GANM w/HCi				ROUTINE SM PRESERV	ATION CHECK IST (Circle and/or ch	eck applicable	selections)
<u> </u>	250 mL AWM HDPE;				PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
<u> </u>	250 mL CWM HDPE:				Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaO		Y / N	
L	250 mL CWM HDPE (MICRO):				HG-CVAA-L-Teflon (T / D) / pH < 2 w/ ULTRA HC		NA	Adjust pH
4	250.mL GAWM: 9~13				ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA H		NA NA	NA NA
Ι'	250 mL GAWM w/ H2SO4:				TOC / pH < 2 w/ HCl	Preserve & deliver	NA NA	NA NA
	300 ml, WDO (8 hour HT);				Other:	☐ Preserve & deliver	NA.	144
	500 mL AWM HDPE:				Other;			
	500 mL CWM HDPE:				INTERESES	CE TEST (Circle and/or check application)	able cologiane	
	500 mL CWM PP (MICRO):				Product / Interference (SM Action)	Positive Test?	Treated	
	500 mL HDPE (METALS):				BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	Corrective Action
	500 mL HDPE, double-bagged (METALS):	· · · · · · · · · · · · · · · · · · ·			CN / Chiprine (Check documentation)	Y / N / not tested		Deliver to ORG
	500 mL Teflon (Hg):				CN / Sulfide (Check field sheet for DF)		Y / N	Deliver to CONV
	500 mL Teflon, double-bagged (METALS):				VOA / Chlorine (Check documentaion)	Y / N / not tested	Y / N	Deliver to CONV
	500 mL GANM / GAWM:				Other:	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL Polystyrene Filtration Units (METALS):					HEADSPACE CHECK		
Г	1L AWM HDPE:				PRODUCT (SM Action)		A t - t - 2	0
	1L CWM HDPE:				MICRO (Visually inspect)	Check For	Acceptable?	Corrective Action
	1L CWM PP (MICRO):			-	TOTSULFIDE (Visually inspect)	Headspace (@ 1")	Y/N	□ Notify MICRO
_	1L GANM;				VOA (Visually inspect)	Headspace (< 1")	Y / N	Notify CONV
	1L GCWM:				WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG
	1L GAWM w/ H₂SO₄:			· · · · · · · · · · · · · · · · · · ·	Other:	Zero headspace	Y/N	□ Notify CONV
	2L CWM HDPE;					Wayl-OV/8G #CT-82		
l	Other:				Product (SM Action)	N CHECKLIST (Circle and/or check ap Field Filtered		
	COMMENTS / NO	TEICATIONS			ORTHOP (Check Field Sheet)		Field Blank	Corrective Action
					NO2 / NO3 / NO23 / NH3 / St (Documentation)	Y (within 15 min y / n) / N	Y/N	Deliver to CONV
					Dissolved Metals (Check Field Sheet)	Y (within 1 day y / n) / N Y (within 15 min y / n) / N	Y / N / NA Y / N / NA	Deliver to CONV
					DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA Y / N / NA	Deliver to METALS
					DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to CONV
					Other:	· (white to maily / tij / te	1 / N/NA	☐ Deliver to CONV
					Other:			
	CC: - AQUATOX, - CONV, - METALS, - MICRO, -	OPC C		**********				
	MODELON, L. OURT, L. BILLIALS, L. MIURU, L.	. VAG. L						

NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
- 2. Deliver double-bagged metals samples to METALS for preservation.
- 3. Do not test pH for preserved BNA end TOTSULFIDE samples.
- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

b. Do not test per for preserved BNA eng TOTSULEIDE samples.

Date / Time Completed:		

JAN 18 24 15191



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: January 26, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, January 24, 2024

Stormwater samples were collected by Herrera Environmental Consultants on January 24, 2024. The samples were delivered to the King County Environmental Laboratory on the date of sample collection. The samples were assigned lab ID numbers L82955-13 to -16 and L82954-1 to -4 and -9. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Project: 421520-200 Locator: SCTF-TB4-IN Descrip: SCTF-TB4 upstream Sample: L82955-13 Matrix: LG STORM WTR

ColDate: 1/24/24 7:58 WET Weight Basis

Project: 421520-200 SCTF-TB4-OUT Locator: Descrip: SCTF-TB4 downstrea

Sample: L82955-14 Matrix: LG STORM WTR ColDate: WET Weig 1/24/24 7:59

SCTF-TB4-IN Locator: Descrip: SCTF-TB4 upstream Sample: L82955-15 Matrix: LG STORM WTR ColDate: 1/24/24 9:07

421520-200

Basis

Project:

Veight Basis	llw⊨ı	Weight I

												0.0			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.767		0.002	0.01	ug/L	0.374		0.002	0.01	ug/L	0.513		0.002	0.01	ug/L

Project: 421520-200 Locator: SCTF-TB4-OUT Descrip: SCTF-TB4 downstrea L82955-16 Sample: LG STORM WTR

Matrix: ColDate: 1/24/24 9:08

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-IN Descrip: SCTF-TB2 upstream

Sample: L82956-1 Matrix: LG STORM WTR ColDate: 1/24/24 7:55 WET Weight Basis

Matrix: LG STORM WTR ColDate: 1/24/24 7:56

Project:

Locator:

Descrip:

Sample:

WET Weight Basis

421520-200

L82956-2

SCTF-TB2-OUT

SCTF-TB2 downstrea

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.412		0.002	0.01	ug/L	0.798		0.002	0.01	ug/L	0.641		0.002	0.01	ug/L

 Project:
 421520-200

 Locator:
 SCTF-TB2-IN

 Descrip:
 SCTF-TB2 upstream

 Sample:
 L82956-3

Matrix: LG STORM WTR ColDate: 1/24/24 9:04

WET Weight Basis

Project: 421520-200 Locator: SCTF-TB2-OUT Descrip: SCTF-TB2 downstrea

| Sample: L82956-4 | Matrix: LG STORM WTR | ColDate: 1/24/24 9:05

WET Weight Basis

Descrip: FIELD DUPLICATE
Sample: L82956-9
Matrix: LG STORM WTR
ColDate: 1/24/24 9:07

421520-200

FIELDDUP

WET Weight Basis

Project:

Locator:

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.519		0.002	0.01	ug/L	0.534		0.002	0.01	ug/L	0.546		0.002	0.01	ug/L

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
SCTF-TB4-IN	421520-200	L82955-13	1/24/2024 7:58	0.767
SCTF-TB4-OUT	421520-200	L82955-14	1/24/2024 7:59	0.374
SCTF-TB4-IN	421520-200	L82955-15	1/24/2024 9:07	0.513
SCTF-TB4-OUT	421520-200	L82955-16	1/24/2024 9:08	0.412
SCTF-TB2-IN	421520-200	L82956-1	1/24/2024 7:55	0.798
SCTF-TB2-OUT	421520-200	L82956-2	1/24/2024 7:56	0.641
SCTF-TB2-IN	421520-200	L82956-3	1/24/2024 9:04	0.519
SCTF-TB2-OUT	421520-200	L82956-4	1/24/2024 9:05	0.534
FIELDDUP	421520-200	L82956-9	1/24/2024 9:07	0.546
* Not converted to dry weight basis				

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

WG192300 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82955-13	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 7:58	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-6	
L82955-14	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 7:59	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-6	
L82955-15	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 9:07	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82955-16	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 9:08	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82956-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 7:55	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82956-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 7:56	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82956-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 9:04	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82956-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 9:05	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
L82956-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	1/24/2024 9:07	1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
WG192300-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	
WG192300-2	SB		AQ6PPDQ-LCMS	OTHR WTR		1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	WG192300-1
WG192300-3	MS		AQ6PPDQ-LCMS	STORM WTR		1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	L82955-16
WG192300-4	MSD		AQ6PPDQ-LCMS	STORM WTR		1/25/2024 7:00	1/25/2024 10:30	-	WG192300-3 L82955-16
WG192300-5	LD		AQ6PPDQ-LCMS	STORM WTR		1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	L82956-3
WG192300-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		1/25/2024 7:00	1/25/2024 10:30	WG192300-1,-2,-3,-4,-5,-	MED

Workgroup: WG192300 6PPDQ by LCMS

MB:WG192300-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG192300-2 MB:WG192300-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.21 105 50--150

MSD:WG192300-4 MS:WG192300-3 L82955-16 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value Lab Limit** MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.412 0.2 0.613 101 50--150 0.2 0.618 103 1 0--45 6ppd-quinone

LD:WG192300-5 L82956-3 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.5190.5200--40

CCC:WG192300-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.03
 103
 80--120

King County Environmental Laboratory QC Report

WDOE BMP Stormwater Herrera, L82955 and L82956, January 24, 2024

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82955-13	74
L82955-14	73
L82955-15	77
L82955-16	79
L82956-1	71
L82956-2	73
L82956-3	78
L82956-4	76
L82956-9	72
WG192300-1	83
WG192300-2	83
WG192300-3	74
WG192300-4	73
WG192300-5	74
WG192300-6	99

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkev	

CHAIN OF CUSTODY			
	Relinquished by	Date 1/9/24	Time /2:10
	Received by	Date 1-9-211	Time 1210
	SamplelNumbers		[AII]
Sample Number	P82955-5	P82955-6	
QC Link		1000 - A	
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/8/24 21:31	1/8/24 21:32	
End Date/Time			
Time Span	and printing any amount account and principle (As As A		
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LOM: Moghan Fikey	

	CHAIN O	F 6031001	
	Relinquished by	Date	<i>Tim</i> e
	Received by	Date	<i>Tim</i> e
	Sample Numbers		[AII]
Sample Number	P82955-7	P82955-8	
QC Link	eggs of end-analytic Philippin (Charles of the Sharp Sheeks and Analysis) (Charles of the Sharp Sheeks of the Shee		to demonstrate the control of the co
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	and the second s
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/8/24 22:34	1/8/24 22:34	
End Date/Time	N/A	N/A	
Time Span	0	0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I DM: Mechan Fikey	

	CHAIN OF	000,00,	
	Relinquished by Nick Brtis	Date 	Time 15:21
	Received by	Date 1/18/24	Time 15:31
	Sample Numbers		[AII]
Sample Number	P82955-9	P82955-10	
QC Link			
Locator	SCTF-TB25-IN	SCTF-TB25-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/18/24 14:00	1/18/24 14:00	
End Date/Time	M	NA	
Time Span	Ø		
Sample Depth	NA	NA	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan Fikev	

CHAIN OF CUSTODY				
	Relinquished by Nick Factish	Date 1 / 18424	Time 15:21	
	Received by	Date 1/18/24	Time 15:01	
	Sample Numbers		[AII]	
Sample Number	P82955-11	P82955-12		
QC Link	Al gran 1 part demandend destructives to the second destruction of the		Andrew State (1888) (18	
Locator	SCTF-TB25-IN	SCTF-TB25-OUT		
Short Loc Desc				
Locator Desc	SCTF-TB2.5 upstream sampling station	SCTF-TB2.5 downstream sampling station		
Site	I-5TAPE	I-5TAPE		
Comments	Second grab	Second grab		
Start Date/Time	1/18/24 15:00	1/18/24 15:00		
End Date/Time	VA	NA		
Time Span	Ø	6		
Sample Depth	NA	NA		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	

CHAIN OF COSTODY				
	Relinquished by	Date	Time	
	Received by	Date	Time	
	Sample Numbers		[All]	
Sample Number	P82955-17			
QC Link		to make a policy defined (State and Association of State and Associatio		
Locator	FIELDDUP			
Short Loc Desc				
Locator Desc	FIELD DUPLICATE	and the second s	to the contract of the contract time of the contract contract to the contract time time to the contract time time to the contract time time time time time time time tim	
Site	FADQC		g a sauce a come a complete a change of a sauce of the sa	
Comments	Second grab			
Start Date/Time	1/8/24 22:32			
End Date/Time	N/A			
Time Span				
Sample Depth	N/A			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)			

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	`.	
LPM: Meghan Elkev		

	CHAIN OF CUSTODY				
	Relinquished by Scott Shumwag	Date /24 /24	Time 14:12		
	Received by	Datehyky	Time 4 /2		
	Sample Numbers		[AII]		
Sample Number	P82955-13	P82955-14			
QC Link	go Judy Stanto Children (1994)				
Locator	SCTF-TB4-IN	SCTF-TB4-OUT	and the state of t		
Short Loc Desc					
Locator Desc	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location			
Site	I-5TAPE	I-5TAPE			
Comments	First grab	First grab			
Start Date/Time	1/24/24 7:58	1/24/24 7:59			
End Date/Time	N/A	N/A			
Time Span	0	0			
Sample Depth	N/A	N/A			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)			

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU T	C:
I DM.	Maghan Elkey

	Olimin Ci		
	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82955-15	P82955-16	
QC Link			
Locator	SCTF-TB4-IN	SCTF-TB4-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB4 upstream sampling location	SCTF-TB4 downstream sampling location	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/24/24 9:07	1/24/24 9:08	
End Date/Time	N/A	NA	
Time Span	0	0	
Sample Depth	N/A	NIA	
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login Number(s): X 2 455 - (5-8) 7) Project No.: 4 21 520 5000 Sub-Contracting; Y / 60 List Product(s): Collect Date(s): 2 4 Changes: Y / 8 List Parameter(s): SAMPLE RECEIPT CONDITIONS CONDITION Acceptable? Comment ID CONDITION Acceptable? Comment ID PRODUCT / Proceedings	
SAMPLE RECEIPT CONDITIONS FIELD PRESERVATION CHECKLIST (Circle and/or check applicable)	
CONDITION CHECKLIO CHECK ADDICABLE AND CHECKLIO CHECK ADDICABLE	
	elections)
Labels / Fieldsheets / W. I. N. Volume - Acceptable - Comment to PRODUCT / Preservation SM Action Acceptable	? Corrective Action
Container VI VI VI VI VI VI VI V	☐ Notify ORG
Temperature (w/ ice) // N CN / pH > 12 w/ NaOH within 15 min	☐ Deliver to CONV
PRINTED COUNTY WIND CONTROL OF THE PRINTED CO	☐ Preserve by SM
BOTTLE COUNT (#) AND DESCRIPTION and SAMPLE NUMBERS CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	☐ Deliver to CONV
# Bottle Description: Sample Numbers ICP / HG-CVAA-M / PH < 2 w/ HNO ₃ Check pH Y / N	Preserve By SM
60 ml clear (DIVTO). Check documentation Y / N	☐ Preserve by SM
60 mL CWM HDPE: PHYTOPLANKTON / Lugols Visually inspect Y / N	☐ Deliver to MICRO
125 mL AWM HDPE: TKN / COD pH < 2 w/H ₂ SQ ₄ within 15 min	Preserve By SM
[FOC/PRI 2 W HOT (NP/DES ONLY)] Check at 1 V / N	Preserve By SM
125 mL CNM HDPE: TOTSULFIDE / pH > 9 w/ NaOH, ZnAc Check documentation Y / N	☐ Deliver to CONV
125 mL CWM HDPE; WDO / FIXED Visually inspect Y / N	☐ Deliver to CONV
Cite:	
125 mL GANM w/HCl 250 mL AWAM HDRE	e selections)
PRODUCT / Preservation SM Action Accentable	
250 mL CWM HDPE: Chlorinated Pesticides / phi 5 - 9 w/ H ₂ SO ₄ or NaOH	☐ Adjust pH
250 ML CWM HDPE (MICRO): HG-CVAA-L-Teffon (T/D)/PH < 2 w/ ULTRA HCI Response 4 deliver NA	NA
1) 250 mL GAWM: 0 - 0 / 1 / ICPMS / HG-CVAA-M (T/D) / DH < 2 w/ ULTRA HNO.	NA .
250 ML GAWM W HZSO4: TOC / pH < 2 W HCI Process & deliver NA	NA
SUU ME WUDO (8 NOUR HT): Cither:	
500 mL AWM HDPE: Other:	
500 mL CWM HDPE: INTERFERENCE TEST (Circle and/or check applicable selection of the complete	G
Product / Interference (SM Action) Positive Test? Treated	Corrective Action
500 mL HDPE (METALS): BNA / Chlorine (Check documentation) Y / N / not tested Y / N	
500 mL HDPE, double-bagged (METALS): CN / Chlorine (Check documentation) Y / N / not tested	Deliver to ORG
500 mL Teffon (Hg): CN / Sulfide (Check field sheet for DF) Y / N / not tested Y / N	Deliver to CONV
SUU ML Tetton, double-bagged (METALS): VOA / Chlorine (Check documentalion)	Deliver to CONV
500 mL GANM / GAWM: Other:	☐ Deliver to ORG
500 mL Polystyrene Filtration Units (METALS):	
11, AWM HDPE:	Corrective Action
1L CWM HDPE:	
1L CWM PP (MICRO):	Notify MICRO
1L GANM:	☐ Notify CONV
1L GCWM:	☐ Notify ORG
1L GAWM w/ H ₂ SO ₄ ; Zero headspace Y / N Other,	☐ Notify CONV
OL OVER UPDE	
Other: FIELD FILTRATION CHECKLIST (Gircle and/or check applicable set Product (SM Action) Field Filtered Field Blan	
COMMENTS NOTIFICATIONS	
NOONDO NO	☐ Deliver to CONV
Discoluded Mattels (Charle Share)	Deliver to CONV
DOC Deliver (Nette Unit)	Deliver to METALS
DCOD / CR(VI) (Deliver / Notify Unit) Y (within 15 min or 1 day) / N Y / N / NA DCOD / CR(VI) (Deliver / Notify Unit) Y (within 15 min y / n) / N Y / N / NA	☐ Deliver to CONV
Cither:	☐ Deliver to CONV
Cther:	

NOTES

1. Deliver dissolved Hg-CVAF samples to METALS for filtration.

Deliver double-bagged metals samples to METALS for preservation.
 Do not test of the preserved BNA and FOTSULFIDE samples.

4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.

5. Enter "Time Span" for composite samples during sample login.

6. Split algae sample into 60 mt. clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

Login Number(s): 82 9 55	Project No.: 47 1520	Sub-Contracting; Y N	List Product(s):		
Collect Date(s): 1/(8/2 4	Receive Date: 1/18/2-1	Changes: Y (N)	List Parameter(s):		
SAMPLE RECEIP			EGKLIST (Circle and/or check		7,4-6
CONDITION Acceptable? Comment ID	CONDITION Acceptable? Comment I		SM Action		
Labels / Fieldsheets // N	Volumes N N	BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	SM ACTION √ field sheet for F. pH	Acceptable?	Corrective Action
Container /Y/ N	Holding Times Y / N	CN / pH > 12 w/ NaOH within 15 min		Y / N	□ Notify ORG
Temperature (w/ ice)	Delivery Location	NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N Y / N / NA	☐ Deliver to CONV
BOTTLE COUNT (#) AND DESCRI	1 2	CR(VI) / TOTCR(VI) / PH 9.3 - 9.7 w/ NaOH w/in 15 min	☐ Check pH √field sheet for pH	Y/N	Preserve by SM
	: Sample Numbers	ICP / HG-CVAA-M / pH < 2 w/ HNO ₃		Y / N Y / N	Deliver to CONV
40 mL clear vial (VOA):		O&G / HEM / PHENOL / PH < 2 w/ H ₂ SO ₄	Check pH Check documentation	Y / N Y / N	Preserve By SM
60 mL clear glass (PHYTO):		PHYTOPLANKTON / Lugois	Visually inspect	Y / N Y / N	Preserve by SM
60 mL CWM HDPE:		TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N Y/N	Deliver to MICRO
125 mL AWM HDPE:		TOC / pH < 2 w/ HCl (NPDES only)	☐ Check pH	Y / N	Preserve By SM
125 mL CNM HDPE:		TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check pH Check documentation	Y/N	☐ Preserve By SM☐ Deliver to CONV
125 mL CWM HDPE:	•	WDO / FIXED	Visually inspect	Y / N	Deliver to CONV
125 mL GANM:		Other:			- Denver to CONV
125 mL GANM w/HCI		ROUTINE SM PRESERVATION	CHECKLIST (Circle and for ch	eck apolicable	selections)
250 mL AWM HDPE:		PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
250 mL CWM HDPE:	,	Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y / N	Adjust pH
250 mL CWM HDPE (MICRO):		HG-CVAA-L-Teflon (T/D)/pH < 2 w/ULTRA HCI	☐ Preserve & deliver		NA
4 250.mL GAWM: 9-13-		ICPMS / HG-CVAA-M (T/D) / pH < 2 w/ ULTRA HNO ₃	Preserve & deliver		NA
250 mL GAWM w/ H2SO4:		TOC / pH < 2 w/ HCl	☐ Preserve & deliver		NA
300 mL WDO (8 hour HT):		Other:			
500 mL AWM HDPE;		Other:			
500 mL CWM HDPE:		INTERFERENCE TE	ST (Circle and/or check applic	able selections)	
500 mL CWM PP (MICRO):		Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
500 mL HDPE (METALS):		BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG
500 mL HDPE, double-bagged (METALS):		CN / Chlorine (Check documentation)	Y / N / not tested	Y/N	Deliver to CONV
500 mL Teflon (Hg):		CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y/N	☐ Deliver to CONV
500 mL Tefion, double-bagged (METALS):		VOA / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
500 mL GANM / GAWM:		Other:			
500 mL Polystyrene Filtration Units (METALS):			HEADSPACE CHECK		
1L AWM HDPE:		PRODUCT (SM Action)	Check For	Acceptable?	Corrective Action
1L CWM HDPE:		MICRO (Visually inspect)	Headspace (@ 1")	Y / N	☐ Notify MICRO
1L CWM PP (MICRO):		TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y/N	☐ Notify CONV
1L GANM:		VOA (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG
1L GCWM:		WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify CONV
1L GAWM w/ H ₂ SO ₄ :		Other;			
2L CWM HDPE:		FIELD FILTRATION CHE	CKLIST (Circle and/or check a		
Other:		Product (SM Action)	<u>Field Filtered</u>		Corrective Action
COMMENTS / NO	THECATIONS	ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV
		NO2 / NO3 / NO23 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet)	Y (within 1 day y / n) / N	Y / N / NA	☐ Deliver to CONV
		DOC (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to METALS
		DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA Y / N / NA	☐ Deliver to CONV
		Other:	Y (within 15 min y / n) / N	I / N / NA	☐ Deliver to CONV
		Other			

CC: 🗆 AQUATOX, 🗔 CONV, 🗔 METALS, 🗆 MICRO, 🗆 ORG, 🛭
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NOTES

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- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

JAN 18 74 15.31

Logir	n Number(s): 3295	5		Project No.:	42/520,	-200		Sub-Contracting: Y	(/ N)	List Product(s):		
Colle	ct Date(s): 1 2년 2년	1		Receive Date:	1/24/2	-4		Changes: Y / A		List Parameter(s):		
		. S	AMPLE RECEIPT	CONDITION	3				IELDIPRESERVATION CHI	CKLIST (Circle and/or check	applicable sele	ctions)
	CONDITION	Acceptable?	Comment ID	CONDI	TION AC	ceptable?	Comment ID		JCT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets	/Y / N		Volumes		M/N		BNA / pH 6 - 9 w/ H ₂ \$O ₄		√ field sheet for F. pH	Y / N	☐ Notify ORG
	ainer	/ Y/N		Holding Times	i	Y/N		CN / pH > 12 w/ NaOH w	lthin 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
Temp	erature (w/ ice)	(y/IN/NA		Delivery Locat		Y/N		NO23 pH < 2 w/ H ₂ SO ₄		☐ Check pH	Y / N/NA	Preserve by SM
0.0	BO	TTLE ÉQUNT (#) AND DESCRIP	TION and SA	MPLE NUMBE	His		CR(VI) / TOTCR(VI) / pH	19.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y / N	☐ Deliver to CONV
#		Bo	ottle Description:	Sample Nun	nbers			ICP / HG-CVAA-M / pH <	< 2 w/ HNO ₃	☐ Check pH	Y/N	Preserve By SM
	40 mL clear vial (VOA):							O&G / HEM / PHENOL /	pH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	☐ Preserve by SM
	60 mL clear glass (PHYTO):							PHYTOPLANKTON / Lug	gols	Visually inspect	Y / N	☐ Deliver to MICRO
	60 mL CWM HDPE:		·					TKN/COD pH < 2 w/H ₂	₂ SO ₄ within 15 min	☐ Check pH	Y / N	☐ Preserve By SM
	125 mL AWM HDPE:							TOC / pH < 2 w/ HCI (NPI		☐ Check pH	Y / N	Preserve By SM
	125 mL CNM HDPE:							TOTSULFIDE / pH > 9 w/	/ NaOH, ZnAc	Check documentation	Y / N	☐ Deliver to CONV
	125 mL CWM HDPE:							WDO / FIXED		Visually inspect	Y / N	☐ Deliver to CONV
	125 mL GANM:							Other:				
. 1	125 mL GANM w/HCI	14								CHECKLIST (Circle and/or ch	eck applicable	selections)
4		<i>حا</i> = ا						PRODU	UCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:								/ pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y / N	☐ Adjust pH
-	250 mL CWM HDPE (MICRO	O):							D) / pH < 2 w/ ULTRA HCI	Preserve & deliver	NA	NA
	250 mL GAWM:								T / D) / pH < 2 w/ ULTRA HNO ₃	☐ Preserve & deliver	NA	NA
	250 mL GAWM w/ H2\$O4:							TOC / pH < 2 w/ HCl		Preserve & deliver	NA	NA
	300 mL WDO (8 hour HT):							Other:				
	500 mL AWM HDPE:							Other:				
-	500 mL CWM HDPE: 500 mL CWM PP (MICRO):									T (Circle and/or check application)		
_	500 mL HDPE (METALS):		,					Product / Interfere		Positive Test?	Treated	Corrective Action
	500 mL HDPE, double-bagge	od /METAL CV						BNA / Chlorine (Check de	······	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL Teflon (Hg):	ed (NETALS).						CN / Chlorine (Check dod CN / Sulfide (Check field		Y / N / not tested	Y / N	☐ Deliver to CONV
	500 mL Teflon, double-bagge	ed (METALS):						VOA / Chlorine (Check de	· · · · · · · · · · · · · · · · · · ·	Y / N / not tested	Y / N	Deliver to CONV
	500 mL GANM / GAWM:	ou (MET/LO).						Other:	Contentatori	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL Polystyrene Filtration	n Units (METALS)	,					Outci.		HEADSPACE CHECK		
	1L AWM HDPE:	(1112 (1112)	*					PROD	DUCT (SM Action)	Check For	Acceptable	Competing Action
	1L CWM HDPE:							MICRO (Visually inspect)		Headspace (@ 1")	Acceptable?	Corrective Action
	1L CWM PP (MICRO):							TOTSULFIDE (Visually in		Headspace (eg 1")	Y / N	□ Notify MICRO
	1L GANM:		· · · · · · · · · · · · · · · · · · ·					VOA (Visually inspect)		Zero headspace	Y / N	☐ Notify CONV ☐ Notify ORG
	1L GCWM;							WDO (Visually inspect)		Zero headspace	Y / N	□ Notify CONV
	1L GAWM w/ H₂SO₄:							Other:				IIII NOLLY CONV
	2L CWM HDPE:		-						FIELD FILTRATION CHEC	KLIST (Circle and/or check a	onlicable select	ions)
	Other:							Prod	Juct (SM Action)	Field Filtered		Corrective Action
		0	OMMENTS / NO	TIFICATIONS				ORTHOP (Check Field S		Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV
								NO2 / NO3 / NO23 / NH3		Y (within 1 day y / n) / N	Y / N/NA	☐ Deliver to CONV
								Dissolved Metals (Checi	•	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to METALS
			·					DOC (Deliver / Notify Uni	*	Y (within 15 min or 1 day) / N	Y / N / NA	Deliver to CONV
 						····		DCOD / CR(VI) (Deliver /	/ Notify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV
<u> </u>								Other:				
L	,							Other:				
	CC. D. AOUATOY D. C	. .										

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NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
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WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan Fikey	

	Relinquished by	Date 1 /24/24	Time 14113
	Regeived by	Date 2 2 7	Time 14 13
	Sample Numbers		[AII]
Sample Number	P82956-1	P82956-2	
QC Link			
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	Section 12 and the Section 12 an
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	1/24/24 7:55	1/24/24 7:56	
End Date/Time	N/A	N/A	
Time Span	0	8	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
I PM: Meghan F	lkev

•	Climit Oi	C007 CD 7	
4 	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[All]
Sample Number	P82956-3	P82956-4	
QC Link			
Locator	SCTF-TB2-IN	SCTF-TB2-OUT	
Short Loc Desc			
Locator Desc	SCTF-TB2 upstream sampling station	SCTF-TB2 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	1/24/24 9:04	1/24/24 9:05	
End Date/Time	N/A	NA	
Time Span		0	
Sample Depth	N/A	N/A	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

WDOE BMP - Herrera 6PPDQ Add-On TAPE

FSU TC:	
LPM: Meghan Elkey	

	CHAIN OF	- 6081007					
	Relinquished by	Date	Time				
	Received by	Date	Time				
	Sample Numbers		[AII]				
Sample Number	P82956-9						
QC Link							
Locator	FIELDDUP						
Short Loc Desc		and the second					
Locator Desc	FIELD DUPLICATE	and with the control of the control	galgar and consistent amount of the constitution of the constituti				
Site	FLDQC		to describe many thank the second of the object of the obj				
Comments	Field dup of inlet- second anab TB	Reference sample is L82955 ME 1/25/24	-15				
Start Date/Time	1124/24 9:07						
End Date/Time	N/A						
Time Span	7						
Sample Depth	N/A						
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)						

Logi	n Number(s): 82957	D		Project No.:	421520	5-2-CC)	Sub-Contracting: Y	(N)	List Product(s):		
Colle	ect Date(s): 24/2			Receive Date:	1/2/2	4	***************************************	Changes: Y/N		List Parameter(s):		
		s	AMPLE RECEIPT	CONDITIONS				F	IELD PRESERVATION CHE	CKLIST (Circle and/or check	applicable sele	ections)
	CONDITION	Acceptable?	Comment ID	CONDIT		cceptable?	Comment ID		UCT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets	/x / N		Volumes		NIN		BNA / pH 6 - 9 w/ H ₂ SO ₄	or NaOH	√ field sheet for F. pH	Y / N	☐ Notify ORG
Cont	ainer	VIN		Holding Times		YIN		CN / pH > 12 w/ NaOH w	vithin 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
Tem	perature (w/ ice)	Y/I N/NA		Delivery Locati	on	YIN		NO23 pH < 2 w/ H₂SO4		☐ Check pH	Y / N/NA	Preserve by SM
	B€	TTLE COUNT (#) AND DESCRIP	TION and SAI	MPLE NUMB	ERS .	100	CR(VI) / TOTCR(VI) / pH	19,3 - 9,7 w/ NaOH w/in 15 min	√ field sheet for pH	Y/N	☐ Deliver to CONV
#		Bo	ttle Description:	Sample Num	bers			ICP / HG-CVAA-M / pH <	< 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
ŀ	40 mL clear vial (VOA):							O&G / HEM / PHENOL /	pH < 2 w/ H₂SO₄	Check documentation	Y / N	☐ Preserve by SM
	60 mL clear glass (PHYTO)	:						PHYTOPLANKTON / Lu	igols	Visually inspect	Y / N	Deliver to MICRO
	60 mL CWM HDPE:							TKN/COD pH<2w/H	₂ SO ₄ within 15 min	☐ Check pH	Y/N	☐ Preserve By SM
	125 mL AWM HDPE:							TOC / pH < 2 w/ HCl (NP	PDES only)	☐ Check pH	Y/N	☐ Preserve By SM
	125 mL CNM HDPE:	·						TOTSULFIDE / pH > 9 w	// NaOH, ZnAc	Check documentation	Y/N	☐ Deliver to CONV
	125 mL CWM HDPE:					•		WDO/FIXED		Visually inspect	Y/N	☐ Deliver to CONV
	125 mL GANM;			•				Other:				
	125 mL GANM w/HCi							ROU	TINE SM PRESERVATION (SHECKLIST (Circle and/or ch	ck applicable	selections)
5	250 mL AWM HDPE: 7	-4,9							UCT / Preservation	SM Action	Acceptable?	Corrective Action
-	250 mL CWM HDPE:							Chlorinated Pesticides	/ pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y/N	Adjust pH
	250 mL CWM HDPE (MICR	RO):						HG-CVAA-L-Teflon (T /	/D]/pH<2w/ULTRA HCI	Preserve & deliver	NA	NA
	250 mL GAWM:							ICPMS / HG-CVAA-M (1	T/D)/pH<2w/ULTRAHNO	☐ Preserve & deliver	NA	NA .
	250 mL GAWM w/ H2SO4;							TOC / pH < 2 w/ HCI		Preserve & deliver	NA NA	NA
	300 mL WDO (8 hour HT):		-					Other:				
	500 mL AWM HDPE:					,		Other:				
	500 mL CWM HDPE:							() ()	INTERFERENCE TES	l'(Circle and/or check applica	ble selections	
	500 mL CWM PP (MICRO):							Product / Interfere	ence (SM Action)	Positive Test?	<u>Treated</u>	Corrective Action
	500 mL HDPE (METALS):							BNA / Chlorine (Check d	locumentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL HDPE, double-bags	ged (METALS):						CN / Chlorine (Check do	cumentation)	Y / N / not tested	Y/N	☐ Deliver to CONV
	500 mL Teflon (Hg):			,				CN / Suifide (Check field	sheet for DF)	Y / N / not tested	Y / N	☐ Deliver to CONV
	500 mL Teflon, double-bag	ged (METALS):				···		VOA / Chlorine (Check d	documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL GANM / GAWM:							Other:				
	500 mL Polystyrene Filtration	on Units (METALS)			·					HEADSPACE CHECK		
ļ	1L AWM HDPE:							PROD	DUCT (SM Action)	Check For	Acceptable?	Corrective Action
L	1L CWM HDPE:	-						MICRO (Visually Inspect		Headspace (@ 1")	Y/N	☐ Notify MICRO
ļ	1L CWM PP (MICRO):		·					TOTSULFIDE (Visually i	inspect)	Headspace (< 1")	Y / N	☐ Notify CONV
<u> </u>	1L GANM:							VOA (Visually inspect)		Zero headspace	Y/N	☐ Notify ORG
ļ	1L GCWM:	· · · · · · · · · · · · · · · · · · ·						WDO (Visually inspect)		Zero headspace	Y / N	□ Notify CONV
	1L GAWM w/ H ₂ SO ₄ :	•						Other;				
<u> </u>	2L CWM HDPE:							D	FIELD FILTRATION CHECK duct (SM Action)	KLIST (Circle and/or check ap		
baren e	Other:		OWENES IN	Westerness to						Field Filtered	<u>Field Blank</u>	Corrective Action
H			OMMENTS / NO	IIFICATIONS				ORTHOP (Check Field S NO2 / NO3 / NO23 / NH3		Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV
\vdash								Dissolved Metals (Chec		Y (within 1 day y / n) / N Y (within 15 min y / n) / N	Y / N / NA Y / N / NA	☐ Deliver to CONV
 								DOC (Deliver / Notify Un	·	Y (within 15 min or 1 day) / N	Y / N / NA	Deliver to METALS
t					•			DCOD / CR(VI) (Deliver	<u>- </u>	Y (within 15 min y / n) / N	Y / N / NA	Deliver to CONV
l								Other,				C Deliver to COMA
								Other:				
_		***************************************						L				

CC: 🗆 A	AQUATOX. I	CONV.	☐ METALS.	□ MICRO.	. 🗆 ORG. 🗆
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NOTES

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JAN 24'24 14:21

	~ :		
SM	Siar	เลเบ	m.

Date / Time Completed:



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: March 22, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, February 28, 2024

Stormwater samples were collected by Herrera Environmental Consultants on February 28, 2024. The samples were delivered to the King County Environmental Laboratory on February 29, 2024. The samples were assigned lab ID numbers L83306-1-68 and -70-86. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

All equipment blank samples (L83306-81 to -86) were reextracted and reanalyzed to confirm reported sample results.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

Parameters

6ppd-quinone

ES NONE
Sample Information

AQ KCEL SOP 4077: 6PPDQ by LCMS

Project: 421520-200 Project: 421520-200 Project: 421520-200 Locator: CONT Locator: CONT Locator: CONT Descrip: Control Sample Descrip: Control Sample Descrip: Control Sample L83306-1 L83306-2 Sample: L83306-3 Sample: Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: LG STORM WTR 2/28/24 10:23 2/28/24 9:37 ColDate: 2/28/24 10:00 ColDate: ColDate: **WET Weight Basis** WET Weight Basis WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units 0.944 0.002 0.01 0.944 0.002 0.01 0.863 0.002 0.01 ug/L ug/L ug/L

Parameters

6ppd-quinone
ES NONE
Sample Information

AQ KCEL SOP 4077: 6PPDQ by LCMS

0.737	<u></u>	0.002	0.01	ug/L	0.434		0.002	0.01	ug/L	0.648		0.002	0.01	ug/
0.70-		0.000	0.04	,,	0.404	1	0.000	0.04		0.040		0.000	0.04	,
Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
WET Weight	Basis				WET Weight	Basis				WET Weight	Basis			
ColDate:	2/28/24 10:49				ColDate:	2/28/24 13:04				ColDate:	2/28/24 14:08			
Matrix:	LG STORM WT	R			Matrix:	LG STORM W	TR			Matrix:	LG STORM W	TR		
Sample:	L83306-4				Sample:	L83306-5				Sample:	L83306-6			
Descrip:	Control Sample		Descrip:	scrip: Control Sample	е			Descrip:	Control Sample					
Locator:	CONT				Locator:	CONT				Locator:	CONT			
Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

Project:	421520-200				Project:	421520-200				Project:	421520-200			
Locator:	CONT				Locator:	CONT				Locator:	CONT			
Descrip:	Control Sample				Descrip:	Control Samp	le			Descrip:	Control Sampl	е		
Sample:	L83306-7				Sample:	L83306-8				Sample:	L83306-9			
Matrix:	LG STORM WT	R			Matrix:	LG STORM V	VTR			Matrix:	LG STORM W	TR		
ColDate:	2/28/24 14:29				ColDate:	2/28/24 14:52				ColDate:	2/28/24 15:20			
WET Weigh	t Basis				WET Weight	Basis				WET Weight	Basis			
Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Unit
0.84	1	0.002	0.01	ug/L	1.19)	0.002	0.01	ug/L	1.38		0.002	0.01	ua/

Project:	421520-200	Project:	421520-200	Project:	421520-200
Locator:	CONT	Locator:	PTFE_TUB	Locator:	PTFE_TUB
Descrip:	Control Sample	Descrip:	PTFE tubing	Descrip:	PTFE tubing
Sample:	L83306-10	Sample:	L83306-11	Sample:	L83306-12
Matrix:	LG STORM WTR	Matrix:	LG STORM WTR	Matrix:	LG STORM WTR
ColDate:	2/28/24 15:47	ColDate:	2/28/24 9:39	ColDate:	2/28/24 10:01
WET Weight	t Basis	WET Weigh	t Basis	WET Weigh	t Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	1.26		0.002	0.01	ug/L	0.862		0.002	0.01	ug/L	0.899		0.002	0.01	ug/L
ES NONE															
Sample Information	·										·			-	

Parameters

6ppd-quinone

ES NONE
Sample Information

	0.851		0.002	0.01	ug/L	0.719		0.002	0.01	ug/L	0.439	1	0.002	0.01	ug/L
	Value		MDL	RDL	Units		Qual	MDL	RDL	Units			MDL	RDL	Units
WET	Γ Weight	Basis				WET Weight	Basis				WET Weight	Basis			
ColD	Date:	2/28/24 10:25				ColDate:	2/28/24 10:50)			ColDate:	2/28/24 13:07			
Matr	rix:	LG STORM WTR	₹			Matrix:	LG STORM \	VTR			Matrix:	LG STORM WTF	₹		
Sam	nple:	L83306-13				Sample:	L83306-14				Sample:	L83306-15			
Desc	crip:	PTFE tubing				Descrip:	PTFE tubing				Descrip:	PTFE tubing			
Loca	ator:	PTFE_TUB				Locator:	PTFE_TUB				Locator:	PTFE_TUB			
Proje	ect:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

						l I					II				
	0.627		0.002	0.01	ug/L	0.789)	0.002	0.01	ug/L	1.19	1	0.002	0.01	ug/l
	Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
V	NET Weight	Basis				WET Weigh	t Basis				WET Weight	Basis			
C	ColDate:	2/28/24 14:09				ColDate:	2/28/24 14:30				ColDate:	2/28/24 14:54			
N	∕latrix:	LG STORM WT	R			Matrix:	LG STORM WTF	₹			Matrix:	LG STORM WT	ΓR		
S	Sample:	L83306-16				Sample:	L83306-17				Sample:	L83306-18			
	Descrip:	PTFE tubing				Descrip:	PTFE tubing				Descrip:	PTFE tubing			
L	ocator:	PTFE_TUB				Locator:	PTFE_TUB				Locator:	PTFE_TUB			
F	Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

1.33	3	0.002	0.01	ug/L	1.27		0.002	0.01	ug/L	0.912		0.002	0.01	ug/L
4.00		0.000	0.04	,,	4.07		0.000	0.04		0.040		0.000	0.04	
Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
WET Weigh	t Basis				WET Weight	Basis				WET Weight	Basis			
ColDate:	2/28/24 15:22				ColDate:	2/28/24 15:49				ColDate:	2/28/24 9:41			
Matrix:	LG STORM WT	R			Matrix:	LG STORM W	TR			Matrix:	LG STORM W	TR		
Sample:	L83306-19				Sample:	L83306-20				Sample:	L83306-21			
Descrip:	PTFE tubing				Descrip:	PTFE tubing				Descrip:	PTFE Tubing -	Old		
Locator:	PTFE_TUB				Locator:	PTFE_TUB				Locator:	PTFE_TUB_O	LD		
Project:	421520-200				Project:	421520-200				Project:	421520-200			

Project: 421520-200 PTFE_TUB_OLD Locator: PTFE Tubing - Old Descrip: Sample: L83306-22 Matrix: LG STORM WTR 2/28/24 10:03 ColDate:

Project: 421520-200 PTFE_TUB_OLD Locator: PTFE Tubing - Old Descrip: Sample: L83306-23 Matrix: LG STORM WTR ColDate: 2/28/24 10:27 WET Weight Basis

Project: 421520-200 PTFE_TUB_OLD Locator: Descrip: PTFE Tubing - Old Sample: L83306-24 Matrix: LG STORM WTR ColDate: 2/28/24 10:52

	WET Weight Bas	sis				WET Weight Ba	sis				WET Weight Ba	sis			Units
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	
6ppd-quinone	0.944		0.002	0.01	ug/L	0.873		0.002	0.01	ug/L	0.729		0.002	0.01	ug/L
ES NONE															
Sample Information															

Project: 421520-200 PTFE_TUB_OLD Locator: PTFE Tubing - Old Descrip: Sample: L83306-25 Matrix: LG STORM WTR 2/28/24 13:08 ColDate:

Project: 421520-200 PTFE_TUB_OLD Locator: PTFE Tubing - Old Descrip: Sample: L83306-26 Matrix: LG STORM WTR ColDate: 2/28/24 14:11 WET Weight Basis

Project: 421520-200 PTFE_TUB_OLD Locator: Descrip: PTFE Tubing - Old Sample: L83306-27 Matrix: LG STORM WTR ColDate: 2/28/24 14:32

	WET Weight Bas	is				WET Weight Bas	sis				WET Weight Ba	sis			Units
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.445		0.002	0.01	ug/L	0.626		0.002	0.01	ug/L	0.784		0.002	0.01	ug/L
ES NONE															
Sample Information															

421520-200

L83306-30

PTFE_TUB_OLD

LG STORM WTR

2/28/24 15:50

PTFE Tubing - Old

Project: 421520-200 Project: 421520-200 Project: PTFE_TUB_OLD PTFE_TUB_OLD Locator: Locator: Locator: PTFE Tubing - Old PTFE Tubing - Old Descrip: Descrip: Descrip: Sample: L83306-28 Sample: L83306-29 Sample: Matrix: LG STORM WTR Matrix: LG STORM WTR Matrix: ColDate: ColDate: 2/28/24 14:55 2/28/24 15:24 ColDate: WET Weight Basis

WET Weight Basis **WET Weight Basis**

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	1.17		0.002	0.01	ug/L	1.32		0.002	0.01	ug/L	1.21		0.002	0.01	ug/L
ES NONE															
Sample Information															

Parameters

6ppd-quinone
ES NONE
Sample Information

	1.02		0.002	0.01	ug/L	0.955	5	0.002	0.01	ug/L	0.874		0.002	0.01	ug/l
	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
,	WET Weight	Basis				WET Weigh	t Basis				WET Weight	Basis			
	ColDate:	2/28/24 9:43				ColDate:	2/28/24 10:04				ColDate:	2/28/24 10:28			
	Matrix:	LG STORM WTF	3			Matrix:	LG STORM WT	R			Matrix:	LG STORM WT	ΓR		
	Sample:	L83306-31				Sample:	L83306-32				Sample:	L83306-33			
	Descrip:	HDPE - 24 hours	;			Descrip:	HDPE - 24 hour	s			Descrip:	HDPE - 24 hou	rs		
	Locator:	HDPE_24				Locator:	HDPE_24				Locator:	HDPE_24			
	Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone

ES NONE
Sample Information

AQ KCEL SOP 4077: 6PPDQ by LCMS

Proje	ect:	421520-200				Project:	421520-200				Project:	421520-200		
Loca		HDPE_24				Locator:	HDPE_24				Locator:	HDPE_24		
Desc	crip: I	HDPE - 24 hours	S			Descrip:	HDPE - 24 ho	urs			Descrip:	HDPE - 24 hou	irs	
Sam	ple: I	L83306-34				Sample:	L83306-35				Sample:	L83306-36		
Matri	ix: I	LG STORM WT	R			Matrix:	LG STORM W	/TR			Matrix:	LG STORM W	TR	
CoID	ate:	2/28/24 10:54				ColDate:	2/28/24 13:09				ColDate:	2/28/24 14:12		
WET	Weight E	Basis				WET Weight	Basis				WET Weight	Basis		
	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL
	0.753		0.002	0.01	ug/L	0.424		0.002	0.01	ug/L	0.684		0.002	0.01

Units

ug/L

Parameters

6ppd-quinone ES NONE

Sample Information

Project:	421520-200			I	Project:	421520-200			1	Project:	421520-200			I
Locator:	HDPE 24				Locator:	HDPE 24				Locator:	HDPE 24			
Descrip:	HDPE - 24 hours				Descrip:	HDPE - 24 ho	ours			Descrip:	HDPE - 24 hours	3		
Sample:	L83306-37				Sample:	L83306-38				Sample:	L83306-39			
Matrix:	LG STORM WTR				Matrix:	LG STORM V	VTR			Matrix:	LG STORM WTI	R		
ColDate:	2/28/24 14:34				ColDate:	2/28/24 14:57	7			ColDate:	2/28/24 15:28			
WET Weigh	t Basis				WET Weight	Basis				WET Weight	Basis			
Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
0.833	3	0.002	0.01	ug/L	1.29		0.002	0.01	ug/L	1.35		0.002	0.01	ug/L

Parameters

6ppd-quinone
ES NONE
Sample Information

1.2	1	0.002	0.01	ug/L	0.918	3	0.002	0.01	ug/L	0.873	3	0.002	0.01	ug/l
Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
Matrix: ColDate: WET Weigh	LG STORM WTF 2/28/24 15:52	₹			Matrix: ColDate: WET Weigh	LG STORM W ² 2/28/24 9:44	TR			Matrix: ColDate: WET Weight	LG STORM W 2/28/24 10:05	TR		
Locator: Descrip: Sample:	HDPE_24 HDPE - 24 hours L83306-40	S			Locator: Descrip: Sample:	HDPE_24_20L HDPE - 24 hou L83306-41				Locator: Descrip: Sample:	HDPE_24_20I HDPE - 24 hor L83306-42			
Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

Matrix: ColDate:		ORM WTR 4 10:30				Matrix: ColDate:	LG STORM W 2/28/24 10:55				Matrix: ColDate:	LG STORM W 2/28/24 13:10	IK		
WET Weigh		4 10:30				ColDate: WET Weight					ColDate: WET Weight				
WEI Weigh	it basis					WEI Weight	Dasis				WEI Weight	Dasis			
Value	e (Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
 0.76	9		0.002	0.01	ug/L	0.708		0.002	0.01	ug/L	0.415	<u> </u>	0.002	0.01	ug/L
										- 3					

Parameters

6ppd-quinone
ES NONE
Sample Information

0.58	7	0.002	0.01	ug/L	0.84	I	0.002	0.01	ug/L	1.18	3	0.002	0.01	ug/l
Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
WET Weigh					WET Weigh					WET Weight				
ColDate:	2/28/24 14:13				ColDate:	2/28/24 14:36				ColDate:	2/28/24 14:59			
Matrix:	LG STORM WT	R			Matrix:	LG STORM W	/TR			Matrix:	LG STORM W	/TR		
Sample:	L83306-46				Sample:	L83306-47				Sample:	L83306-48			
Descrip:	HDPE - 24 hours	s -			Descrip:	HDPE - 24 ho	urs -			Descrip:	HDPE - 24 ho	urs -		
Locator:	HDPE_24_20L				Locator:	HDPE_24_20	L			Locator:	HDPE_24_20I	L		
Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 HDPE_24_20 HDPE - 24 ho L83306-49 LG STORM \ 2/28/24 15:30	ours - NTR			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 HDPE_24_20 HDPE - 24 ho L83306-50 LG STORM \ 2/28/24 15:53	ours - WTR			Project: Locator: Descrip: Sample: Matrix: ColDate:	421520-200 HDPE_OLD HDPE - Old L83306-51 LG STORM W 2/28/24 9:47	TR		
WET Weigh		,			WET Weight		,			WET Weigh				
Value		MDL	RDL	Units			MDL	RDL	Units		e Qual	MDL	RDL	Units
1.40	6	0.002	0.01	ug/L	1.2		0.002	0.01	ug/L		1	0.002	0.01	ug/L

Parameters

6ppd-quinone
ES NONE
Sample Information

	0.947	•	0.002	0.01	ug/L	0.861		0.002	0.01	ug/L	0.725		0.002	0.01	ug/l
	Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
V	NET Weight	Basis				WET Weigh	t Basis				WET Weight	Basis			
C	ColDate:	2/28/24 10:08				ColDate:	2/28/24 10:33				ColDate:	2/28/24 10:58			
N	Matrix:	LG STORM WT	R			Matrix:	LG STORM WTF	R			Matrix:	LG STORM WT	R		
5	Sample:	L83306-52				Sample:	L83306-53				Sample:	L83306-54			
	Descrip:	HDPE - Old				Descrip:	HDPE - Old				Descrip:	HDPE - Old			
L	_ocator:	HDPE_OLD				Locator:	HDPE_OLD				Locator:	HDPE_OLD			
F	Project:	421520-200				Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

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										·					
0.42	1		0.002	0.01	ug/L	0.64	6	0.002	0.01	ug/L	0.862		0.002	0.01	ug/L
Valu	e Qu	al	MDL	RDL	Units	Valu	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
J															
WET Weigh	t Basis					WET Weigh	t Basis				WET Weight	Basis			
ColDate:	2/28/24 1	3:13				ColDate:	2/28/24 14:16	3			ColDate:	2/28/24 14:40			
Matrix:	LG STOR	RM WTR	!			Matrix:	LG STORM V	VTR			Matrix:	LG STORM W	/TR		
Sample:	L83306-5	5				Sample:	L83306-56				Sample:	L83306-57			
Descrip:	HDPE - (Descrip:	HDPE - Old				Descrip:	HDPE - Old			
Locator:	HDPE_C					Locator:	HDPE_OLD				Locator:	HDPE_OLD			
Project:	421520-2					Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

1.29	9	0.002	0.01	ug/L	1.34	•	0.002	0.01	ug/L	1.26	i	0.002	0.01	ug/L
Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	• Qual	MDL	RDL	Units
WET Weigh					WET Weight					WET Weight				
Matrix: ColDate:	LG STORM W ⁻ 2/28/24 15:02	TR			Matrix: ColDate:	LG STORM WT 2/28/24 15:34	ΓR			Matrix: ColDate:	LG STORM W 2/28/24 15:56			
Sample:	L83306-58				Sample:	L83306-59				Sample:	L83306-60			
Descrip:	HDPE - Old				Descrip:	HDPE - Old				Descrip:	HDPE - Old			
Locator:	HDPE_OLD				Locator:	HDPE_OLD				Locator:	HDPE_OLD			
Project:	421520-200			1	Project:	421520-200				Project:	421520-200			

Parameters

6ppd-quinone
ES NONE
Sample Information

0.323	,	0.002	0.01	ug/L	0.500	,	0.002	0.01	49/1	0.000		0.002	0.01	ug/i
0.929)	0.002	0.01	ug/L	0.985	5	0.002	0.01	ug/L	0.835		0.002	0.01	ug/l
Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
WET Weight	t Basis				WET Weight	t Basis				WET Weight	Basis			
											,,,			
Matrix:		R			Matrix:		2					TR		
Sample:	L83306-61				Sample:	L83306-62				Sample:	L83306-63			
Descrip:	Auto - Old				Descrip:	Auto - Old				Descrip:	Auto - Old			
Locator:	AUTO_OLD				Locator:	AUTO_OLD				Locator:	AUTO_OLD			
Project:	421520-200				Project:	421520-200				Project:	421520-200			
	Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTI ColDate: 2/28/24 9:48 WET Weight Basis Value Qual	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: Descrip: Sample: Matrix: ColDate: WET Weight WET Weight Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-63 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-63 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis WeT Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units	Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-61 Matrix: LG STORM WTR ColDate: 2/28/24 9:48 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-62 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-63 Matrix: LG STORM WTR ColDate: 2/28/24 10:09 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units

Parameters

6ppd-quinone
ES NONE
Sample Information

					11					11				
0.686		0.002	0.01	ug/L	0.412	2	0.002	0.01	ug/L	0.626		0.002	0.01	ug/l
Value	Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
VET Weight	Basis				WET Weight	t Basis				WET Weight	Basis			
ColDate:	2/28/24 11:00				ColDate:	2/28/24 13:14				ColDate:	2/28/24 14:17			
/latrix:	LG STORM WT	R			Matrix:	LG STORM WT	R			Matrix:	LG STORM W	TR		
Sample:	L83306-64				Sample:	L83306-65				Sample:	L83306-66			
Descrip:	Auto - Old				Descrip:	Auto - Old				Descrip:	Auto - Old			
.ocator:	AUTO_OLD				Locator:	AUTO_OLD				Locator:	AUTO_OLD			
Project:	421520-200				Project:	421520-200				Project:	421520-200			
5	ocator: escrip: ample: latrix: olDate: /ET Weight	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WT olDate: 2/28/24 11:00 /ET Weight Basis	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: Descrip: Sample: Matrix: ColDate: WET Weight Value Value	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WT ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units	ocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units	cocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units	cocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units	cocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Locator: Descrip: Sample: Matrix: CG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units	Locator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-66 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual	cocator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-66 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units	Locator: AUTO_OLD escrip: Auto - Old ample: L83306-64 latrix: LG STORM WTR olDate: 2/28/24 11:00 //ET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-65 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Locator: AUTO_OLD Descrip: Auto - Old Sample: L83306-66 Matrix: LG STORM WTR ColDate: 2/28/24 13:14 WET Weight Basis Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units Value Qual MDL RDL Units

Parameters

6ppd-quinone
ES NONE
Sample Information

	0.829)	0.002	0.01	ug/L	1.17	7	0.002	0.01	ug/L	1.25	i	0.002	0.01	ug/l
	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
(Matrix: ColDate: NET Weight	LG STORM WT 2/28/24 14:40 Basis	R			Matrix: ColDate: WET Weight	LG STORM W 2/28/24 15:03 t Basis	TR			Matrix: ColDate: WET Weight	LG STORM WT 2/28/24 15:37 Basis	ΓR		
5	Sample:	L83306-67				Sample:	L83306-68				Sample:	L83306-70			
L	Project: Locator: Descrip:	421520-200 AUTO_OLD Auto - Old				Project: Locator: Descrip:	421520-200 AUTO_OLD Auto - Old				Project: Locator: Descrip:	421520-200 AUTO_OLD Auto - Old			

421520-200

Project: 421520-200 Locator: FIELDDUP FIELD DUPLICATE Descrip: Sample: L83306-71 Matrix: LG STORM WTR ColDate: 2/28/24 9:53

Project: FIELDDUP Locator: Descrip: FIELD DUPLICATE Sample: L83306-72 Matrix: LG STORM WTR ColDate: 2/28/24 10:13 WET Weight Basis

Project: 421520-200 Locator: FIELDDUP FIELD DUPLICATE Descrip: Sample: L83306-73 Matrix: LG STORM WTR ColDate: 2/28/24 10:38 WET Weight Basis

	WET Weight Bas	sis				WET Weight Ba	sis				WET Weight Ba	asis			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.946		0.002	0.01	ug/L	0.935		0.002	0.01	ug/L	0.865		0.002	0.01	ug/L
ES NONE															
Sample Information		·					<u> </u>	<u>'</u>				<u> </u>			

 Project:
 421520-200

 Locator:
 FIELDDUP

 Descrip:
 FIELD DUPLICATE

 Sample:
 L83306-74

 Matrix:
 LG STORM WTR

 ColDate:
 2/28/24 11:04

WET Weight Basis

Project: 421520-200
Locator: FIELDDUP
Descrip: FIELD DUPLICATE
Sample: L83306-75
Matrix: LG STORM WTR
ColDate: 2/28/24 13:18
WET Weight Basis

Project: 421520-200
Locator: FIELDDUP
Descrip: FIELD DUPLICATE
Sample: L83306-76
Matrix: LG STORM WTR
ColDate: 2/28/24 14:26

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.721		0.002	0.01	ug/L	0.442		0.002	0.01	ug/L	0.635		0.002	0.01	ug/L
ES NONE															
Sample Information															

Project: 421520-200 Locator: FIELDDUP FIELD DUPLICATE Descrip: Sample: L83306-77 Matrix: LG STORM WTR 2/28/24 14:43 ColDate:

421520-200 Project: FIELDDUP Locator: Descrip: FIELD DUPLICATE Sample: L83306-78 Matrix: LG STORM WTR ColDate: 2/28/24 15:06 WET Weight Basis

Project: 421520-200 Locator: FIELDDUP FIELD DUPLICATE Descrip: Sample: L83306-79 Matrix: LG STORM WTR ColDate: 2/28/24 15:38

WET Weight Basis						WET Weight Basis				WET Weight Basis					
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.822		0.002	0.01	ug/L	1.2		0.002	0.01	ug/L	1.38		0.002	0.01	ug/L
ES NONE															
Sample Information															

	Project: Locator:	421520-200 FIELDDUP	NATE			Project: Locator:	421520-200 EQUIPBLANK				Project: Locator:	421520-200 EQUIPBLANK			
	Descrip: Sample: Matrix:	FIELD DUPLIC L83306-80 LG STORM W				Descrip: Sample: Matrix:	EQUIPMENT L83306-81 LN BLANK W				Descrip: Sample: Matrix:	EQUIPMENT L83306-82 LN BLANK W			
	ColDate: WET Weigh	2/28/24 15:59	IK			ColDate: WET Weight	2/28/24 8:52	IK			ColDate: WET Weight	2/28/24 8:52	IK		
Parameters	Value		MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units
AQ KCEL SOP 4077: 6PPDQ by LCMS 6ppd-quinone	1.20	6	0.002	0.01	ug/L	0.003	3 <rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td><td>0.0033</td><td>RDL</td><td>0.002</td><td>0.01</td><td>ug/L</td></rdl<>	0.002	0.01	ug/L	0.0033	RDL	0.002	0.01	ug/L
ES NONE Sample Information					\longrightarrow	Rinsate Blar	nk - PTFE Pre			none	Rinsate Blanl	k - PTFE OLD	Pre		none

	Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 EQUIPBLANK EQUIPMENT BI L83306-83 LN BLANK WTF 2/28/24 8:52				Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weigh	421520-200 EQUIPBLANK EQUIPMENT L83306-84 LN BLANK W' 2/28/24 16:11 It Basis	BLANK			Project: Locator: Descrip: Sample: Matrix: ColDate: WET Weight	421520-200 EQUIPBLANK EQUIPMENT L83306-85 LN BLANK W 2/28/24 16:04 Basis	BLANK TR		
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	e Qual	MDL	RDL	Units	Value	e Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Sppd-quinone	0.004	<rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td><td>0.0032</td><td>2 <rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td><td>0.0063</td><td><rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td></rdl<></td></rdl<></td></rdl<>	0.002	0.01	ug/L	0.0032	2 <rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td><td>0.0063</td><td><rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td></rdl<></td></rdl<>	0.002	0.01	ug/L	0.0063	<rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td></rdl<>	0.002	0.01	ug/L
ES NONE															
Sample Information	Rinsate Blanl	k - CHURN Pre			none	Rinsate Blar	nk - PTFE Post			none	Rinsate Blanl	k - PTFE OLD	Post		none

Project: 421520-200 Locator: EQUIPBLANK Descrip: EQUIPMENT BLANK

Sample: L83306-86
Matrix: LN BLANK WTR
ColDate: 2/28/24 16:13

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.0071	<rdl< td=""><td>0.002</td><td>0.01</td><td>ug/L</td></rdl<>	0.002	0.01	ug/L
ES NONE					
Sample Information	Rinsate Blank -	CHURN Post			none

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

				6ppd-quinone	Sample Information
LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L	none
CONT	421520-200	L83306-1	2/28/2024 9:37	0.944	
CONT	421520-200	L83306-2	2/28/2024 10:00	0.944	
CONT	421520-200	L83306-3	2/28/2024 10:23	0.863	
CONT	421520-200	L83306-4	2/28/2024 10:49	0.737	
CONT	421520-200	L83306-5	2/28/2024 13:04	0.434	
CONT	421520-200	L83306-6	2/28/2024 14:08	0.648	
CONT	421520-200	L83306-7	2/28/2024 14:29	0.84	
CONT	421520-200	L83306-8	2/28/2024 14:52	1.19	
CONT	421520-200	L83306-9	2/28/2024 15:20	1.38	
CONT	421520-200	L83306-10	2/28/2024 15:47	1.26	
PTFE_TUB	421520-200	L83306-11	2/28/2024 9:39	0.862	
PTFE_TUB	421520-200	L83306-12	2/28/2024 10:01	0.899	
PTFE_TUB	421520-200	L83306-13	2/28/2024 10:25	0.851	
PTFE_TUB	421520-200	L83306-14	2/28/2024 10:50	0.719	
PTFE_TUB	421520-200	L83306-15	2/28/2024 13:07	0.439	
PTFE_TUB	421520-200	L83306-16	2/28/2024 14:09	0.627	
PTFE_TUB	421520-200	L83306-17	2/28/2024 14:30	0.789	
PTFE_TUB	421520-200	L83306-18	2/28/2024 14:54	1.19	
PTFE_TUB	421520-200	L83306-19	2/28/2024 15:22	1.33	
PTFE_TUB	421520-200	L83306-20	2/28/2024 15:49	1.27	
PTFE_TUB_OLD	421520-200	L83306-21	2/28/2024 9:41	0.912	
PTFE_TUB_OLD	421520-200	L83306-22	2/28/2024 10:03	0.944	
PTFE_TUB_OLD	421520-200	L83306-23	2/28/2024 10:27	0.873	
PTFE_TUB_OLD	421520-200	L83306-24	2/28/2024 10:52	0.729	
PTFE_TUB_OLD	421520-200	L83306-25	2/28/2024 13:08	0.445	
PTFE_TUB_OLD	421520-200	L83306-26	2/28/2024 14:11	0.626	
PTFE_TUB_OLD	421520-200	L83306-27	2/28/2024 14:32	0.784	
PTFE_TUB_OLD	421520-200	L83306-28	2/28/2024 14:55	1.17	
PTFE_TUB_OLD	421520-200	L83306-29	2/28/2024 15:24	1.32	
PTFE_TUB_OLD	421520-200	L83306-30	2/28/2024 15:50	1.21	
HDPE_24	421520-200	L83306-31	2/28/2024 9:43	1.02	
HDPE_24	421520-200	L83306-32	2/28/2024 10:04	0.955	
HDPE_24	421520-200	L83306-33	2/28/2024 10:28	0.874	

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

HDPE_24					6ppd-quinone	Sample Information
HDPE_24	HDPE_24	421520-200	L83306-34	2/28/2024 10:54	0.753	
HDPE_24	HDPE_24	421520-200	L83306-35	2/28/2024 13:09	0.424	
HDPE_24	HDPE_24	421520-200	L83306-36	2/28/2024 14:12	0.684	
HDPE_24	HDPE_24	421520-200	L83306-37	2/28/2024 14:34	0.833	
HDPE_24	HDPE_24	421520-200	L83306-38	2/28/2024 14:57	1.29	
HDPE_24_20L	HDPE_24	421520-200	L83306-39	2/28/2024 15:28	1.35	
HDPE_24_20L	HDPE_24	421520-200	L83306-40	2/28/2024 15:52	1.21	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-41	2/28/2024 9:44	0.918	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-42	2/28/2024 10:05	0.873	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-43	2/28/2024 10:30	0.769	
HDPE_24_20L 421520-200 L83306-46 2/28/2024 14:13 0.587 HDPE_24_20L 421520-200 L83306-47 2/28/2024 14:36 0.841 HDPE_24_20L 421520-200 L83306-48 2/28/2024 14:59 1.18 HDPE_24_20L 421520-200 L83306-49 2/28/2024 15:30 1.46 HDPE_24_20L 421520-200 L83306-50 2/28/2024 15:53 1.2 HDPE_OLD 421520-200 L83306-51 2/28/2024 9:47 1 HDPE_OLD 421520-200 L83306-52 2/28/2024 10:08 0.947 HDPE_OLD 421520-200 L83306-53 2/28/2024 10:08 0.947 HDPE_OLD 421520-200 L83306-53 2/28/2024 10:33 0.861 HDPE_OLD 421520-200 L83306-54 2/28/2024 10:58 0.725 HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-57 2/28/2024 15:02 1.29	HDPE_24_20L	421520-200	L83306-44	2/28/2024 10:55	0.708	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-45	2/28/2024 13:10	0.415	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-46	2/28/2024 14:13	0.587	
HDPE_24_20L	HDPE_24_20L	421520-200	L83306-47	2/28/2024 14:36	0.841	
HDPE_24_20L 421520-200 L83306-50 2/28/2024 15:53 1.2 HDPE_OLD 421520-200 L83306-51 2/28/2024 9:47 1 HDPE_OLD 421520-200 L83306-52 2/28/2024 10:08 0.947 HDPE_OLD 421520-200 L83306-53 2/28/2024 10:33 0.861 HDPE_OLD 421520-200 L83306-54 2/28/2024 10:58 0.725 HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-61 2/28/2024 15:66 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 10:09 0.985 AUT	HDPE_24_20L	421520-200	L83306-48	2/28/2024 14:59	1.18	
HDPE_OLD	HDPE_24_20L	421520-200	L83306-49	2/28/2024 15:30	1.46	
HDPE_OLD 421520-200 L83306-52 2/28/2024 10:08 0.947 HDPE_OLD 421520-200 L83306-53 2/28/2024 10:33 0.861 HDPE_OLD 421520-200 L83306-54 2/28/2024 10:58 0.725 HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 <td< td=""><td>HDPE_24_20L</td><td>421520-200</td><td>L83306-50</td><td>2/28/2024 15:53</td><td>1.2</td><td></td></td<>	HDPE_24_20L	421520-200	L83306-50	2/28/2024 15:53	1.2	
HDPE_OLD 421520-200 L83306-53 2/28/2024 10:33 0.861 HDPE_OLD 421520-200 L83306-54 2/28/2024 10:58 0.725 HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-51	2/28/2024 9:47	1	
HDPE_OLD 421520-200 L83306-54 2/28/2024 10:58 0.725 HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-69 2/28/2024 15:56 1.26 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 10:09 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-52	2/28/2024 10:08	0.947	
HDPE_OLD 421520-200 L83306-55 2/28/2024 13:13 0.421 HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-53	2/28/2024 10:33	0.861	
HDPE_OLD 421520-200 L83306-56 2/28/2024 14:16 0.646 HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-54	2/28/2024 10:58	0.725	
HDPE_OLD 421520-200 L83306-57 2/28/2024 14:40 0.862 HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-55	2/28/2024 13:13	0.421	
HDPE_OLD 421520-200 L83306-58 2/28/2024 15:02 1.29 HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 13:14 0.412	HDPE_OLD	421520-200	L83306-56	2/28/2024 14:16	0.646	
HDPE_OLD 421520-200 L83306-59 2/28/2024 15:34 1.34 HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	HDPE_OLD	421520-200	L83306-57	2/28/2024 14:40	0.862	
HDPE_OLD 421520-200 L83306-60 2/28/2024 15:56 1.26 AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	HDPE_OLD	421520-200	L83306-58	2/28/2024 15:02	1.29	
AUTO_OLD 421520-200 L83306-61 2/28/2024 9:48 0.929 AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	HDPE_OLD	421520-200	L83306-59	2/28/2024 15:34	1.34	
AUTO_OLD 421520-200 L83306-62 2/28/2024 10:09 0.985 AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	HDPE_OLD	421520-200	L83306-60	2/28/2024 15:56	1.26	
AUTO_OLD 421520-200 L83306-63 2/28/2024 10:35 0.835 AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	AUTO_OLD	421520-200	L83306-61	2/28/2024 9:48	0.929	
AUTO_OLD 421520-200 L83306-64 2/28/2024 11:00 0.686 AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	AUTO_OLD	421520-200	L83306-62	2/28/2024 10:09	0.985	
AUTO_OLD 421520-200 L83306-65 2/28/2024 13:14 0.412 AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	AUTO_OLD	421520-200	L83306-63	2/28/2024 10:35	0.835	
AUTO_OLD 421520-200 L83306-66 2/28/2024 14:17 0.626	AUTO_OLD	421520-200	L83306-64	2/28/2024 11:00	0.686	
	AUTO_OLD	421520-200	L83306-65	2/28/2024 13:14	0.412	
AUTO_OLD 421520-200 L83306-67 2/28/2024 14:40 0.829	AUTO_OLD	421520-200	L83306-66	2/28/2024 14:17	0.626	
	AUTO_OLD	421520-200	L83306-67	2/28/2024 14:40	0.829	

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

				6ppd-quinone	Sample Information
AUTO_OLD	421520-200	L83306-68	2/28/2024 15:03	1.17	
AUTO_OLD	421520-200	L83306-70	2/28/2024 15:37	1.25	
FIELDDUP	421520-200	L83306-71	2/28/2024 9:53	0.946	
FIELDDUP	421520-200	L83306-72	2/28/2024 10:13	0.935	
FIELDDUP	421520-200	L83306-73	2/28/2024 10:38	0.865	
FIELDDUP	421520-200	L83306-74	2/28/2024 11:04	0.721	
FIELDDUP	421520-200	L83306-75	2/28/2024 13:18	0.442	
FIELDDUP	421520-200	L83306-76	2/28/2024 14:26	0.635	
FIELDDUP	421520-200	L83306-77	2/28/2024 14:43	0.822	
FIELDDUP	421520-200	L83306-78	2/28/2024 15:06	1.2	
FIELDDUP	421520-200	L83306-79	2/28/2024 15:38	1.38	
FIELDDUP	421520-200	L83306-80	2/28/2024 15:59	1.26	
EQUIPBLANK	421520-200	L83306-81	2/28/2024 8:52	0.003	
EQUIPBLANK	421520-200	L83306-82	2/28/2024 8:52	0.0033	
EQUIPBLANK	421520-200	L83306-83	2/28/2024 8:52	0.004	
EQUIPBLANK	421520-200	L83306-84	2/28/2024 16:11	0.0032	
EQUIPBLANK	421520-200	L83306-85	2/28/2024 16:04	0.0063	
EQUIPBLANK	421520-200	L83306-86	2/28/2024 16:13	0.0071	
* Not converted to dry weight basis					
16 4 1 1 4 4 1 1					

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

WG192905 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L83306-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:37	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:00	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-11	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:39	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-12	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:01	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-21	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:41	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-22	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:03	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-31	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:43	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-32	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:04	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-41	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:44	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-42	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:05	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-51	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:47	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-52	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:08	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-61	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:48	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-62	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:09	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-71	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 9:53	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
L83306-72	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:13	3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
WG192905-1	МВ	Nescaren	AQ6PPDQ-LCMS	OTHR WTR		3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	
WG192905-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	WG192905-1
WG192905-3	MS		AQ6PPDQ-LCMS	STORM WTR		3/1/2024 8:00	3/5/2024 13:00	WG192905-1,-2,-3,-4,-5,-	L83306-32
WG192905-4	MSD		AQ6PPDQ-LCMS	STORM WTR		3/1/2024 8:00	3/5/2024 13:00		WG192905-3 L83306-32
WG192905-5	LD		AQ6PPDQ-LCMS	STORM WTR		3/1/2024 8:00	3/5/2024 13:00	6 WG192905-1,-2,-3,-4,-5,-	L83306-1

WDOE BMP Stormwater Herrera, L83306, February 28, 2024

WG192905-6 CCC AQ6PPDQ-LCMS OTHR WTR 3/1/2024 8:00 3/5/2024 13:00 WG192905-1,-2,-3,-4,-5,- MED 6

WG192906 6PPDQ by LCMS

Sample L83306-3	Project 421520-200	Project Description WDOE Stormwater BMP	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 2/28/2024 10:23	Prep Date 3/1/2024 14:00	Anal Date 3/5/2024 17:30	QC Association WG192906-1,-2,-3,-4,-5,	Comments
103300-3	421320-200	Research	AQUIT DQ-LCIVIS	STORINI WTR	2/20/2024 10:23	3/1/2024 14.00	3/3/2024 17.30	6	
L83306-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:49	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-13	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:25	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-14	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:50	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-23	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:27	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-24	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:52	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-33	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:28	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-34	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:54	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-43	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:30	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-44	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:55	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-53	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:33	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-54	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:58	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-63	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:35	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-64	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 11:00	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-73	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 10:38	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
L83306-74	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 11:04	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
WG192906-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,-6	-
WG192906-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,	- WG192906-1
WG192906-3	MS		AQ6PPDQ-LCMS	STORM WTR		3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,	- L83306-64

WDOE BMP Stormwater Herrera, L83306, February 28, 2024

WG192906-4	MSD	AQ6PPDQ-LCMS	STORM WTR	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,- WG192906-3 L83306-64
WG192906-5	LD	AQ6PPDQ-LCMS	STORM WTR	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,- L83306-33
WG192906-6	CCC	AQ6PPDQ-LCMS	OTHR WTR	3/1/2024 14:00	3/5/2024 17:30	WG192906-1,-2,-3,-4,-5,- MED 6

WG192907 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L83306-5	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:04	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
L83306-6	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:08	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research			- / /	- /- /	- /- /	6	
L83306-15	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:07	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
L83306-16	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:09	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
102206.25	424520 200	Research	4.000000010046	CTODA A MET	2/20/2024 42 00	2/2/202442.00	2/5/202444 20	6	
L83306-25	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:08	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
L83306-26	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:11	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-35	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:09	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
L83306-36	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:12	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	
		Research						6	
L83306-45	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:10	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-46	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:13	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-55	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:13	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-56	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:16	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-65	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:14	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
L83306-66	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:17	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
L83306-75	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 13:18	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	
		Research						6	
L83306-76	421520-200	WDOE Stormwater BMP	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:26	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-
		Research						6	
WG192907-1	MB		AQ6PPDQ-LCMS	OTHR WTR		3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,	-

WDOE BMP Stormwater Herrera, L83306, February 28, 2024

WG192907-2	SB	AQ6PPDQ-LCMS	OTHR WTR	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,- WG192907-1
WG192907-3	MS	AQ6PPDQ-LCMS	STORM WTR	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,- L83306-45
WG192907-4	MSD	AQ6PPDQ-LCMS	STORM WTR	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,- WG192907-3 L83306-45
WG192907-5	LD	AQ6PPDQ-LCMS	STORM WTR	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,- L83306-16 6
WG192907-6	CCC	AQ6PPDQ-LCMS	OTHR WTR	3/2/2024 12:00	3/6/2024 11:30	WG192907-1,-2,-3,-4,-5,- MED 6

WG192908 6PPDQ by LCMS

Sample L83306-7	Project 421520-200	Project Description WDOE Stormwater BMP Research	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 2/28/2024 14:29	Prep Date 3/3/2024 11:00	Anal Date 3/6/2024 15:10	QC Association WG192908-1,-2,-3,-4,-5,-	Comments
L83306-8	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:52	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	
L83306-17	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:30	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-18	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:54	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-27	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:32	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	
L83306-28	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:55	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	
L83306-37	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:34	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	
L83306-38	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:57	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-47	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:36	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-48	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:59	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	
L83306-57	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:40	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-58	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:02	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-67	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:40	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-68	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:03	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-6	
L83306-77	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 14:43	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-	

L83306-78	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR 2/28/2024 15:06	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-
WG192908-1	МВ		AQ6PPDQ-LCMS	OTHR WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,-
WG192908-2	SB		AQ6PPDQ-LCMS	OTHR WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,- WG192908-1
WG192908-3	MS		AQ6PPDQ-LCMS	STORM WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,- L83306-57
WG192908-4	MSD		AQ6PPDQ-LCMS	STORM WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,- WG192908-3 L83306-57
WG192908-5	LD		AQ6PPDQ-LCMS	STORM WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,- L83306-77
WG192908-6	CCC		AQ6PPDQ-LCMS	OTHR WTR	3/3/2024 11:00	3/6/2024 15:10	WG192908-1,-2,-3,-4,-5,- MED 6

WG192909 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association Comments
L83306-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:20	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- 6
L83306-10	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:47	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-19	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:22	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-20	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:49	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-29	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:24	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-30	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:50	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-39	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:28	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-40	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:52	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-49	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:30	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-50	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:53	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-59	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:34	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-60	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:56	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-70	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:37	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-

L83306-79	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:38	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
L83306-80	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	2/28/2024 15:59	3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
WG192909-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,-
WG192909-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- WG192909-1
WG192909-3	MS		AQ6PPDQ-LCMS	STORM WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- L83306-39
WG192909-4	MSD		AQ6PPDQ-LCMS	STORM WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- WG192909-3 L83306-39
WG192909-5	LD		AQ6PPDQ-LCMS	STORM WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- L83306-19
WG192909-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		3/4/2024 7:30	3/5/2024 9:45	WG192909-1,-2,-3,-4,-5,- MED 6

WG192910 6PPDQ by LCMS

Sample L83306-81	Project 421520-200	Project Description WDOE Stormwater BMP Research	List Type AQ6PPDQ-LCMS	Matrix BLANK WTR	Collect Date 2/28/2024 8:52	Prep Date 3/5/2024 10:30	Anal Date 3/6/2024 8:30	QC Association WG192910-1,-2,-3,-4,-5,-	Comments
L83306-82	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	2/28/2024 8:52	3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
L83306-83	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	2/28/2024 8:52	3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
L83306-84	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	2/28/2024 16:11	3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
L83306-85	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	2/28/2024 16:04	3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
L83306-86	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	BLANK WTR	2/28/2024 16:13	3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
WG192910-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
WG192910-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,- 6	WG192910-1
WG192910-3	MS		AQ6PPDQ-LCMS	BLANK WTR		3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,- 6	
WG192910-4	MSD		AQ6PPDQ-LCMS	BLANK WTR		3/5/2024 10:30	3/6/2024 8:30	6	WG192910-3 L83306-86
WG192910-5	LD		AQ6PPDQ-LCMS	BLANK WTR		3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	
WG192910-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		3/5/2024 10:30	3/6/2024 8:30	WG192910-1,-2,-3,-4,-5,-	MED

Workgroup: WG192905 6PPDQ by LCMS

MB:WG192905-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG192905-2 MB:WG192905-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.221 110 50--150

MSD:WG192905-4 MS:WG192905-3 L83306-32 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.955 0.2 1.11 75 50--150 0.2 72 1 0--45 6ppd-quinone

LD:WG192905-5 L83306-1 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.9440.91530--40

CCC:WG192905-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

ParameterMDLRDLUnitsTrue ValueCCC Value% Rec.Qual Lab Limit6ppd-quinone0.010.05ug/L1110080--120

Currogata	d5-6PPDQ
Surrogate:	
(Lab Limits)	20200
L83306-1	78
L83306-2	75
L83306-11	76
L83306-12	76
L83306-21	75
L83306-22	79
L83306-31	59
L83306-32	56
L83306-41	61
L83306-42	66
L83306-51	66
L83306-52	68
L83306-61	67
L83306-62	60
L83306-71	76
L83306-72	76
WG192905-1	80
WG192905-2	80
WG192905-3	67
WG192905-4	69
WG192905-5	75
WG192905-6	101

Workgroup: WG192906 6PPDQ by LCMS

MB:WG192906-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG192906-2 MB:WG192906-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.231 116 50--150

MSD:WG192906-4 MS:WG192906-3 L83306-64 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.686 0.2 0.856 85 50--150 0.2 0.863 88 1 0--45 6ppd-quinone

LD:WG192906-5 L83306-33 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

(Lub Dupillate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.8740.90840.-40

CCC:WG192906-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.01
 101
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L83306-3	75
L83306-4	74
L83306-13	69
L83306-14	73
L83306-23	71
L83306-24	70
L83306-33	69
L83306-34	71
L83306-43	69
L83306-44	66
L83306-53	73
L83306-54	72
L83306-63	69
L83306-64	74
L83306-73	73
L83306-74	72
WG192906-1	71
WG192906-2	83
WG192906-3	77
WG192906-4	75
WG192906-5	67
WG192906-6	100

Workgroup: WG192907 6PPDQ by LCMS

MB:WG192907-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

0.002

SB:WG192907-2 MB:WG192907-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.202 101 50--150

MSD:WG192907-4 MS:WG192907-3 L83306-45 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

0.627

0.625

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.415 0.2 0.584 84 50--150 0.2 0.573 79 2 0--45 6ppd-quinone

0

0--40

LD:WG192907-5 L83306-16 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL Units SAMP Value LD Value RPD Qual Lab Limit

ug/L

COCCUMO ACCORDE CANALLA CATURANTE L'ALLA ACCORDE LONG MARILA MOST COD ACCT. CODDO LA LONG DA LA CATURA DE LA CATURA DEL CATURA DE LA CATURA DEL CATURA DEL CATURA DE LA CATURA

CCC:WG192907-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

0.01

(Continuing Calibration Check)

6ppd-quinone

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.03
 103
 80--120

Commence	de coppo
Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L83306-5	68
L83306-6	60
L83306-15	69
L83306-16	64
L83306-25	72
L83306-26	64
L83306-35	67
L83306-36	59
L83306-45	68
L83306-46	61
L83306-55	66
L83306-56	57
L83306-65	65
L83306-66	58
L83306-75	68
L83306-76	67
WG192907-1	63
WG192907-2	69
WG192907-3	67
WG192907-4	73
WG192907-5	59
WG192907-6	88

Workgroup: WG192908 6PPDQ by LCMS

MB:WG192908-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

0.002

SB:WG192908-2 MB:WG192908-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.201 100 50--150

MSD:WG192908-4 MS:WG192908-3 L83306-57 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

0.822

0.798

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL % Rec. Qual RPD Parameter Qual 0.002 0.01 ug/L 0.862 0.2 1.03 84 50--150 0.2 1.02 81 0 0--45 6ppd-quinone

3

0--40

LD:WG192908-5 L83306-77 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL Units SAMP Value LD Value RPD Qual Lab Limit

ug/L

CCC:WG192908-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

0.01

(Continuing Calibration Check)

6ppd-quinone

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.04
 104
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L83306-7	61
L83306-8	61
L83306-17	65
L83306-18	63
L83306-27	67
L83306-28	62
L83306-37	58
L83306-38	54
L83306-47	56
L83306-48	58
L83306-57	58
L83306-58	55
L83306-67	55
L83306-68	55
L83306-77	64
L83306-78	60
WG192908-1	61
WG192908-2	64
WG192908-3	55
WG192908-4	58
WG192908-5	59
WG192908-6	85

Workgroup: WG192909 6PPDQ by LCMS

MB:WG192909-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG192909-2 MB:WG192909-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.213 107 50--150

MSD:WG192909-4 MS:WG192909-3 L83306-39 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual Lab Limit MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 1.35 0.2 1.57 106 50--150 0.2 1.51 75 0--45 6ppd-quinone

LD:WG192909-5 L83306-19 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L1.331.3200--40

CCC:WG192909-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 1.02
 102
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L83306-9	64
L83306-10	66
L83306-19	64
L83306-20	63
L83306-29	62
L83306-30	68
L83306-39	66
L83306-40	66
L83306-49	68
L83306-50	62
L83306-59	68
L83306-60	68
L83306-70	63
L83306-79	65
L83306-80	63
WG192909-1	65
WG192909-2	62
WG192909-3	66
WG192909-4	67
WG192909-5	68
WG192909-6	103

Workgroup: WG192910 6PPDQ by LCMS

MB:WG192910-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

6ppd-quinone

Parameter MDL RDL Units MB Value Qual 0.002 0.01 ug/L <MDL 6ppd-quinone

SB:WG192910-2 MB:WG192910-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.225 113 50--150

MSD:WG192910-4 MS:WG192910-3 L83306-86 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

1

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.0071 0.2 0.234 113 50--150 0.2 0.227 110 3 0--45 6ppd-quinone

LD:WG192910-5 L83306-81 Matrix: BLANK WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Units SAMP Value Parameter MDL RDL **LD Value** RPD **Qual Lab Limit** 6ppd-quinone 0.002 0.01 ug/L 0.003 0.0026 0--40

CCC:WG192910-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

Parameter MDL RDL Units True Value CCC Value % Rec. **Qual Lab Limit** 0.01 0.05 ug/L 1.02 102 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L83306-81	76
L83306-82	75
L83306-83	69
L83306-84	67
L83306-85	67
L83306-86	69
WG192910-1	73
WG192910-2	73
WG192910-3	68
WG192910-4	73
WG192910-5	73
WG192910-6	98

Login: P83306 Project: 421520-200

WDOE Stormwater BMP Research - Field Protocol Event 2

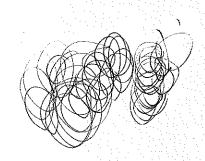
FSU TC:		
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1 DM: Machan	Ellean	1.1

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	Relinquished by Nicholab Harry	Date 2/24	Time 1640		
	Received by	Date 2-29-24	Time 1640		
	Sample Numbers		[All]		
Sample Number	P83306-1	P83306-2	P83306-3		
QC Link	and his all the course (), the first was and reference of the course of				
Locator	CONT	CONT	CONT		
Short Loc Desc	1 Control of the Cont	and the second of the second o			
Locator Desc	Control Sample	Control Sample	Control Sample		
Site	I-STAPE	I-STAPE	I-STAPE		
Comments					
Start Date/Time	2024-02-28 09:37	2024-02-28 10:00	10573		
End Date/Time		.			
Time Span					
Sample Depth					
SAMP INFO	BATCH 1	BATCH 1	BATCH 2		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)		

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-6 P83306-5 P83306-4 Sample Number QC Link CONT CONT CONT Locator Short Loc Desc Control Sample Control Sample Control Sample Locator Desc I-5TAPE I-5TAPE I-5TAPE Site Comments 2024-02-28 2024-02-28 20211-02-19 Start Date/Time 14:08 13:04 End Date/Time Time Span Sample Depth **BATCH 2 BATCH 3** BATCH 3 SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

Login: P83306 Project: 421520-200	WDOE Stormwater BMP Resea	arch - Fleid Frotogoi Event 2	LPM: Meghan Elkey
Sample Number	P83306-7	P83306-8	P83306-9
QC Link	ganda arangan gang panganankan kan kan 19 arangan arangan kan mangan kan arangan kan arangan teruntuk dapan sa		
Locator	CONT	CONT	CONT
Short Loc Desc		and \$2000 colored programment and colored to the colored to the colored to the colored colored to the colored	angent hanne werden gest a total total total territoria territoria total
Locator Desc	Control Sample	Control Sample	Control Sample
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments			
Start Date/Time	2024-02-28	2024-02-28 14-52.	2024-02-28
End Date/Time			
Time Span			
Sample Depth			
SAMP INFO	BATCH 4	BATCH 4	BATCH 5
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)



Login: P83306	WDOE Stormwater BMP Resea	rch - Fleid Protocol Event 2	rau ic.
Project: 421520-200			LPM: Meghan Elkey
Sample Number	P83306-10	P83306-11	P83306-12
QC Link	An industrial of the Confession of the Confessio	And the second s	
Locator	CONT	PTFE_TUB	PTFE_TUB
Short Loc Desc			and the state of t
Locator Desc	Control Sample	PTFE tubing	PTFE tubing
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments			
Start Date/Time	2024-02-28 15:47	2024-02-28 05:39	2024-02-28
End Date/Time			
Time Span			
Sample Depth	and accompany to make the many and place of the form that greater propriet in a clean was all all the place of the discharge propriet in a clean was all all the place of the discharge propriet in a clean was all the place of the discharge propriet in a clean was all the place of the discharge propriet in a clean was all the place of the discharge propriet in a clean was all the place of the discharge propriet in a clean was all the place of th		
SAMP INFO	BATCH 5	BATCH 1	BATCH 1
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P83306	WDOE Stormwater BMP Resear	rch - Field Protocol Event 2	F50 IC:
Project: 421520-200	•		LPM: Meghan Elkey
Sample Number	P83306-13	P83306-14	P83306-15
QC Link	Comment of the Commen	annua (a) (a) (a) (a) (a) (a) (a) (a) (a) (a	The state of the s
Locator	PTFE_TUB	PTFE_TUB	PTFE_TUB
Short Loc Desc	And the second s	Manual to the property and the state of the	g y g g g men formal the home the home mention and the properties of the content
Locator Desc	PTFE tubing	PTFE tubing	PTFE tubing
Site	I-5TAPE	I-STAPE	I-5TAPE
Comments			
Start Date/Time	2024-02-28 10:25	2024-02-28 10:50	13:07
End Date/Time			
Time Span	Common and Mary Aligh (A) for the prince on parameter A SEA Aligh Aligh (A) and a sea Aligh (A) and (A		
Sample Depth	And the second s		
SAMP INFO	BATCH 2	BATCH 2	BATCH 3
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-18 P83306-17 P83306-16 Sample Number QC Link PTFE_TUB PTFE_TUB PTFE_TUB Locator Short Loc Desc PTFE tubing PTFE tubing PTFE tubing **Locator Desc** I-5TAPE I-5TAPE I-5TAPE Site Comments 2024-02-28 2024-02-28 2024-02-28 Start Date/Time 14:54 W:30 14:09 End Date/Time Time Span Sample Depth BATCH 4 **BATCH 4 BATCH 3** SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

Project: 421520-200		P83306-20	LPM: Meghan Elkey P83306-21
Sample Number	P83306-19	FOJJUU*ZU AND AND THE CONTROL OF TH	A restrict and the control of the co
QC Link	STEE TIID	PTFE_TUB	PTFE_TUB_OLD
Locator	PTFE_TUB	- a month of the state of the s	and the state of t
Short Loc Desc	PTFE tubing	PTFE tubing	PTFE Tubing - Old
Locator Desc Site	I-5TAPE	I-5TAPE	I-STAPE
Comments			
Start Date/Time	2024-02-28	1024-02-28	2024-02-28
End Date/Time			***
Time Span			
Sample Depth			
SAMP INFO	BATCH 5	BATCH 5	BATCH 1
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

Login: P83306	WDOE Stormwater BMP Resea	rch - Field Protocol Event 2	LPM: Meghan Elkey
Project: 421520-200 Sample Number	P83306-22	P83306-23	P83306-24
QC Link			
Locator	PTFE_TUB_OLD	PTFE_TUB_OLD	PTFE_TUB_OLD
Short Loc Desc	egan mengenya kanan k	Approximately appropriate the book of a transformation of the propriate appropriate appropriate the propriate approximation of the propriate approximation	DTE Taking Old
Locator Desc	PTFE Tubing - Old	PTFE Tubing - Old	PTFE Tubing - Old
Site	I-5TAPE	I-5TAPE	I-STAPE
Comments			
Start Date/Time	2024-02-28 10:03	2024-02-28	2024-02-28
End Date/Time			
Time Span			
Sample Depth	Agend Markachen (Agend Agend A		
SAMP INFO	BATCH 1	BATCH 2	BATCH 2
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-27 P83306-26 Sample Number P83306-25 QC Link PTFE_TUB_OLD PTFE_TUB_OLD PTFE_TUB_OLD Locator Short Loc Desc PTFE Tubing - Old PTFE Tubing - Old PTFE Tubing - Old Locator Desc I-5TAPE I-5TAPE I-5TAPE Site Comments 2014-02-28 13:08 2024-02-28 Start Date/Time 2024-02-28 14:32 14:11 End Date/Time Time Span Sample Depth **BATCH 4 BATCH 3 BATCH 3** SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

FSU TC: WDOE Stormwater BMP Research - Field Protocol Event 2 Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-30 P83306-29 P83306-28 Sample Number QC Link PTFE_TUB_OLD PTFE_TUB_OLD PTFE_TUB_OLD Locator Short Loc Desc PTFE Tubing - Old PTFE Tubing - Old PTFE Tubing - Old **Locator Desc** I-5TAPE I-5TAPE Site I-5TAPE Comments 2014-02-28 2024-02-28 2024-02-23 Start Date/Time M.65 15:50 15:24 End Date/Time Time Span Sample Depth **BATCH 5 BATCH 5 BATCH 4** SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

Login: P83306	WDOE Stormwater BMP Resea	rch - Fleid Protocol Event 2	130 10.
Project: 421520-200			LPM: Meghan Elkey
Sample Number	P83306-31	P83306-32	P83306-33
QC Link			
Locator	HDPE_24	HDPE_24	HDPE_24
Short Loc Desc		and the second s	And the second s
Locator Desc	HDPE - 24 hours	HDPE - 24 hours	HDPE - 24 hours
Site	I-STAPE	I-STAPE	I-STAPE
Comments			
Start Date/Time	2024-02-28 09:43	2024-02-28 10:04	2014-02-28
End Date/Time			
Time Span			
Sample Depth	NOTE THE STREET AND ADDRESS OF THE STREET ADDRESS OF THE STREET AND ADDRESS OF THE STREET ADDRESS OF THE STREET ADDRESS OF THE STREET AND ADDRESS OF THE STREET AND ADDRESS OF THE STREET ADDRESS OF THE	Contract and the Contract of t	
and the state of t	BATOLIA	BATCH 1	BATCH 2
SAMP INFO	BATCH 1	DAIGHI	
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)

Login: P83306	WDOE Stormwater BMP Resea	rch - Field Protocol Event 2	FSU TC: LPM: Meghan Elkey
Project: 421520-200 Sample Number	P83306-34	P83306-35	P83306-36
QC Link	and recovered the fall of the highest and and the property of the second		A COMMON PROPERTY OF THE PROPE
Locator	HDPE_24	HDPE_24	HDPE_24
Short Loc Desc	ggydramor v mentydd Aprin o glyt gynna o rae men yr hyfref y o roentgaerae ar ar ar ar hyfref y o roentgaerae ar ar ar ar ar fyll y dael ar	and a graph and a superior and a superior and a substitute of the superior of the substitute o	
Locator Desc	HDPE - 24 hours	HDPE - 24 hours	HDPE - 24 hours
Site	I-5TAPE	I-STAPE	I-STAPE
Comments			
Start Date/Time	2024-02-28	2024-02-28 /3:09	2024-02-28
End Date/Time	and a make the plant and a part of the half all the Order of the make the make the three the Common of the Common		
Time Span	4.5 [Left grant point production and the first point point point point point for the first point po		
Sample Depth	and Guerral processing and production that And And Andrew and height of the Contract Contract Contrac		
SAMP INFO	BATCH 2	BATCH 3	BATCH 3
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)	4 LG 6PPDQ (39)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-39 P83306-38 P83306-37 Sample Number QC Link HDPE 24 HDPE_24 HDPE_24 Locator **Short Loc Desc** HDPE - 24 hours HDPE - 24 hours **Locator Desc** HDPE - 24 hours I-5TAPE I-5TAPE I-5TAPE Site 1024-02-28 Comments 2024-02-28 2024-02-29 15:28 Start Date/Time End Date/Time Time Span Sample Depth **BATCH 5 BATCH 4** BATCH 4 SAMP INFO 4 LG 6PPDQ (39) 4 LG 6PPDQ (39) 4 LG 6PPDQ (39) Dept, Matrix, Prod (Cont ID)

Login: P83306	WDOE Stormwater BMP Resea	rch - Field Protocol Event 2	FSU TC:
Project: 421520-200		: -	LPM: Meghan Elkey
Sample Number	P83306-40	P83306-41	P83306-42
QC Link	TO BE A STATE OF THE PROPERTY	and the state of t	egige ziya jajama a wanistana wanista isa 2000 toto tan interiora ta 1000 toto ta 1000
Locator	HDPE_24	HDPE_24_20L	HDPE_24_20L
Short Loc Desc		og ugrammennt i å ser ett på sig popular processionen men er	
Locator Desc	HDPE - 24 hours	HDPE - 24 hours - 20L	HDPE - 24 hours - 20L
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments		20L carboy	20L carboy
Start Date/Time	2024-02-28 15:52	2924-02-28 09:44	2014-02-28 10:05
End Date/Time			
Time Span			
Sample Depth			
SAMP INFO	BATCH 5	BATCH 1	BATCH 1
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (39)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-45 P83306-44 P83306-43 Sample Number QC Link HDPE_24_20L HDPE 24_20L HDPE_24_20L Locator Short Loc Desc HDPE - 24 hours - 20L HDPE - 24 hours - 20L HDPE - 24 hours - 20L Locator Desc I-5TAPE I-5TAPE I-5TAPE Site 20L carboy 20L carboy Comments 20L carboy 2024-02-28 2624-02-28 Start Date/Time 10:30 13:10 End Date/Time Time Span Sample Depth **BATCH 3 BATCH 2** BATCH 2 SAMP INFO 4 LG 6PPDQ (2) 4 LG 6PPDQ (2) 4 LG 6PPDQ (2) Dept, Matrix, Prod (Cont ID)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-48 P83306-47 P83306-46 Sample Number QC Link HDPE_24_20L HDPE_24_20L HDPE_24_20L Locator Short Loc Desc HDPE - 24 hours - 20L HDPE - 24 hours - 20L HDPE - 24 hours - 20L **Locator Desc** I-5TAPE I-5TAPE I-5TAPE Site 20L carboy 20L carboy Comments 20L carboy 2024-02-28 2024-02-28 2024-02-28 Start Date/Time 0 141:36 14:59 14:13 End Date/Time Time Span Sample Depth **BATCH 4** BATCH 3 **BATCH 4** SAMP INFO 4 LG 6PPDQ (2) 4 LG 6PPDQ (2) Dept, Matrix, Prod 4 LG 6PPDQ (2) (Cont ID)

Login: P83306 Project: 421520-200	WDOE Stormwater BMP Resea		LPM: Meghan Elkey
Sample Number	P83306-49	P83306-50	P83306-51
QC Link	Specified and the filled by specified and specified and the specified and specified an	2200 CONTROL OF A CAN AND AND AND AND AND AND AND AND AND A	
Locator	HDPE_24_20L	HDPE_24_20L	HDPE_OLD
Short Loc Desc			
Locator Desc	HDPE - 24 hours - 20L	HDPE - 24 hours - 20L	HDPE - Old
Site	I-5TAPE	I-5TAPE	I-STAPE
Comments	20L carboy	20L carboy	Used 250mL AWM HDPE, acid washed
Start Date/Time	2024-02-28	1024-02-28 15:53	2024-02-28 09:47
End Date/Time			
Time Span			
Sample Depth			
SAMP INFO	BATCH 5	BATCH 5	BATCH 1
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-53 P83306-54 P83306-52 Sample Number QC Link HDPE_OLD HDPE_OLD Locator HDPE_OLD Short Loc Desc HDPE - Old HDPE - Old HDPE - Old Locator Desc I-5TAPE I-5TAPE Site I-5TAPE Used 250mL AWM HDPE, acid Used 250mL AWM HDPE, acid Comments Used 250mL AWM HDPE, acid washed washed washed 2024-07-28 Start Date/Time 1014-02-12 10:58 End Date/Time Time Span Sample Depth **BATCH 2 BATCH 1 BATCH 2** SAMP INFO 4 LG 6PPDQ (2) 4 LG 6PPDQ (2) 4 LG 6PPDQ (2) Dept, Matrix, Prod (Cont ID)

Login: P83306 Project: 421520-200	WDOE Stormwater BMP Resea	ren - Field Protocol Event 2	FSU TC: LPM: Meghan Elkey
Sample Number	P83306-55	P83306-56	P83306-57
QC Link		aggermenne sakuna aran sa sinii in sinii sa sinii sa sinii sa	
Locator	HDPE_OLD	HDPE_OLD	HDPE_OLD
Short Loc Desc		e grande de la companya del la companya de la companya del la companya de la comp	The second secon
Locator Desc	HDPE - Old	HDPE - Old	HDPE - Old
Site	I-5TAPE	I-5TAPE	I-STAPE
Comments	Used 250mL AWM HDPE, acid washed	Used 250mL AWM HDPE, acid washed	Used 250mL AWM HDPE, acid washed
Start Date/Time	2024-02-28	2024-02-28 NH:16	2024-02-28
End Date/Time			
Time Span			
Sample Depth	ang ikang menamangan dalam dalam dalam dang menghipingan pemangangan menghipi dalam		
SAMP INFO	BATCH 3	BATCH 3	BATCH 4
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

Login: P83306 Project: 421520-200			LPM: Meghan Elkey
Sample Number	P83306-58	P83306-59	P83306-60
QC Link	and find the first warmate and the exchanged a granded a residence of source and the destruction of the control	gramman of the transfer of the state of the transfer of the state of t	
Locator	HDPE_OLD	HDPE_OLD	HDPE_OLD
Short Loc Desc	The state of the s		The state of the s
Locator Desc	HDPE - Old	HDPE - Old	HDPE - Old
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	Used 250mL AWM HDPE, acid washed	Used 250mL AWM HDPE, acid washed	Used 250mL AWM HDPE, acid washed
Start Date/Time	2024-02-28	19:34	2024-02-28
End Date/Time			
Time Span			
Sample Depth	ggg gargar gog ga pamanan an		
SAMP INFO	BATCH 4	BATCH 5	BATCH 5
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)	4 LG 6PPDQ (2)

FSU TC: WDOE Stormwater BMP Research - Field Protocol Event 2 Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-63 P83306-62 P83306-61 Sample Number **QC** Link AUTO_OLD AUTO_OLD AUTO_OLD Locator Short Loc Desc Auto - Old Auto - Old Auto - Old **Locator Desc** I-5TAPE I-5TAPE I-5TAPE Site Used 1L CWM HDPE, acid Used 1L CWM HDPE, acid Used 1L CWM HDPE, acid Comments washed washed washed 2024-02-28 2024-02-28 Start Date/Time 10:35 **End Date/Time** Time Span Sample Depth **BATCH 2 BATCH 1** BATCH 1 SAMP INFO 4 LG 6PPDQ (6) 4 LG 6PPDQ (6) Dept, Matrix, Prod 4 LG 6PPDQ (6) (Cont ID)

WDOE Stormwater BMP Research - Field Protocol Event 2 **FSU TC:** Login: P83306 Project: 421520-200 LPM: Meghan Elkey P83306-66 Sample Number P83306-64 P83306-65 QC Link AUTO_OLD AUTO_OLD Locator AUTO_OLD Short Loc Desc Auto - Old Auto - Old Auto - Old **Locator Desc** I-5TAPE I-5TAPE Site I-5TAPE Used 1L CWM HDPE, acid Used 1L CWM HDPE, acid Used 1L CWM HDPE, acid Comments washed washed washed 2024-02-28 Start Date/Time 32-10-18 2024-02-28 11:00 10 11-4 14:17 End Date/Time Time Span Sample Depth **BATCH 2 BATCH 3 BATCH 3** SAMP INFO 4 LG 6PPDQ (6) 4 LG 6PPDQ (6) 4 LG 6PPDQ (6) Dept, Matrix, Prod (Cont ID)

Sample Number	P83306-67	P83306-68	P83306-69
QC Link	ara julius Aramalinas mandalas iradikin ja da jamanga arabah jahannan arabah ar		And the second s
Locator	AUTO_OLD	AUTO_OLD	AUTO_OLD
Short Loc Desc	A Company of the Comp	Kalilla pir forma hova hojimiya mayama a anaman a samunin ma'a a ana kila kila kila kila kila kila kila kil	
Locator Desc	Auto - Old	Auto - Old	Auto - Old
Site	I-5TAPE	I-5TAPE	I-5TAPE
Comments	Used 1L CWM HDPE, acid washed	Used 1L CWM HDPE, acid washed	Used 1L CWM HDPE, acid washed
Start Date/Time	2024-02-28 14:40	3.024-02-28 15:03	
End Date/Time			
Time Span			
Sample Depth			
SAMP INFO	BATCH 4	BATCH 4	BATCH 5

Login: P83306	WDOE Stormwater BMP Resea	irch - Field Protocol Event 2	F30 10:
Project: 421520-200		· · · · · · · · · · · · · · · · · · ·	LPM: Meghan Elkey
Sample Number	P83306-70	P83306-71	P83306-72
QC Link		Section 1 to 1	opposition of the second of th
Locator	AUTO_OLD	FIELDDUP	FIELDDUP
Short Loc Desc	1 (1) Share the second of the	manustrassiniste alguna majama majama langun palaga para para paga panga pang	
Locator Desc	Auto - Old	FIELD DUPLICATE	FIELD DUPLICATE
Site	1-5TAPE	FLDQC	FLDQC
Comments	Used 1L CWM HDPE, acid washed		
Start Date/Time	2924-02-28 15:57	2024.02-88 09:53	2024-01 8 14:13
End Date/Time	e partir na sanda da d	•	
Time Span	The second secon		
Sample Depth		aga Tamang kanang dalah dan Makang sa kanang ana dan dalah da dan Santanan ang ang dalah da dan dan dan dan dan dan dan dan dan	
SAMP INFO	BATCH 5	BATCH 1	BATCH 1
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (6)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-75 P83306-74 P83306-73 Sample Number QC Link **FIELDDUP FIELDDUP FIELDDUP** Locator Short Loc Desc FIELD DUPLICATE FIELD DUPLICATE FIELD DUPLICATE Locator Desc **FLDQC FLDQC FLDQC** Site Comments 2024-02-78 2024-02-20 Start Date/Time 9024-02-29 End Date/Time Time Span Sample Depth **BATCH 2 BATCH 3 BATCH 2** SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

FSU TC: WDOE Stormwater BMP Research - Field Protocol Event 2 Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-78 P83306-77 P83306-76 Sample Number QC Link **FIELDDUP FIELDDUP FIELDDUP** Locator Short Loc Desc FIELD DUPLICATE FIELD DUPLICATE FIELD DUPLICATE Locator Desc **FLDQC FLDQC FLDQC** Site Comments 2024-02-28 -2024-02-28 2024-02-28 Start Date/Time 15:06 14:43 14:20 End Date/Time Time Span Sample Depth **BATCH 4 BATCH 4 BATCH 3** SAMP INFO 4 LG 6PPDQ (43) 4 LG 6PPDQ (43) Dept, Matrix, Prod 4 LG 6PPDQ (43) (Cont ID)

Login: P83306	WDOE Stormwater BMP Resea	rch - Field Protocol Event 2	FSUTC:		
Project: 421520-200			LPM: Meghan Elkey		
Sample Number	P83306-79	P83306-80	P83306-81		
QC Link	All light of the property of t	makan ngaga pangangan pangangan pangangan ngangan sa	A second of the second		
Locator	FIELDDUP	FIELDDUP	EQUIPBLANK		
Short Loc Desc	ing di summi di ing menggar piping seleping piping seleping piping seleping ping seleping ping seleping ping seleping ping seleping ping seleping ping seleping ping seleping ping ping seleping ping ping seleping ping ping ping seleping ping ping ping ping ping ping ping		EQUIPBLANK		
Locator Desc	FIELD DUPLICATE	FIELD DUPLICATE	EQUIPMENT BLANK		
Site	FLDQC	FLDQC	METRO		
Comments			Promodes: BATCH 6		
Start Date/Time	2024-02-28	2024-02-28 15:59	2024-02-28 08:52		
End Date/Time			08:58		
Time Span					
Sample Depth					
SAMP INFO	BATCH 5	BATCH 5	Pre or Post: Pre Tubing type:		
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	4 LN 6PPDQ (43)		

Please run
All 6 rmsates
m separate
botch (BATCH #6)

Login: P83306	WDOE Stormwater BMP Resea	rch - Field Protocol Event 2	FSU TC:
Project: 421520-200			LPM: Meghan Elkey
Sample Number	P83306-82	P83306-83	P83306-84
QC Link	and and the second of the probabilities and the Problems of the second o		B CONTRACTOR OF THE CONTRACTOR
Locator	EQUIPBLANK	EQUIPBLANK	EQUIPBLANK
Short Loc Desc	EQUIPBLANK	EQUIPBLANK	EQUIPBLANK
Locator Desc	EQUIPMENT BLANK	EQUIPMENT BLANK	EQUIPMENT BLANK
Site	METRO	METRO	METRO Secretaria de la constitución de la constitu
Comments		Pre-gamping Unun mank	
Start Date/Time	2024-01-28 08:52	- " 09-62	505-4-05-58
End Date/Time	05:09	09:12	
Time Span			
Sample Depth			
SAMP INFO	Pre or Post: Pre Tubing type: Pre OLD	THE OFFICE PRE-CHURN	
Dept, Matrix, Prod (Cont ID)	4 LN 6PPDQ (43)	4 LN 6PPDQ (43)	4 LN 6PPDQ (43)

WDOE Stormwater BMP Research - Field Protocol Event 2 FSU TC: Login: P83306 LPM: Meghan Elkey Project: 421520-200 P83306-86 P83306-85 Sample Number QC Link **EQUIPBLANK EQUIPBLANK** Locator **EQUIPBLANK Short Loc Desc EQUIPBLANK EQUIPMENT BLANK** Locator Desc EQUIPMENT BLANK **METRO METRO** Site Comments Start Date/Time **End Date/Time** Time Span Sample Depth Pre or Post: 105k SAMP INFO Tubing type: ******** 4 LN 6PPDQ (43) 4 LN 6PPDQ (43) Dept, Matrix, Prod (Cont ID)

1-68,70-86

LIQUID SAMPLE RECEIPT RECORD

Login Number(s): \$\frac{330}{}	6-(1 -86)	Project No.: 42/5	20-200		Sub-Contracting: Y / N	List Product(s):		
Collect Date(s):	28-24	Receive Date:	728 20	29-24	Changes: Y (N)	List Parameter(s):		
	SAMPLE RECEIPT	CONDITIONS	100		FIELD PRESERVATION CHI	ECKLIST (Circle and/or check	applicable sele	ections)
CONDITION	Acceptable? Comment ID	CONDITION	Acceptable?	Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Labels / Fieldsheets	YVIN	Volumes	/P N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√ fleid sheet for F. pH	Y / N	☐ Notify ORG
Container	/ ¥ / N	Holding Times	1/Y/N	_	CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
Temperature (w/ ice)	Y NINA	Delivery Location	Y/ N		NO23 pH < 2 w/ H ₂ SO ₄	☐ Check pH	Y / N/NA	Preserve by SM
	TITLE COUNT (#) AND DESCRIE	TION and SAMPLE N	IMBÉRS		CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ field sheet for pH	Y/N	☐ Deliver to CONV
#	Bottle Description:	Sample Numbers	•		ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y/N	☐ Preserve By SM
40 mL clear vial (VOA):					O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y/N	Preserve by SM
60 mL clear glass (PHYTO):					PHYTOPLANKTON / Lugois	Visually inspect	Y/N	Deliver to MICRO
60 mL CWM HDPE;					TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	☐ Check pH	Y/N	Preserve By SM
125 mL AWM HDPE:					TOC / pH < 2 w/ HCi (NPDES only)	☐ Check pH	Y/N	☐ Preserve By SM
125 mL CNM HDPE;					TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check documentation	Y/N	☐ Deliver to CONV
125 mL CWM HDPE:					WDO / FIXED	Visually inspect	Y/N	☐ Deliver to CONV
125 mL GANM:					Other:			
125 mL GANM w/HCi					ROUTINE SM PRESERVATION		eck applicable	selections)
250 mL AWM HDPE:					PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
250 mL CWM HDPE:	•				Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√ field sheet for F. pH	YIN	☐ Adjust pH
250 mL CWM HDPE (MICRO					HG-CVAA-L-Teffon (T / D) / pH < 2 w/ ULTRA HC	Preserva & deliver	NA	NA
85 250 mL GAWM: (-(58,70-86				ICPMS / HG-CVAA-M (T / D) / pH < 2 w/ ULTRA HNO ₃	Preserve & deliver	NA	NA
250 mL GAWM w/ H2SO4:					TOC / pH < 2 w/ HCl	Preserve & deliver	NA	NA
300 mL WDQ (8 hour HT):					Other:	•		
			***************************************		·			
500 mL AWM HDPE:					Other;			
500 mL CWM HDPE:					INTERFERENCE TES	i (Circle andlor check-applica	ble selections	
500 mL CWM HDPE: 500 mL CWM PP (MICRO):						iT (Circle and/or check applica <u>Positive Test?</u>	ble selections Treated	Corrective Action
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS):					INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation)			
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation)	Positive Test?	Treated	Corrective Action
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg):					INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested Y / N / not tested Y / N / not tested	Treated Y / N	Corrective Action Deliver to ORG
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg					INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation)	Positive Test? Y / N / not tested Y / N / not tested	Treated Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF)	Positive Test? Y / N / not tested	Treated Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other:	Positive Test? Y / N / not tested HEADSPACE CHECK	Treated Y/N Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action)	Positive Test? Y / N / not tested	Treated Y/N Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO):	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Corrective Action
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect)	Positive Test? Y / N / not tested HEADSPAGE CHECK Check For Headspace (@ 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) VOA (Visually inspect) WDO (Visually inspect)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1")	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify Micro Notify CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ :	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other:	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N Y / N Y / N Y / N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	ed (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHEC	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N Y / N Y / N Y / N Y / N Plicable select	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ :	ed (METALS): n Units (METALS):				INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECK Product (SM Action)	Positive Test? Y / N / not tested HEADSPACE CHECK Check For Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace	Treated Y / N Y / N Y / N Y / N Y / N Acceptable? Y / N Y / N Y / N Y / N Y / N Plicable select	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify ORG Notify CONV Corrective Action
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	ed (METALS):	TIFICATIONS			INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECK Product (SM Action) ORTHOP (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace CKLIST (Circle and/or check ap	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Y/N Plicable select Field Blank Y/N	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify ORG Notify CONV Corrective Action Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon, (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE: Other:	ed (METALS): n Units (METALS): COMMENTS / NO	TIFICATIONS			INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check field sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MICRO (Visually inspect) VOA (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECK Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace Yes tested Y (within 15 min y / n) / N Y (within 1 day y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Field Blank Y/N Y/N/NA	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify ORG Notify CONV Corrective Action Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon (Hg): 500 mL Teflon, double-bagg 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE:	ed (METALS): n Units (METALS): COMMENTS / NO	TIFICATIONS			INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check fleid sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECT Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet)	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace (*KLIST (Circle and/or check ap Field Filtered Y (within 15 min y / n) / N Y (within 15 min y / n) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Plicable select Field Blank Y/N Y/N/NA	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Deliver to CONV
500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon, (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE: Other:	ed (METALS): n Units (METALS): COMMENTS / NO	TIFICATIONS			INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check fleid sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECK Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace Yero headspace Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Pilicable select Field Blank Y/N Y/N/NA Y/N/NA Y/N/NA	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV
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500 mL CWM HDPE: 500 mL CWM PP (MICRO): 500 mL HDPE (METALS): 500 mL HDPE, double-bagg 500 mL Teflon, (Hg): 500 mL Teflon, double-bagg 500 mL GANM / GAWM: 500 mL Polystyrene Filtratio 1L AWM HDPE: 1L CWM HDPE: 1L CWM PP (MICRO): 1L GANM: 1L GCWM: 1L GAWM w/ H ₂ SO ₄ : 2L CWM HDPE: Other:	ed (METALS): n Units (METALS): COMMENTS / NO	TIFICATIONS			INTERFERENCE TES Product / Interference (SM Action) BNA / Chlorine (Check documentation) CN / Chlorine (Check documentation) CN / Sulfide (Check fleid sheet for DF) VOA / Chlorine (Check documentation) Other: PRODUCT (SM Action) MiCRO (Visually inspect) TOTSULFIDE (Visually inspect) VOA (Visually inspect) WDO (Visually inspect) Other: FIELD FILTRATION CHECK Product (SM Action) ORTHOP (Check Field Sheet) NO2 / NO3 / NO3 / NH3 / SI (Documentation) Dissolved Metals (Check Field Sheet) DOC (Deliver / Notify Unit)	Positive Test? Y / N / not tested HEADSPACE CHECK Check FOr Headspace (@ 1") Headspace (< 1") Zero headspace Zero headspace Zero headspace Yero headspace Y (within 15 min y / n) / N Y (within 15 min y / n) / N Y (within 15 min or 1 day) / N	Treated Y/N Y/N Y/N Y/N Y/N Acceptable? Y/N Y/N Y/N Y/N Y/N Y/N Pilicable select Field Blank Y/N Y/N/NA Y/N/NA Y/N/NA	Corrective Action Deliver to ORG Deliver to CONV Deliver to CONV Deliver to ORG Corrective Action Notify MICRO Notify CONV Notify CONV Corrective Action Deliver to CONV

CC: 🗆 AQUATOX, 🗆 CONV, 🗈 METALS, 🗋 MICRO, 🗀 ORG	CC:		AQUATOX.		CONV.	. 🗆	METALS.	. 🗆	MICRO	. 🗆	ORG.	. C
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NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
- 3. Do not test put for preserved BNA and TOTSULFIDE samples.
- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

FEB 29'24 17:10

Study_ID	Location_ID	Study_Specific_Location_ID	Field_Collection_Type	Field_Collector	Field_Collection_Start_Date	Field_Collection_Start_Time	Field_Collection_End_Date
		LAB_01	Sample		2/28/2024	9:51:00	
		LAB_01	QC Surrogate		2/28/2024	9:51:00	
		LAB_02	Sample		2/28/2024	10:11:00	
		LAB_02	QC Surrogate		2/28/2024	10:11:00	
		LAB_03	Sample		2/28/2024	10:37:00	
		LAB_03	QC Surrogate		2/28/2024	10:37:00	
		LAB_04	Sample		2/28/2024	11:03:00	
		LAB_04	QC Surrogate		2/28/2024	11:03:00	
		LAB_05	Sample		2/28/2024	13:15:00	
		LAB_05	QC Surrogate		2/28/2024	13:15:00	
		LAB_06	Sample		2/28/2024	14:18:00	
		LAB_06	QC Surrogate		2/28/2024	14:18:00	
		LAB_07	Sample		2/28/2024	14:42:00	
		LAB_07	QC Surrogate		2/28/2024	14:42:00	
		LAB_08	Sample		2/28/2024	15:05:00	
		LAB_08	QC Surrogate		2/28/2024	15:05:00	
		LAB_09	Sample		2/28/2024	15:36:00	
		LAB_09	QC Surrogate		2/28/2024	15:36:00	
		LAB_10	Sample		2/28/2024	15:58:00	
		LAB_10	QC Surrogate		2/28/2024	15:58:00	
			QC Surrogate				
			QC Surrogate				
			QC Surrogate				
			QC Blank				
			QC	_			
			QC				

Field_Collection_End_Time	Field_Collection_Comment	Field_Collection_Area	Field_Collection_Area_Units	Field_Collection_Reference_Point	Field_Collection_Upper_Depth

Field_Collection_Lower_Depth	Field_Collection_Depth_Units	Well_Water_Level_Measuring_Point_or_TOC_ID	Sample_ID	Sample_Field_Replicate_ID	Sample_Replicate_Flag	Sample_Sub_ID
			2402033-01			
			2402033-01			
			2402033-02			
			2402033-02			
			2402033-03			
			2402033-03			
			2402033-04			
			2402033-04			
			2402033-05			
			2402033-05			
			2402033-06			
			2402033-06			
			2402033-07			
			2402033-07			
			2402033-08			
			2402033-08			
			2402033-09			
			2402033-09			
			2402033-10			
			2402033-10			
			B24C004-BSD1			
			B24C004-BS1			
			B24C004-BLK1			
			B24C004-BLK1			
			B24C004-BSD1			
			B24C004-BS1			

Sample_Composite_Flag	Storm_Event_Qualifier	Sample_Matrix	Sample_Source	Sample_Use	Sample_Collection_Method	Sample_Preparation_Method	Sample_Method_Other
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water	17 - Surface Runoff/Pond (Gene			SW3535A	
		Water				SW3535A	
		Water				SW3535A	
		Water				SW3535A	
		Water				SW3535A	
		Water				SW3535A	
		Water				SW3535A	

Sample_Taxon_Name	Sample_Taxon_TSN	Sample_Tissue_Type	Sample_Percent_Sorted	Result_Parameter_Name	Result_Parameter_CAS_Number	Lab_Analysis_Date
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				D5-6PPD-quinone	TBD	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024
				6PPD-quinone	2754428-18-5	3/8/2024

Lab_Analysis_Date_Accuracy	Lab_Analysis_Time	Result_Value	Result_Value_Units	Result_Reporting_Limit	Result_Reporting_Limit_Type	Result_Detection_Limit	Result_Detection_Limit_Type
D	15:14:00	804	ng/L	1.01	LLOQ	0.47	MDL
D	15:14:00	64	%				
D	15:24:00	965	ng/L	0.977	LLOQ	0.455	MDL
D	15:24:00	75	%				
D	15:35:00	860	ng/L	0.965	LLOQ	0.45	MDL
D	15:35:00	72	%				
D	15:46:00	676	ng/L	0.962	LLOQ	0.448	MDL
D	15:46:00	63	%				
D	15:57:00	367	ng/L	0.965	LLOQ	0.45	MDL
D	15:57:00	86	%				
D	16:19:00	650	ng/L	1.03	LLOQ	0.479	MDL
D	16:19:00	79	%				
D	16:30:00	786	ng/L	1.01	LLOQ	0.472	MDL
D	16:30:00	73	%				
D	16:40:00	1180	ng/L	0.965	LLOQ	0.45	MDL
D	16:40:00	83	%				
D	16:51:00	899	ng/L	0.977	LLOQ	0.455	MDL
D	16:51:00	79	%				
D	17:02:00	1290	ng/L	0.962	LLOQ	0.448	MDL
D	17:02:00	80	%				
D	15:03:00	73	%				
D	14:52:00	54	%				
D	14:41:00	66	%				
D	14:41:00	1	ng/L	1	LLOQ	0.466	MDL
D	15:03:00	108	%	1	LLOQ	0.466	MDL
D	14:52:00	108	%	1	LLOQ	0.466	MDL

Result_Data_Qualifier	Fraction_Analyzed	Field_Filtered_Flag	Result_Basis	Digestion_Method	Water_Level_Accuracy	Result_Method	Result_Comment	Result_Additional_Comment
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		
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	Total					SOP730136		
U	Total					SOP730136		
	Total					SOP730136		
	Total					SOP730136		

Result_Lab_Replicate_ID	Result_Lab_Name	Result_Validation_Level	Result_Taxon_Name	Result_Taxon_TSN	Result_Taxon_Unidentified_Species
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
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	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				
	Ecology Manchester Environmental Laboratory				

Result_Taxon_Life_Stage	QC_Blank_Type	QC_Blank_Censor_Factor	Lab_Batch_ID	Lab_GC_Column_ID	MEL_Client	MEL_Client_Email	MEL_Project_Name
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
		Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	QC	Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	QC	Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	Method Blank		B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	Method Blank		B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	QC	Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol
	QC	Uncensored	B24C004		Baker, Morgan	mbak461@ecy.wa.gov	6PPD-q Characterization and Protocol

MEL_Analysis_Code	MEL_Date_Extracted	MEL_Dilution	MEL_Result_Type	MEL_QC_Type	MEL_Sample_Source_ID	MEL_Spiked_Amount	MEL_Spike_Result_Amount
6PPDQ	3/4/2024	. 1	R				
6PPDQ	3/4/2024	. 1	S			80.6	51.6
6PPDQ	3/4/2024	. 1	R				
6PPDQ	3/4/2024	. 1	S			78.1	58.8
6PPDQ	3/4/2024	. 1	R				
6PPDQ	3/4/2024	. 1	S			77.2	55.4
6PPDQ	3/4/2024	. 1	R				
6PPDQ	3/4/2024	1	S			76.9	48.5
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			77.2	66.5
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			82.3	65
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			81	59.5
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			77.2	64.1
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			78.1	61.9
6PPDQ	3/4/2024	1	R				
6PPDQ	3/4/2024	1	S			76.9	61.6
6PPDQ	3/4/2024	. 1	S	BSD1		80	58.1
6PPDQ	3/4/2024	1	S	BS1		80	42.8
6PPDQ	3/4/2024	. 1	S	BLK1		80	52.6
6PPDQ	3/4/2024	1	R	BLK1			
6PPDQ	3/4/2024	1	R	BSD1		80	86.3
6PPDQ	3/4/2024	. 1	R	BS1		80	86.8

MEL_Spike_Units_Of_Measure	MEL_RPD	MEL_QC_RPD_Limit	MEL_QC_Lower_Limit	MEL_QC_Upper_Limit	MEL_Work_ID	MEL_QC_Name
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
					2402033	
ng/L			20	200	2402033	
ng/L			20	200	2402033	
ng/L			20	200	2402033	
ng/L			20	200	2402033	
					2402033	Method Blank
ng/L	0.6	40	50	150	2402033	LCS Dup
ng/L			50	150	2402033	LCS



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: April 12, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, March 25, 2024

Stormwater samples were collected by Herrera Environmental Consultants on March 25, 2024. The samples were delivered to the King County Environmental Laboratory on March 28, 2024. The samples were assigned lab ID numbers L82959-1 to -4. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

Meghan Clkey

(206)477-7154 or meghan.elkey@kingcounty.gov

King County Environmental Lab Analytical Report

Project: 421520-200
Locator: STTC-TB1-IN
Descrip: STTC-TB1 upstream
Sample: L82959-1

Matrix: LG STORM WTR ColDate: 3/25/24 18:32

WET Weight Basis

Project: 421520-200 Locator: STTC-TB1-OUT Descrip: STTC-TB1 downstrea

 Sample:
 L82959-2

 Matrix:
 LG STORM WTR

 ColDate:
 3/25/24 18:32

WET Weight Basis

Project: 421520-200 Locator: STTC-TB1-IN

Descrip: STTC-TB1 upstream Sample: L82959-3

Matrix: LG STORM WTR ColDate: 3/25/24 19:36

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.545		0.002	0.01	ug/L	0.0898		0.002	0.01	ug/L	1.21		0.002	0.01	ug/L

King County Environmental Lab Analytical Report

Project: 421520-200
Locator: STTC-TB1-OUT
Descrip: STTC-TB1 downstrea
Sample: L82959-4

Matrix: LG STORM WTR ColDate: 3/25/24 19:36

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.255		0.002	0.01	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
STTC-TB1-IN	421520-200	L82959-1	3/25/2024 18:32	0.545
STTC-TB1-OUT	421520-200	L82959-2	3/25/2024 18:32	0.0898
STTC-TB1-IN	421520-200	L82959-3	3/25/2024 19:36	1.21
STTC-TB1-OUT	421520-200	L82959-4	3/25/2024 19:36	0.255
* Not converted to dry weight basis	3			

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG193317 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82959-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 18:32	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-6	
L82959-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 18:32	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82959-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 19:36	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82959-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 19:36	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 7:24	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 7:24	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
WG193317-1	МВ	Neseul en	AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
WG193317-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	WG193317-1
WG193317-3	MS		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	L82960-2
WG193317-4	MSD		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	WG193317-3 L82960-2
WG193317-5	LD		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	L82959-2
WG193317-6	ССС		AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	MED
								U	

King County Environmental Laboratory QC Report

Workgroup: WG193317 6PPDQ by LCMS

MB:WG193317-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

 Parameter
 MDL
 RDL
 Units
 MB Value
 Qual

 6ppd-quinone
 0.002
 0.01
 ug/L
 <MDL</td>

SB:WG193317-2 MB:WG193317-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.221 110 50--150

MSD:WG193317-4 MS:WG193317-3 L82960-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.104 0.2 0.319 108 50--150 0.2 0.322 109 1 0--45 6ppd-quinone

LD:WG193317-5 L82959-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

 Parameter
 MDL
 RDL
 Units SAMP Value
 LD Value
 RPD
 Qual Lab Limit

 6ppd-quinone
 0.002
 0.01
 ug/L
 0.0898
 0.0845
 6
 0--40

CCC:WG193317-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 0.999
 100
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82959-1	71
L82959-2	71
L82959-3	63
L82959-4	65
L82960-1	65
L82960-2	77
L82960-3	71
L82960-4	80
L82960-9	76
WG193317-1	63
WG193317-2	74
WG193317-3	77
WG193317-4	77
WG193317-5	78
WG193317-6	100

Login: P82959 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC: _____ LPM: Meghan Elkey

CHAIN OF CUSTODY

	CHAIN O	F COSTODI	
in a managara Managara Managara	Relinguished by	Date SN 3/28/24 01546	Time (540)
	Received by	Date 328-24	Time SY
	Sample Numbers		[AII]
Sample Number	P82959-1	P82959-2	
QC Link		A STATE AND A STAT	
Locator	STTC-TB1-IN	STTC-TB1-OUT	
Short Loc Desc			
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	First grab	First grab	
Start Date/Time	34/25/240 18:32	39/25/2401832	
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P82959 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC:	
LPM: Meghan Fikey	

CHAIN OF CUSTODY

	CHAIN	ו עטו נטטו				
	Relinquished by	Date	Time			
	Received by	Date	Time			
	Sample Numbers		[AII]			
Sample Number	P82959-3	P82959-4				
QC Link	A CONTROL OF THE PROPERTY OF T					
Locator	STTC-TB1-IN	STTC-TB1-OUT				
Short Loc Desc						
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station				
Site	I-5TAPE	I-5TAPE				
Comments	Second grab	Second grab				
Start Date/Time	341242401936	34/25/24 g 1936				
End Date/Time						
Time Span						
Sample Depth						
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)				

LIQUID SAMPLE RECEIPT RECORD

		2 (1 (2)		(10) (5)				<u> </u>					
	n Number(s): \$2,750			Project No.: 42 15	20 ZXV	<u>/</u>	Sub-Contracting: Y ((N)	List Product(s):				
Colle	ct Date(s): 3_25	-24			हेन्द्रप		Changes: Y (N)		List Parameter(s):		` '		
			AMPLE RECEIPT				FIE	ELD PRESERVATION CHE	CKLIST (Circle and/or check	applicable sele	ctions)		
	CONDITION	Acceptable?	Comment iD	CONDITION	Acceptable?	Comment ID	PRODUC	CT / Preservation	SM Action	Acceptable?	Corrective Action		
Labe	ls / Fieldsheets	Y N		Volumes	YIN		BNA / pH 6 - 9 w/ H ₂ SO ₄ or	NaOH	√field sheet for F. pH	Y / N	☐ Notify ORG		
	ainer	/ y/ N		Holding Times	/\din		CN / pH > 12 w/ NaOH with	sin 15 mln	☐ Check pH	Y / N	☐ Deliver to CONV		
Tem	perature (w/ ice)	Y/I N/NA		Delivery Location	KIN		NO23 pH < 2 w/ H ₂ \$O ₄		☐ Check pH	Y / N/NA	☐ Preserve by SM		
	ВОТ	TLE COUNT	(#) AND DESCRIE	TION and SAMPLE NU	MBERS		CR(VI) / TOTCR(VI) / pH 9,	.3 - 9.7 w/ NaOH w/in 15 mln	√ field sheet for pH	Y / N	☐ Deliver to CONV		
#		Be	ottle Description:	Sample Numbers			ICP / HG-CVAA-M / pH < 2	2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM		
	40 mL clear vial (VOA);		,				O&G / HEM / PHENOL / ph	H < 2 w/ H ₂ SO₄	Check documentation	Y / N	☐ Preserve by SM		
	60 mL clear glass (PHYTO):						PHYTOPLANKTON / Lugor	vis	Visually inspect	Y / N	☐ Deliver to MICRO		
	60 mL CWM HDPE:						TKN/COD pH<2w/H ₂ S0	O ₄ within 15 min	☐ Check pH	Y / N	☐ Preserve By SM		
	125 mL AWM HDPE:						TOC / pH < 2 w/ HCI (NPDE	ES only)	☐ Check pH	Y / N	☐ Preserve By SM		
	125 mL CNM HOPE:						TOTSULFIDE / pH > 9 w/ N	NaOH, ZnAc	Check documentation	Y/N	☐ Deliver to CONV		
	125 mL CWM HDPE:						WDO / FIXED	•	Visually inspect	Y / N	☐ Deliver to CONV		
	125 mL GANM;						Other.				DUNNET TO COLLET		
	125 ml. GANM w/HCI						ROUTI	INE SM PRESERVATION (BHEGKUST (Circle and/or ch	eck applicable	selectionsi		
	250 mL AWM HDPE:							CT / Preservation	SM Action	Acceptable?	Corrective Action		
	250 mL CWM HDPE:						Chiorinated Pesticides / p	oH 5 - 9 w/ H₂SO₂ or NaOH	√ field sheet for F. pH	Y / N	Adjust pH		
_	250 mL CWM HDPE (MICRO)):					HG-CVAA-L-Teflon (T / D		☐ Preserve & deliver	NA	NA		
4	250 mL GAWM: \ \ \—U						ICPMS / HG-CVAA-M (T /	D)/pH<2w/ULTRA HNO ₃	☐ Preserve & deliver	· NA	NA		
	250 mL GAWM w/ H2SQ4:						TOC / pH < 2 w/ HCl		Preserve & deliver	NA	NA		
	300 mL WDQ (8 hour HT):						Other:		- Preserve & deliver				
	500 mL AWM HDPE:						Other;				······································		
	500 mL CWM HDPE:			,				INTEREERENCE TES	l (Circle and/or check applica	ble selections			
	500 mL CWM PP (MICRO);						Product / Interference		Positive Test?	Treated :	Corrective Action		
	500 mL HDPE (METALS):						BNA / Chlorine (Check documentation) Y / N / not tested Y /				☐ Deliver to ORG		
	500 mL HDPE, double-bagge	d (METALS):		,			CN / Chlorine (Check docur		Y / N / not tested	Y/N	Deliver to CONV		
	500 mL Teflon (Hg):						CN / Sulfide (Check field st	heet for DF)	Y / N / not tested	Y / N	☐ Deliver to CONV		
	500 mi. Teflon, double-bagge	ed (METALS):					VOA / Chlorine (Check doc						
	500 mL GANM / GAWM:						VOA / Chlorine (Check documentaion) Y / N / not tested Y / N Deliver to ORG Other:						
	500 mL Polystyrene Filtration	Units (METALS):				HEADSPACE CHECK						
	1L AWM HDPE:						PRODU	JCT (SM Action)	Check For	Acceptable?	Corrective Action		
	1L CWM HDPE:						MICRO (Visually inspect)		Headspace (@ 1")	Y / N	□ Notify MICRO		
	1L CWM PP (MICRO):						TOTSULFIDE (Visually ins	spect)	Headspace (< 1")	Y / N	☐ Notify MICRO		
	1L GANM:						VOA (Visually inspect)		Zero headspace	Y / N	☐ Notify ORG		
	1L GCWM;						WOO (Visually inspect)		Zero headspace	Y / N	☐ Notify CRG		
	1L GAWM w/ H₂SO₄:		 				Other:		Loro nonaopaoo	1 7 13	LI NORTY CONV		
	2L CWM HDPE:				-				(LIST (Circle and/or check ap	olical le selec	iens)		
	Other:						Produ	ict (SM Action)	Field Filtered	Field Blank	Corrective Action		
1		(OMMENTS/NO	TIFICATIONS			ORTHOP (Check Field She	eet)	Y (within 15 min y / n) / N	Y / N	☐ Deliver to CONV		
WALL COLUMN		3,000					NO2 / NO3 / NO23 / NH3 /		Y (within 1 day y / n) / N	Y / N / NA	☐ Deliver to CONV		
		·,··					Dissolved Metals (Check i	Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to METALS		
							DOC (Deliver / Notify Unit)		Y (within 15 min or 1 day) / N	Y / N/NA	☐ Deliver to METALS		
							DCOD / CR(VI) (Deliver / N	latify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV		
L							Other:	.,					
							Other:						

CC: I	O /	AQUATOX.		CONV.		METALS.		MICRO.	. П	ORG.	
-------	-----	----------	--	-------	--	---------	--	--------	-----	------	--

NOTES

Deliver dissolved Hg-CVAF samples to METALS for filtration.
 Deliver double-bagged metals samples to METALS for preservation.

3. Do not test of the presented BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

MAR 28 '24 15:49



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: April 12, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, March 27, 2024

Stormwater samples were collected by Herrera Environmental Consultants on March 27, 2024. The samples were delivered to the King County Environmental Laboratory on March 28, 2024. The samples were assigned lab ID numbers L82960-1 to -4 and -9. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Clkry

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

King County Environmental Lab Analytical Report

Project: 421520-200 Locator: STTC-TB1-IN Descrip: STTC-TB1 upstream Sample: L82960-1

Matrix: LG STORM WTR ColDate: 3/27/24 7:24

Project: 421520-200 STTC-TB1-OUT Locator: Descrip: STTC-TB1 downstrea

Sample: L82960-2 Matrix: LG STORM WTR ColDate: 3/27/2 3/27/24 7:24

Locator: STTC-TB1-IN Descrip: STTC-TB1 upstream Sample: L82960-3 Matrix: LG STORM WTR ColDate: 3/27/24 8:42

421520-200

Project:

	WEI Weight Bas	SIS				WEIWeight Ba	ISIS				WEI Weight Ba	ISIS			
Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.703		0.002	0.01	ug/L	0.104		0.002	0.01	ug/L	0.711		0.002	0.01	ug/L

King County Environmental Lab Analytical Report

421520-200 Project: STTC-TB1-OUT Locator: STTC-TB1 downstrea Descrip: Sample: L82960-4

Matrix: LG STORM WTR 3/27/24 8:42 ColDate:

WET Weight Basis

Project: 421520-200 FIELDDUP Locator: Descrip: FIELD DUPLICATE

Sample: L82960-9 Matrix: LG STORM WTR ColDate: 3/27/24 8:42

is

WET	Weight	Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.19		0.002	0.01	ug/L	0.68		0.002	0.01	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

LOCATOR	PROJECT	SAMPLE	COLLECTED	ug/L
STTC-TB1-IN	421520-200	L82960-1	3/27/2024 7:24	0.703
STTC-TB1-OUT	421520-200	L82960-2	3/27/2024 7:24	0.104
STTC-TB1-IN	421520-200	L82960-3	3/27/2024 8:42	0.711
STTC-TB1-OUT	421520-200	L82960-4	3/27/2024 8:42	0.19
FIELDDUP	421520-200	L82960-9	3/27/2024 8:42	0.68
* Not converted to dry weight bas	sis			

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG193317 6PPDQ by LCMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L82959-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 18:32	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82959-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 18:32	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82959-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 19:36	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82959-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/25/2024 19:36	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-1	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 7:24	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 7:24	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
L82960-9	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	3/27/2024 8:42	3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
WG193317-1	МВ	Nesearch	AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	
WG193317-2	SB		AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	WG193317-1
WG193317-3	MS		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	L82960-2
WG193317-4	MSD		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	WG193317-1,-2,-3,-4,-5,-	WG193317-3 L82960-2
WG193317-5	LD		AQ6PPDQ-LCMS	STORM WTR		3/29/2024 7:50	3/29/2024 11:20	6 WG193317-1,-2,-3,-4,-5,-	L82959-2
WG193317-6	ссс		AQ6PPDQ-LCMS	OTHR WTR		3/29/2024 7:50	3/29/2024 11:20	6 WG193317-1,-2,-3,-4,-5,-	MED
								6	

King County Environmental Laboratory QC Report

Workgroup: WG193317 6PPDQ by LCMS

MB:WG193317-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

ParameterMDLRDLUnitsMB ValueQual6ppd-quinone0.0020.01ug/L<MDL</td>

SB:WG193317-2 MB:WG193317-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL RDL Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.221 110 50--150

MSD:WG193317-4 MS:WG193317-3 L82960-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit MDL RDL Lab Limit True Value MSD Value % Rec. Qual RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.104 0.2 0.319 108 50--150 0.2 0.322 109 1 0--45 6ppd-quinone

LD:WG193317-5 L82959-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

(Lab Duplicate)

ParameterMDLRDLUnits SAMP ValueLD ValueRPDQual Lab Limit6ppd-quinone0.0020.01ug/L0.08980.084560--40

CCC:WG193317-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Continuing Calibration Check)

 Parameter
 MDL
 RDL
 Units
 True Value
 CCC Value
 % Rec.
 Qual Lab Limit

 6ppd-quinone
 0.01
 0.05
 ug/L
 1
 0.999
 100
 80--120

Surrogate:	d5-6PPDQ
(Lab Limits)	20200
L82959-1	71
L82959-2	71
L82959-3	63
L82959-4	65
L82960-1	65
L82960-2	77
L82960-3	71
L82960-4	80
L82960-9	76
WG193317-1	63
WG193317-2	74
WG193317-3	77
WG193317-4	77
WG193317-5	78
WG193317-6	100

Login: P82960 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

CHAIN OF CUSTODY

	CHAIN O	F (0310D1	
	Relinquished by	Date 3/28/24	Time 1541
	Received BY	Date 3-28-24	Time 1541
	Sample Numbers		[All]
Sample Number	P82960-1	P82960-2	
QC Link	And the Company of th	(2000) and the control of the contro	
Locator	STTC-TB1-IN	STTC-TB1-OUT	
Short Loc Desc	The Control of the Co	The state of the s	Company of the control of the contro
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	
Site	I-5TAPE	I-5TAPE	The second control of
Comments	First grab	First grab	
Start Date/Time	3/27/24 @ 0724	3/27/24@0724	
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P82960 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC:	
J PM: Meghan	Elkev

CHAIN OF CUSTODY

	CHAIN OF	. 6031001	
	Relinquished by	Date	Time
	Received by	Date	Time
	Sample Numbers		[AII]
Sample Number	P82960-3	P82960-4	
QC Link		2000 P. (1900 P. (190	
Locator	STTC-TB1-IN	STTC-TB1-OUT	
Short Loc Desc			all and the second seco
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	
Site	I-5TAPE	I-5TAPE	
Comments	Second grab	Second grab	
Start Date/Time	3/27/24 @0842	3/27/24@0842	
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod	4 LG 6PPDQ (43)	4 LG 6PPDQ (43)	

Login: P82960 Project: 421520-200

WDOE BMP - Herrera 6PPDQ Add-On STTC

FSU TC:		
I PM: Men	han Elkev	

CHAIN OF CUSTOD	ÌΥ	OD	TC	IS	CL	F	O	N	4	H.	C	
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	OIJANY OI	0001001	
talie i stalie i Elizabeth	Relinquished by	Date	Time
	Received by	Date	Time
			[AII]
	Sample Numbers		ĮAilj
Sample Number	P82960-9		
QC Link	The state of the s		
Locator	FIELDDUP		
Short Loc Desc			
Locator Desc	FIELD DUPLICATE		The second process of
Site	FLDQC		
Comments			
Start Date/Time	3/27/24@0842		
End Date/Time			
Time Span			
Sample Depth			
Dept, Matrix, Prod (Cont ID)	4 LG 6PPDQ (4 3)		

LIQUID SAMPLE RECEIPT RECORD

Login	Number(s): 8296	<u> </u>	11-4.9	7	Project No.:	W215	70-20C	7	Sub-Contracting: Y (N	List Product(s):		
Collec	t Date(s): 3-2	フージ	24	· ,I	Receive Date:		8-29		Changes: Y/N	List Parameter(s):		
	The second secon		S	AMPLE RECEIPT	CONDITION	s				ECKLIST (Gircle and/or check		
	CONDITION	Acc	eptable?	Comment ID	COND		Acceptable?	Comment ID	PRODUCT / Preservation	SM Action		
Labels	s / Fieldsheets		Y / N		Volumes	1.1.24	YIN	<u> </u>	BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	Jim Action √ field sheet for F. pH	Acceptable?	Corrective Action
Conta	iner		Y/ / N	,	Holding Time	s	YIN		CN / pH > 12 w/ NaOH within 15 min		Y / N	☐ Notify ORG
Temp	erature (w/ ice)		/ N / NA		Delivery Loca		YIN		NO23 pH < 2 w/ H ₂ SO ₄	Check pH	Y/N	Deliver to CONV
	BC	10.0	E COUNT 6	#) And Describ					CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	☐ Check pH √ field sheet for pH	Y / N / NA	Preserve by SM
#				ttle Description:					ICP / HG-CVAA-M / pH < 2 w/ HNO ₃		Y / N	Deliver to CONV
	40 mL clear vial (VOA);								08.G / HEM / PHENOL / pH < 2 w/ H ₂ SQ ₄	Check pH Check documentation	Y / N	Preserve By SM
e	60 mL clear glass (PHYTO)							·	PHYTOPLANKTON / Lugois	Visually inspect	Y / N	Preserve by SM
6	60 mL CWM HDPE:			······································					TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min		Y / N	Deliver to MICRO
1	125 mL AWM HDPE:								TOC / pH < 2 w/ HCI (NPDES only)	☐ Check pH	Y / N	Preserve By SM
1	125 mL CNM HDPE:								TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check pH Check documentation	Y/N	Preserve By SM
1	125 mL CWM HDPE:								WDO / FIXED	Visually Inspect	Y / N	☐ Deliver to CONV
	125 mL GANM;								Other:	VISUARY INSPECT	Y/N	☐ Deliver to CONV
1	125 mL GANM w/HCI									ValVEGUSISE/GPARA SATISFA		
2	250 mL AWM HDPE:								ROUTINE SM PRESERVATION PRODUCT / Preservation			
2	250 mL CWM HDPE:								Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	SM Action √fleid sheet for F. pH	Acceptable?	Corrective Action
	250 mL CWM HDPE (MICR	Q):							HG-CVAA-L-Teflon (T / D) / pH < 2 w/ ULTRA HCI		Y/N	Adjust pH
5 2	250 mL GAWM:]C	9							ICPM\$/HG-CVAA-M (T/D)/pH < 2 w/ULTRA HNO3	Preserve & deliver	NA .	NA .
1	250 mL GAWM w/ H2\$O4:	-)							TOC / pH < 2 w/ HCl	☐ Preserve & deliver	NA NA	NA NA
3	300 mL WDO (8 hour HT):								Other:	Preserve & deliver	NA	NA
	500 mL AWM HDPE:						····		Other:			
5	500 mL CWM HDPE:			· · · · · · · · · · · · · · · · · · ·		***************************************				ST (Circle and/or check application)		
5	500 mL CWM PP (MICRO):								Product / Interference (SM Action)			
5	500 mL HDPE (METALS):			***************************************					BNA / Chlorine (Check documentation)	Positive Test?	Treated	Corrective Action
	500 mL HDPE, double-bagg	ed (M	ETALS):						CN / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL Teflon (Hg):								CN / Sulfide (Check field sheet for DF)	Y / N / not tested	Y / N	☐ Deliver to CONV
5	500 mL Teflon, double-bagg	ed (M	IETALS):						VOA / Chlorine (Check documentaion)	Y / N / not tested	Y / N	Deliver to CONV
	500 mL GANM / GAWM:								Other:	Y / N / not tested	Y / N	Deliver to ORG
5	500 mL Polystyrene Filtratio	n Unit	ts (METALS):	:			· · · · · · · · · · · · · · · · · · ·		Miletaria (n. 1885)	HEADSPACE CHECK		
	1L AWM HDPE:								PRODUCT (SM Action)		Apportables	Competition
1	1L CWM HDPE:	*****							MICRO (Visually inspect)	Check For	Acceptable?	
	IL CWM PP (MICRO):				· · · · · · · · · · · · · · · · · · ·				TOTSULFIDE (Visually inspect)	Headspace (@ 1")	Y/N	Notify MICRO
1	IL GANM:								VOA (Visually inspect)	Headspace (< 1")	Y/N	□ Notify CONV
1	IL GCWM:								WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG
1	IL GAWM w/ H₂SO₄;								Other:	Zero headspace	Y/N	□ Notify CONV
2	2L CWM HDPE:									KLIST (Circle andlor check a		
	Other:								. Product (SM Action)	Field Filtered	Field Blank	Corrective Action
			C	OMMENTS / NOT	TIFICATIONS	100	100000		ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N	
									NO2 / NO3 / NO23 / NH3 / SI (Documentation)	Y (within 1 day y / n) / N	Y / N / NA	Deliver to CONV Deliver to CONV
									Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	☐ Deliver to CONV
ļ									DGC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N/NA	☐ Deliver to CONV
									DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N/NA	Deliver to CONV
									Other:		•	
	7			· · · · · · · · · · · · · · · · · · ·			- "	*****	Other:			

CC: \Box AQUATOX, \Box CONV, \Box METALS, \Box MICRO, \Box ORG, \Box

NOTES

1. Deliver dissolved Hg-CVAF samples to METALS for filtration.

Deliver double-bagged metalessamples to METALS for preservation.
 Do not test put for preserved BNA and TOTSULFIDE samples.

- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

Date / Time Completed:

MAR 28 '24 15:52



Department of Natural Resources and Parks Water and Land Resources Division

Environmental Laboratory

LAB-NR0100 322 West Ewing Street Seattle, WA 98119-1507 206-477-7200 Fax 206-684-2395 TTY Relay: 711

Date: May 9, 2024

To: Madison Bristol, Washington State Department of Ecology

Clark, Herrera Environmental Consultants

From: Meghan Elkey, King County Environmental Laboratory

Subject: BMP Stormwater Characterization – Herrera Add-on 6PPDQ Samples Data

Summary, April 25, 2024

Stormwater samples were collected by Herrera Environmental Consultants on April 25, 2024. The samples were delivered to the King County Environmental Laboratory on April 30, 2024. The samples were assigned lab ID numbers L82961-1 to -4. The following QC summary is included for your information.

All samples received were analyzed as requested. The samples were analyzed in the Aquatic Toxicology unit of the laboratory. The data have passed all QA/QC checks for accuracy and completeness and may be used without qualification.

Please contact me if you have any questions about this report or need additional information.

Sincerely,

Meghan Elkey

Meghan Elkey

Laboratory Project Manager/Water Quality Planner III

King County Environmental Lab

(206)477-7154 or meghan.elkey@kingcounty.gov

King County Environmental Lab Analytical Report

Project: 421520-200
Locator: STTC-TB1-IN
Descrip: STTC-TB1 upstream
Sample: L82961-1
Matrix: LG STORM WTR

ColDate: 4/25/24 16:45

WET Weight Basis

Project: 421520-200 Locator: STTC-TB1-OUT Descrip: STTC-TB1 downstrea

| Sample: L82961-2 | Matrix: LG STORM WTR | ColDate: 4/25/24 16:45

WET Weight Basis

Project: 421520-200
Locator: STTC-TB1-IN
Descrip: STTC-TB1 upstream
Sample: L82961-3

 Sample:
 L82961-3

 Matrix:
 LG STORM WTR

 ColDate:
 4/25/24 17:52

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.807		0.002	0.01	ug/L	0.118		0.002	0.01	ug/L	0.723		0.002	0.01	ug/L

King County Environmental Lab Analytical Report

Project: 421520-200
Locator: STTC-TB1-OUT
Descrip: STTC-TB1 downstrea
Sample: L82961-4

Matrix: LG STORM WTR ColDate: 4/25/24 17:52

WET Weight Basis

Parameters AQ KCEL SOP 4077: 6PPDQ by LCMS	Value	Qual	MDL	RDL	Units
6ppd-quinone	0.325		0.002	0.01	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK Matrix Class: LIQUID

User select: WET Weight Basis

6ppd-quinone

PROJECT		SAMPLE	COLLECTED	ug/L
421520-200		L82961-1	4/25/2024 16:45	0.807
421520-200		L82961-2	4/25/2024 16:45	0.118
421520-200		L82961-3	4/25/2024 17:52	0.723
421520-200		L82961-4	4/25/2024 17:52	0.325
	421520-200 421520-200 421520-200	421520-200 421520-200 421520-200 421520-200	421520-200 L82961-1 421520-200 L82961-2 421520-200 L82961-3 421520-200 L82961-4	421520-200 L82961-1 4/25/2024 16:45 421520-200 L82961-2 4/25/2024 16:45 421520-200 L82961-3 4/25/2024 17:52 421520-200 L82961-4 4/25/2024 17:52

If a parameter/analyte appears twice in the column header, it implies that they were analyzed by two different method codes

King County Environmental Laboratory Batch Report

WG193736 6PPDQ by LCMS

Sample L82961-1	Project 421520-200	Project Description WDOE Stormwater BMP Research	List Type AQ6PPDQ-LCMS	Matrix STORM WTR	Collect Date 4/25/2024 16:45	Prep Date 4/30/2024 10:00	Anal Date 5/1/2024 8:00	QC Association WG193736-1,-2,-3,-4,-5,-6,-7	Comments
L82961-2	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	4/25/2024 16:45	4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	
L82961-3	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	4/25/2024 17:52	4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	
L82961-4	421520-200	WDOE Stormwater BMP Research	AQ6PPDQ-LCMS	STORM WTR	4/25/2024 17:52	4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,- 6,-7	
WG193736-1	МВ		AQ6PPDQ-LCMS	OTHR WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,- 6,-7	
WG193736-2	SB		AQ6PPDQ-LCMS	OTHR WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	WG193736-1
WG193736-3	MS		AQ6PPDQ-LCMS	STORM WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	L82961-4
WG193736-4	MSD		AQ6PPDQ-LCMS	STORM WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	WG193736-3 L82961-4
WG193736-5	LD		AQ6PPDQ-LCMS	STORM WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	L82961-2
WG193736-6	CCC		AQ6PPDQ-LCMS	OTHR WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	MED
WG193736-7	MDLCK		AQ6PPDQ-LCMS	OTHR WTR		4/30/2024 10:00	5/1/2024 8:00	WG193736-1,-2,-3,-4,-5,-6,-7	

King County Environmental Laboratory QC Report

Workgroup: WG193736 6PPDQ by LCMS

MB:WG193736-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Method Blank)

6ppd-quinone

Parameter MDL RDL Units MB Value Qual 0.002 0.01 ug/L <MDL 6ppd-quinone

SB:WG193736-2 MB:WG193736-1 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD

(Spike Blank, Method Blank)

Parameter MDL **RDL** Units MB Value True Value SB Value % Rec. Qual **Lab Limit** 6ppd-quinone 0.002 0.01 ug/L <MDL 0.2 0.212 106 50--150

MSD:WG193736-4 MS:WG193736-3 L82961-4 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD

1

(Matrix Spike Duplicate, Matrix Spike)

Units SAMP Value True Value **MS Value** Lab Limit True Value MSD Value % Rec. Qual **Lab Limit** MDL RDL RPD Parameter % Rec. Qual Qual 0.002 0.01 ug/L 0.325 0.2 0.536 105 50--150 0.2 0.532 103 1 0--45 6ppd-quinone

LD:WG193736-5 L82961-2 Matrix: STORM WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project:421520-200 Pkey:STD (Lab Duplicate)

Parameter MDL RDL **Units SAMP Value LD Value** RPD **Qual Lab Limit** 3 6ppd-quinone 0.002 0.01 ug/L 0.118 0.121 0--40

CCC:WG193736-6 Matrix: OTHR WTR Listtype:AQ6PPDQ-LCMS Method:KCEL SOP 4077: 6PPDQ by LCMS Project: Pkey:STD (Continuing Calibration Check)

Parameter MDL RDL Units True Value CCC Value % Rec. **Qual Lab Limit** 0.01 0.05 ug/L 0.987 99 80--120

d5-6PPDQ Surrogate: (Lab Limits) 20--200 L82961-1 66 74 L82961-2 L82961-3 65 L82961-4 70 72 WG193736-1 WG193736-2 73 WG193736-3 70 72 WG193736-4 WG193736-5 71 96 WG193736-6

Login: P82961 Projec

(Cont ID)

Dept, Matrix, Prod 4 LG 6PPDQ (43)

WDOF BMP - Herrera 6PPDQ Add-On STTC

FSU TC:

Project: 421520-200	APOE Biall - House	i bi i baj hadi an -	LPM: Meghan Elkey				
,======================================		F CUSTODY					
	Relinquished by	Date 4/29/24	1540				
	Received by	Date 4/30/24	Time 9:40				
	Sample Numbers		[All				
Sample Number	P82961-1	P82961-2	and the second s				
QC Link	*** The management of the second of the seco	Commence of Names Commence of Section (1997)	The second section of the second section is a second section of the second section section is a second section of the second section s				
Locator	STTC-TB1-IN	STTC-TB1-OUT	The second section of the second section is a second section of the second section of the second section is a second section of the second section of the second section is a second section of the second section of the second section is a second section of the section of the second section of the section of				
Short Loc Desc	n kommerciale de la commerciale del la commerciale del commerciale de la commerciale del la commerciale de	Autorities and autori					
Locator Desc	STTC-TB1 upstream sampling station	STTC-TB1 downstream sampling station	in the second se				
Site	I-5TAPE	I-STAPE	2. Sign of the control of the co				
Comments	First grab	First grab					
Start Date/Time	4/25/24 @ 1645	4/25/2401645					
End Date/Time							
Time Span	i gara and and any and and any all and any and any and any and any and any and any any and any any any any any and any any any any any any any any any any	and which is the second of the	The second secon				
Sample Depth			The second section of the section of the second section of the section of the second section of the secti				

4 LG 6PPDQ (43)

Login: P82961 Project: 421520-200

WDOE BMP - Harrara 8PPDQ Add-On 8TTC

FSU TC: _____

	and that shift & kinds right your still to at	LPM: Magnan Elkay	
GHAIN Relinguished by	OF CUSTODY Data 4/24/44	Time 1540	
Received by	Date	Time	
Sample Numbers			[Al
P82961-3	P82961-4	na n	
STTC-TB1-IN	STTC-TB1-OUT		

Locator
Short Loc Desc
Locator Desc

Sample Number

QC Link

Site ·

Comments

STTC-TB1 upstream sampling station

mpling

STTC-TB1 downstream sampling station

I-5TAPE Second grab I-5TAPE Second grab

Start Date/Time

4/25/24 01752

4/25/2401752

End Date/Time

Time Span

Sample Depth

Dept, Matrix, Prod (Cont ID) 4 LG 6PPDQ (43)

4 LG 6PPDQ (43)

LIQUID SAMPLE RECEIPT RECORD

Logir	n Number(s): \$2961	Project No.: 4 3	u920 -:	26C>		Sub-Contracting: Y (N)	List Product(s):		
Colle	t Date(s): \$2901 ct Date(s): 427 24 4 12524	Receive Date: V	30/s4			Changes: Y/N	List Parameter(s):		
	SAMPLER	ECEIPT CONDITIONS				FIELD PRESERVATION CH	IECKLIST (Circle and/or check	applicable sele	ctions)
	CONDITION Acceptable? Comme	ent ID CONDITION			Comment ID	PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
Labe	ls / Fieldsheets // N	Volumes		N		BNA / pH 6 - 9 w/ H ₂ SO ₄ or NaOH	√field sheet for F. pH	Y/N	☐ Notify ORG
	ainer / / N	Holding Times				CN / pH > 12 w/ NaOH within 15 min	☐ Check pH	Y/N	☐ Deliver to CONV
ı emş	perature (w/ ice)	Delivery Location		// N		NO23 pH < 2 w/ H ₂ SO ₄	Check pH	Y / N / NA	☐ Preserve by SM
	BOTTLE COUNT (#) AND D			S	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	CR(VI) / TOTCR(VI) / pH 9.3 - 9.7 w/ NaOH w/in 15 min	√ fleid sheet for pH	Y / N	☐ Deliver to CONV
#		ription: Sample Number	<u>s</u>			ICP / HG-CVAA-M / pH < 2 w/ HNO ₃	☐ Check pH	Y / N	☐ Preserve By SM
	40 ml. clear vial (VOA):					O&G / HEM / PHENOL / pH < 2 w/ H ₂ SO ₄	Check documentation	Y / N	☐ Preserve by SM
_	60 mL clear glass (PHYTO):					PHYTOPLANKTON / Lugols	Visually inspect	Y / N	Deliver to MICRO
	60 mL CWM HDPE:					TKN / COD pH < 2 w/ H ₂ SO ₄ within 15 min	Check pH	Y/N	Preserve By SM
_	125 mL AWM HDPE: 125 mL CNM HDPE:	·				TOC / pH < 2 w/ HCl (NPDES only) TOTSULFIDE / pH > 9 w/ NaOH, ZnAc	Check pH Check documentation	Y / N	☐ Preserve By SM
	125 mL CWM HDPE:			***************************************		WDO / FIXED	Visually inspect	Y/N	Deliver to CONV
	125 mL GANM:					Other:	visuany inspect	Y/N	☐ Deliver to CONV
	125 mL GANM w/HCl						N OHECKLIST (Circle and/or/ch	ack applicable	coloctions)
	250 mL AWM HDPE:					PRODUCT / Preservation	SM Action	Acceptable?	Corrective Action
	250 mL CWM HDPE:					Chlorinated Pesticides / pH 5 - 9 w/ H ₂ SO ₄ or NaOH	√fleid sheet for F. pH	Y / N	☐ Adjust pH
	250 mL CWM HDPE (MICRO):					HG-CVAA-L-Teffon (T / D) / pH < 2 w/ ULTRA HCI	☐ Preserve & deliver	NA NA	NA
d	250 mL GAWM: (ICPMS / HG-CVAA-M (T/D) / pH < 2 w/ ULTRA HNO ₃	☐ Preserve & deliver	NA	NA
	250 mL GAWM w/ H2SO4:					TOC / pH < 2 w/ HCi	Preserve & deliver	NA .	NA
	300 mL WDO (8 hour HT):					Other:	. Liesel As of Gellagi		
	500 mL AWM HDPE:					Other:			
	500 mL CWM HDPE:			***************************************		INTERFERENCE TE	ST (Circle and/or check applica	ble selections	
	500 mL CWM PP (MICRO):					Product / Interference (SM Action)	Positive Test?	Treated	Corrective Action
	500 mL HDPE (METALS):		•			BNA / Chlorine (Check documentation)	Y / N / not tested	Y / N	☐ Deliver to ORG
	500 mL HDPE, double-bagged (METALS):					CN / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to CONV
	500 mL Teflon (Hg):					CN / Suifide (Check field sheet for DF)	Y / N / not tested	Y/N	☐ Deliver to CONV
	500 mL Teflon, double-bagged (METALS):					VOA / Chlorine (Check documentation)	Y / N / not tested	Y/N	☐ Deliver to ORG
	500 mL GANM / GAWM:					Other:			
	500 mL Polystyrene Filtration Units (METALS):						HEADSPACE CHECK	10,000	
L	1L AWM HDPE:	· · · · · · · · · · · · · · · · · · ·				PRODUCT (SM Action)	Check For		Corrective Action
	1L CWM HDPE:					MICRO (Visually inspect)	Headspace (@ 1")	Y / N	☐ Notify MICRO
	1L CWM PP (MICRO):					TOTSULFIDE (Visually inspect)	Headspace (< 1")	Y / N	☐ Notify CONV
	1L GANM:					VOA (Visually inspect)	Zero headspace	Y/N	☐ Notify ORG
<u> </u>	1L GCWM:					WDO (Visually inspect)	Zero headspace	Y/N	☐ Notify CONV
<u> </u>	1L GAWM w/ H₂SO₄;			*		Other.			
<u> </u>	2L CWM HDPE: Other:					FIELD FILTRATION CHE Product (SM Action)	CKLIST (Circle and/or check ap Field Filtered		ions) Corrective Action
		TS/ NOTIFICATIONS		i i i i i i i i i i i i i i i i i i i		ORTHOP (Check Field Sheet)	Y (within 15 min y / n) / N	Field Blank	
	NAMWER	CAROLING MICHO				NO2 / NO3 / NO23 / NH3 / St (Documentation)	Y (within 1 day y / n) / N	Y / N Y / N / NA	Deliver to CONV
	· ·					Dissolved Metals (Check Field Sheet)	Y (within 15 min y / n) / N	Y / N / NA	Deliver to CONV Deliver to METALS
					•	DOC (Deliver / Notify Unit)	Y (within 15 min or 1 day) / N	Y / N / NA	☐ Deliver to CONV
						DCOD / CR(VI) (Deliver / Notify Unit)	Y (within 15 min y / n) / N	Y / N/NA	☐ Deliver to CONV
		· · · ·				Other:			
	,					Other:			

٠.		AQUATOX.	COARL		RETALC	\Box	MICDA	r~1	OBC	1
٠	1	AUUAIUX.	 CUNV.	11	MEIALD.	1. 1	MILKU.		UKG.	

NOTES

- 1. Deliver dissolved Hg-CVAF samples to METALS for filtration.
- 2. Deliver double-bagged metals samples to METALS for preservation.
- 3. Do not test pH for preserved BNA and TQTSULFIDE samples.
- 4. Deliver pH, WDO, and all MICRO samples ASAP to appropriate section for immediate processing.
- 5. Enter "Time Span" for composite samples during sample login.
- 6. Split algae sample into 60 mL clear glass if PHYTOQUAL is requested.

SM Signature:

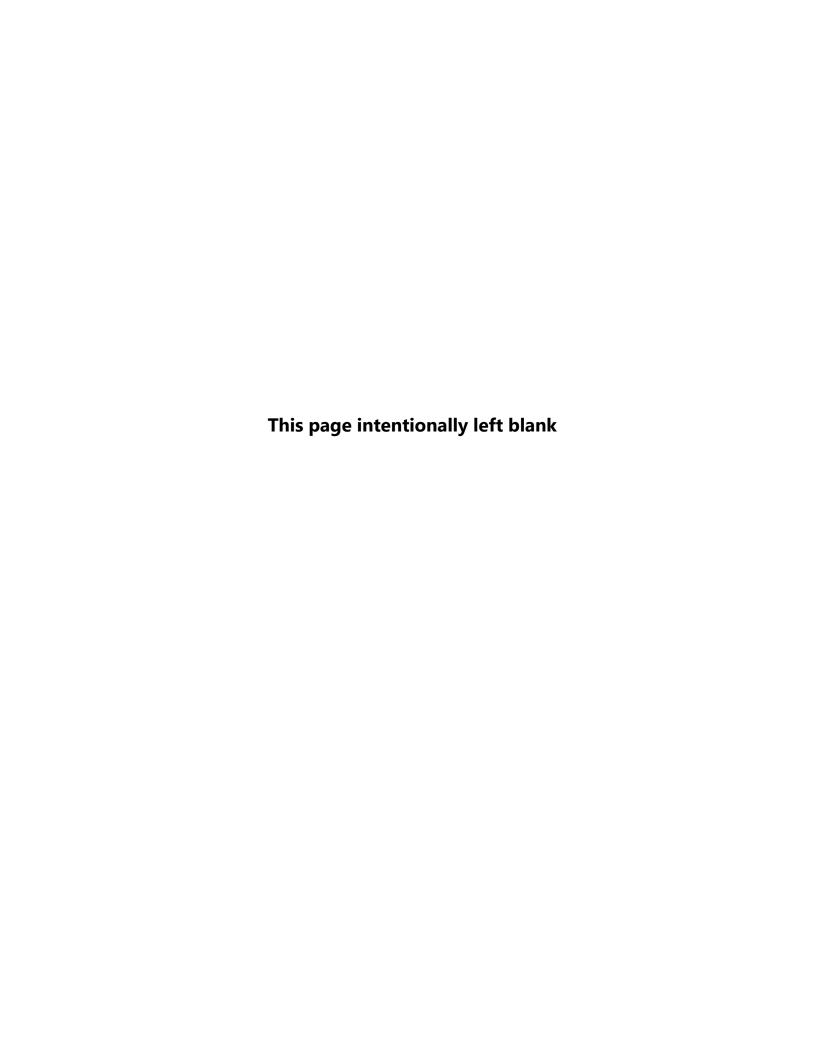
Date / Time Completed:

APR 30 '24 09:46

Appendix C

Laboratory Analytical SOPs







Standard Operating Procedure MEL730136, Version 1.2

Extraction and Analysis of 6PPD- Quinone

Approved or Recertified 06/03/2023

Publication Information

The Washington State Department of Ecology develops Standard Operating Procedures (SOPs) to document agency practices related to sampling, field and laboratory analysis, and other aspects of the agency's technical operations.

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Environmental Assessment Program Standard Operating Procedure MEL730136 Version 1.2

CONCURRENCES:

Author – Joan Protasio Date-6/2/2023

Reviewer – Myrna Mandjikov Date- 6/2/2023

QA Approval – Christina Frans Date- 6/2/2023

Laboratory Director Approval – Dean Momohara Date- 6/2/2023

Please note that the Washington State Department of Ecology's Manchester Environmental Laboratory (MEL) Standard Operating Procedures (SOPs) are adapted from published methods. They are intended for internal use only and are specific to the equipment, personnel, and samples analyzed at Manchester Laboratory. Our SOPs are not intended for use in other laboratories nor do they supplant official published methods. Distribution of these SOPs does not constitute an endorsement of a particular procedure or method.

Any reference to specific equipment, manufacturer, or supplies is for descriptive purposes only and does not constitute an endorsement of a particular product or service by the author or by the Department of Ecology.

Although the lab follows the SOP in most instances, there may be instances in which the lab uses an alternative methodology or procedure. Deviations to standard procedures will be recorded in pertinent laboratory logbooks and comments sections of the laboratory information management system (LIMS) and ultimately in the case narrative for laboratory reports.

SOP Revision History

Revision Date	Revision History	Summary of changes	Sections	Reviser(s)
12/07/2022	New	Not Applicable	All	Joan Protasio
3/17/2023	1.1	The following changes were made: Section 5.3.5 – added a stipulation that none of the components of a standard solution can be expired Section 6.6.2.1 - added "A minimum frequency of annually." CAS Registry number added to table A01.	5.3.5 6.6.2.1 Table A01	Christina Frans
5/31/2023	1.2	Added explanation for diluted sample concentration calculation and added on column concentration equations.	7.3.2.3	Christina Frans

1.0 Purpose and Scope

1.1 This document is Manchester Environmental Laboratory (MEL) Standard Operating Procedure (SOP) for the preparation and analysis of 6PPD-Quinone in water.

2.0 Applicability

- 2.1 This SOP is applicable for 6PPD-Quinone in water. Other analytes and matrices may be added if they meet the minimum QC requirements as outlined in this document.
- Analyte identifications are confirmed by retention time, a precursor ion, a product quantifier ion, at least 1 product qualifier ion, and the ratio between these two product ions.

3.0 Definitions

3.1 Acronyms

	Acronyms	
3.1.1	Ecology	Washington State Department of Ecology
3.1.2	EPA	U.S. Environmental Protection Agency
3.1.3	MEL	Manchester Environmental Laboratory
3.1.4	CAS	Chemical Abstracts Service Number
3.1.5	Element	MEL's Laboratory Information Management System (LIMS)
3.1.6	LLOQ	Lower Level Of Quantitation
3.1.7	MRL	Method Reporting Limit
3.1.8	RPD	Relative Percent Difference
3.1.9	RSD	Relative Standard Deviation
3.1.10	RF	Response Factor
3.1.11	COD or R ²	Coefficient of Determination
3.1.12	SS	Surrogate Standard
3.1.13	EIS	Extracted Internal Standard
3.1.14	IIS	Injected Internal Standard

3.2 Definitions

3.1.17 SPE

3.1.15 LC/HPLC

3.1.16 MS/MS

- 3.2.1 Analyte: An element, ion, compound, or chemical moiety (pH, alkalinity) which is to be determined. The definition can be expanded to include organisms, e.g., fecal coliform, Klebsiella.
- 3.2.2 Calibration: The process of establishing the relationship between the response of a measurement system and the concentration of the parameter being measured.

High Performance Liquid Chromatograph

Triple Quadrupole Mass Spectrometer

Solid Phase Extraction

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- 3.2.3 Continuing Calibration Verification Standard (CCV): A quality control (QC) sample analyzed prior to samples to check for acceptable bias in the measurement system. The CCV is usually a midpoint calibration standard that is re-run at an established frequency during the course of an analytical run.
- 3.2.4 Control limits: Statistical warning and action limits calculated based on control charts. Warning limits are generally set at +/- 2 standard deviations from the mean, action limits at +/- 3 standard deviations from the mean.
- 3.2.5 Duplicate samples (DUP): Two samples taken from and representative of the same population. The sample and its duplicate are carried through the steps of sampling and analytical procedures in an identical manner. Duplicate samples are used to assess variability of all method activities including sampling and analysis.
- 3.2.6 Initial Calibration Verification Standard (ICV): A QC sample prepared independently of calibration standards and analyzed along with the samples to check for acceptable bias in the measurement system. The ICV is analyzed prior to the analysis of any samples and is obtained from a second source whenever available.
- 3.2.7 Laboratory Control Sample (LCS): A sample of known composition prepared using contaminant-free water or an inert solid that is spiked with analytes of interest at the midpoint of the calibration curve or at the level of concern. It is prepared and analyzed in the same batch of regular samples using the same sample preparation method, reagents, and analytical methods employed for regular samples.
- 3.2.8 Laboratory Control Sample Duplicate (LCSD): An additional replicate of the LCS following the sample preparation and analytical testing as the original LCS.
- 3.2.9 Lower Limit of Quantitation (LLOQ): The lowest point of quantitation, which, in most cases, is the lowest concentration in the calibration curve.
- 3.2.10 Matrix Spike (MS): A QC sample prepared by adding a known amount of the target analyte(s) to an aliquot of a sample to check for bias due to interference or matrix effects (Ecology, 2004).
- 3.2.11 Matrix Spike Duplicate (MSD): An additional replicate of the matrix spike sample following the same sample preparation and analytical testing as the original sample. MSDs are used to document the precision and bias of a method for a specific sample matrix.
- 3.2.12 Method: A formalized group of procedures and techniques for performing an activity (e.g., sampling, chemical analysis, data analysis), systematically presented in the order in which they are to be executed.
- 3.2.13 Method blank (MB): A blank prepared to represent the sample matrix, prepared and analyzed with a batch of samples. A method blank will contain all reagents used in the preparation of a sample, and the same preparation process is used for the method blank and samples.
- 3.2.14 Method Detection Limit (MDL): The MDL is defined in 40CFR-136-B as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results.

- 3.2.15 Precision: The extent of random variability among replicate measurements of the same property; a data quality indicator.
- 3.2.16 Quality assurance (QA): A set of activities designed to establish and document the reliability and usability of measurement data.
- 3.2.17 Quality Assurance Project Plan (QAPP): A document that describes the objectives of a project, and the processes and activities necessary to develop data that will support those objectives.
- 3.2.18 Quality control (QC): The routine application of measurement and statistical procedures to assess the accuracy of measurement data.
- 3.2.19 Standard Operating Procedure (SOP): A document which describes in detail a reproducible and repeatable organized activity.
- 3.2.20 Surrogate: For environmental chemistry, a surrogate is a substance with properties similar to those of the target analyte(s). Surrogates are unlikely to be native to environmental samples. They are added to environmental samples for quality control purposes, to track extraction efficiency and/or measure analyte recovery. Deuterated organic compounds are examples of surrogates commonly used in organic compound analysis.

4.0 Personnel Qualifications/Responsibilities

- 4.1 The analysis in this method is restricted to use by or under the supervision of chemists experienced in the use of liquid chromatography mass spectrometry/mass spectrometry (LC/MS/MS) and the interpretation of chromatograms and mass spectra.
- 4.2 Training in this procedure with experienced personnel and completion of the training checklist and IDCs are recommended.
- 4.3 This analysis is typically performed by a Chemist 3 or Chemist 4.

5.0 Equipment, Reagents, and Supplies

- 5.1 Equipment
 - 5.1.1 Liquid chromatography triple quadrupole mass spectrometer system (LC-QQQ). This system contains an octopole guide to focus the ions toward quadrupole 1 which is MS1, this is for the precursor ions. The second quadrupole is really a hexapole used as a collision cell. A hexapole is used here because it improves focusing like a quadrupole and ion transmission like an octopole. The third quadrupole is MS2; this is for the product ions.
 - 5.1.2 LC a system with gradient programming, injection control and interface to a mass spectrometer. Agilent model 6460A/1260 HPLC system capable of performing gradient adjustments at a constant flow rate or equivalent.
 - 5.1.3 Agilent model 6460 Triple Quadrupole Mass Spectrometer (LC-QQQ) with an electrospray Ion Source using jet stream technology (ESIJT) capable of scanning from 50 to 300 m/z every 0.5 sec or less or equivalent.

- 5.1.4 Agilent MassHunter data acquisition and processing system capable of controlling the LC-QQQ and the continuous acquisition of all mass spectra and ions obtained throughout the duration of the chromatographic program.
- 5.1.5 Analytical column Reverse phase LC column 100 mm x 2.1 mm ID with 2.6 um Biphenyl 100 Å packing capable of baseline separation of the target compounds (Phenomenex 00D-4622-AN or equivalent).
- 5.2 Reagents
 - 5.2.1 Milli-Q water 18 megohms or better, free of organic contaminants.
 - 5.2.2 Methanol HPLC grade or equivalent.
 - 5.2.3 Acetonitrile- HPLC grade or equivalent.
 - 5.2.4 Hexane- Pesticide grade or equivalent.
 - 5.2.5 Formic Acid ACS grade or equivalent.
 - 5.2.6 Organic reagent (Acetonitrile with 0.1% Formic Acid) Add 1mL Formic Acid to a final volume of 1L of Acetonitrile. Reagent can be purchased premade.
 - 5.2.7 Aqueous reagent (Water with 0.1% Formic Acid) Add 1mL Formic Acid to a final volume of 1L of Milli-Q water. Reagent can be purchased premade.
- 5.3 Standards
 - 5.3.1 Internal Standards:
 - 5.3.1.1 D5-6PPD-Quinone: HPC Standards 688151 or equivalent. Store according to vendor specifications.
 - 5.3.1.2 13C6-6PPD-Quinone: Cambridge Isotopes CLM-12293-S or equivalent. Store according to vendor specifications.
 - 5.3.1.3 Note: D5-6PPD-Quinone and 13C6-6PPD-Quinone can be used as either the EIS or IIS as long as it is consistent with the preparation batch and the instrument calibration. Currently D5-6PPD-Quinone is used as the EIS and 13C6-6PPD-Quinone is used as the IIS.
 - 5.3.1.4 EIS/ SS Spike: Dilute EIS to 200 ng/mL with Acetonitrile. 100 uL of EIS Spike is added to a sample with a final extract volume of 10 mL.
 - 5.3.1.5 IIS Spike: Dilute IIS to 20 ng/mL with Acetonitrile. 1 uL of IIS Spike is added by the LC autosampler for 10 uL of sample.
 - 5.3.2 6PPD-Quinone Stock: Certified standard stock solutions from certified standard vendors (HPC Standards 688152, Cambridge Isotopes ULM-12288-S, or equivalent). Store according to vendor specifications.
 - 5.3.2.1 6PPD-Quinone Intermediate Stock: Dilute 6PPD-Quinone Stock to 1000 ng/mL with Acetonitrile.
 - 5.3.2.2 Matrix Spike: Dilute 6PPD-Quinone Stock to 200 ng/mL with Acetonitrile.
 - 5.3.2.3 LLOQ Spike: Dilute Matrix Spike to 2.5 ng/mL with Acetonitrile.

- 5.3.2.4 ICAL Standards: Dilute in acetonitrile the 6PPD-Quinone Intermediate Stock, Matrix Spike, or LLOQ spike to the calibration concentrations and add EIS Spike to a final concentration of 2 ng/mL. The suggested ICAL concentrations are 0.025, 0.1, 0.5, 1, 2, 5, 10, 25, 50, and 100 ng/mL.
- 5.3.2.5 CCV: Use the equivalent ICAL standard. Suggested concentration is 2 ng/mL.
- 5.3.2.6 ICV: Prepared the same as the ICAL standard but with a different vendor. Suggested concentration is 2 ng/mL.
- 5.3.3 Standard concentrations can differ from those stated in this SOP. Document all standard preparations in the standards section of Element.
- 5.3.4 Store certified standard stocks as recommended by the vendor.
- 5.3.5 All intermediates, spikes, ICAL, ICV, and CCV standards are stored refrigerated. The maximum expiration is one year from the date of preparation provided none of the components are expired.
- 5.4 Supplies
 - 5.4.1 SPE Cartridge: Waters Oasis HLB 6cc (200mg) SPE cartridge (WAT 106202) or Bakerbond Speedisk H2O-Philic DVB (8072-07) or equivalent
 - Vacuum manifold: 12 or 24 port Supelco Visiprep or 6 port vacuum manifold & reservoir apparatus for Speedisk or equivalent.
 - 5.4.3 Transfer tubing for HLB 6cc SPE cartridges.
 - 5.4.4 Syringes assorted sizes for the preparation of standards and spiking to samples.
 - 5.4.5 2mL autosampler vials with crimp-top caps or screw-caps.
 - 5.4.6 15 mL sample vials
 - 5.4.7 Class A volumetric flasks of various sizes.

6.0 Summary of Method

- This SOP describes procedures for the extraction and the qualitative and quantitative analysis of 6PPD-Quinone by triple quadrupole mass spectrometry.
- This method uses reverse phase high performance liquid chromatographic, electrospray ionization with jet stream technology (ESIJT), and triple quadrupole mass spectrometric (LC-QQQ) conditions. Detection is achieved using positive ESIJT and a triple quadrupole mass spectrometer. Quantitative analysis is performed using Isotopic Dilution.
- 6.3 250 mL water samples are spiked with isotopically labeled 6PPD-Quinone (EIS). The necessary QC samples are also spiked with the target analyte(s) at this time. The samples are then extracted using SPE.
- 6.4 Interferences

- 6.4.1 Method interferences may be caused by contaminants in solvents, reagents, glassware and other sample processing apparatus that lead to discrete artifacts or elevated baselines in liquid chromatograms. All reagents and apparatus must be routinely demonstrated to be free from interferences under the conditions of the analysis by running laboratory method blanks. To minimize interference from sample matrix, this method is best utilized with samples of known matrix and interferences.
- Raw LC-MS/MS data from all blanks, samples, and spikes must be evaluated for interferences. Determine if the source of interference is in the preparation and/or cleanup of the samples and take corrective action to eliminate the problem.
- 6.4.3 Cross contamination may occur when a sample containing a low concentration of analytes is analyzed immediately following a sample containing relatively high concentrations of analytes. After analysis of a sample containing high concentrations of analytes, one or more laboratory method blanks should be analyzed.
- 6.4.4 Matrix interference may be caused by contaminants that are present in the sample. The extent of matrix interference will vary considerably from sample to sample, depending on the source sampled. Positive identifications must be confirmed by retention times, precursor ions, product ions, and product ion ratios. Samples can exhibit matrix suppression so extracting a subsample or dilution of the extract may be necessary to minimize the matrix interference.
- 6.5 Sample Collection, Preservation, Storage, and Holding Times
 - 6.5.1 Grab samples are collected in 250 mL bottles. Conventional sampling practices should be followed.
 - 6.5.2 At this time, no preservative has been established for 6PPD-Quinone. For now, unpreserved samples will be used.
 - 6.5.3 Samples must be stored at a temperature above freezing and up to 6°C from collection until analysis.
 - No hold time has been established for this analyte. For now, a 28 day hold time for samples will be used.
 - 6.5.5 The extract hold time will be 40 days after extraction.
- 6.6 Calibration and Standardization
 - 6.6.1 Instrument Tune
 - 6.6.1.1 Perform a check tune prior to an initial calibration to monitor the instrument status. The check tune requirements are set by the manufacturer and are noted on the check tune report.
 - 6.6.1.2 If there are more than 10 parameters out of spec or MS2 abundance for 2122 ion is less than 15000, check the tune solution and spray nozzle and/or adjust the failing tune parameter in manual tune. Perform another check tune. If this one fails, then instrument maintenance and/or a full autotune are required.
 - 6.6.1.3 All check tunes are accessible via the MassHunter acquisition software.
 - 6.6.2 ICAL

- 6.6.2.1 Prepare calibration standards at a minimum of six concentration levels for each analyte of interest. The lowest standard represents analyte concentrations at or below the LLOQ.
 - 6.6.2.1.1 Initial calibrations are preformed prior to analyzing samples and are repeated as needed when calibration verification is no longer within criteria or at a minimum frequency of annually.
- Analyze each calibration standard using the MassHunter Software. Calculations are performed by the instrument's software. MassHunter Software has many options for calibration curves which may be used.
- 6.6.2.3 All analytes must meet or exceed one of the following calibration model criteria:
 - 6.6.2.3.1 Average Response Factor:

Minimum 5 ICAL points and %RSD < 20%

Average RF equation: y = x/RF

Where y = Instrument Target Concentration / Instrument IS Concentration

x = Target Response/ IS Response

RF = Average Response Factor

6.6.2.3.2 Linear curve:

Minimum 5 ICAL points and $R^2 \ge 0.99$;

Linear Equation: y = ax + b

Where y = Instrument Target Concentration/ Instrument IS Concentration

x = Target Response/ IS Response

a = Slope of the regression line

b = y-intercept of the regression line

6.6.2.3.3 Quadratic curve:

Minimum 6 ICAL points and $R^2 \ge 0.99$

Quadratic Equation: $y = ax^2 + bx + c$

Where y = Instrument Target Concentration/ Instrument IS Concentration

x = Target Response/ IS Response

a, b, c = quadratic coefficients

- 6.6.2.4 Most curve fitting programs will use some form of least squares minimization to adjust the coefficients of the polynomial (a, b, and c, above) to obtain the polynomial that best fits the data. The "goodness of fit" of the polynomial equation is evaluated by calculating the coefficient of determination (COD). Under ideal conditions, with a "perfect" fit of the model to the data, the coefficient of the determination will equal 1.0. In order to be an acceptable non-linear calibration, the COD must be greater than or equal to 0.99. (See SW-846 method 8000D section 11.5.3.2).
 - 6.6.2.4.1 If data of lesser quality will satisfy project-specific data needs, then less stringent criteria may be employed, provided that they are documented and approved in a project-specific QAPP.
- 6.6.3 Initial Calibration Verification (ICV).

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- 6.6.3.1 The initial calibration curve for each target analyte must be checked immediately with a standard from a source different from that used for the initial calibration. This standard must be made using stock standards prepared independently from those used for calibration. Preferably an alternate vendor is used. If an alternate vendor is not available, a different lot number from the same vendor may be used.
- 6.6.3.2 Analyze the ICV standard directly after calibration. The ICV is used to verify the stock after every new calibration curve that is analyzed.
- 6.6.3.3 The analyte recoveries should be within +/- 30% of their expected concentration. If the ICV does not meet quality criteria, the instrument may be recalibrated. If the ICV failed due to problems other than calibration, remake the standard and reanalyze. If the ICV passes, continue the sequence. If it fails, abort the sequence, determine the problem, and recalibrate the instrument. On a case by case basis, per client and supervisor approval, samples associated with an ICV not meeting acceptance limits can be reported so long as they are addressed in the case narrative and qualified as estimates.
- 6.6.4 Back Calculation (Residuals)
 - 6.6.4.1 Re-calculate each ICAL concentration level using the updated calibration curve. The percent difference between the calculated concentration and the expected concentration for each analyte at that level should not be more than 30%; except for the lowest standard used in the curve, where analytes are allowed to be within 50%. If these requirements are not met, the ICAL for those analytes fails and should be reanalyzed. If the ICAL cannot be reanalyzed, all results for any analyte with a high percent difference must be qualified as estimated. If an analyte fails with a high percent difference, any detections will be qualified as estimated. If the low standard does not meet these criteria and low reporting limits are not required, the reporting limit may be raised to that of the next lowest standard which does meet the criteria.
- 6.6.5 Continuing Calibration Verification.
 - 6.6.5.1 Analyze a CCV standard at a minimum of every 12 hours. The CCV analyzed is a mid level standard and should be prepared from the same source as calibration standards. The acceptance range is +/- 30%. If a CCV does not meet quality criteria, recalibrate the instrument and reanalyze the samples. On a case by case basis, samples associated with a CCV not meeting acceptance limits can be reported so long as they are qualified as estimates.

7.0 Procedure

- 7.1 Sample Preparation:
 - 7.1.1 Spike samples and QC samples with EIS spike and matrix spike as needed.
 - 7.1.2 Place a SPE cartridge on the vacuum manifold for each sample and QC.
 - 7.1.3 Condition the SPE cartridges by adding about 5 mL of Acetonitrile to each and allow it to flow through at a vacuum flow rate of 2.5 3.0 mL/minute.
 - 7.1.4 Then condition with about 10 mL of Milli-Q water and allow it to pass through. Before the cartridge goes dry, load the sample at a vacuum flow rate of 2.5 3.0 mL/minute.

- 7.1.5 Rinse the sample bottle with about 10 mL of Milli-Q water and load the rinse through the SPE cartridge.
- 7.1.6 Rinse the SPE cartridge with about 5 mL of 1:1 Methanol:Water and then 5 mL of Hexane.
- 7.1.7 Increase the vacuum to maximum for at least 5 minutes to dry the SPE cartridge.
- 7.1.8 Remove from vacuum and add a 15mL vial under each SPE cartridge to collect eluent.
- 7.1.9 Add 5mL of Acetonitrile to the sample bottle. Cap and shake well to extract any analytes from the inside glass surface. Add this to the top of the SPE cartridge and elute.
- 7.1.10 Elute with an additional 5 mL of Acetonitrile.
- 7.1.11 Bring to a final volume of 10 mL.
- 7.2 Sample Analysis:
 - 7.2.1 Instrument run setup.
 - 7.2.1.1 Start the instrument.
 - 7.2.1.1.1 If the system has been turned off, turn on the computer, mass detector, autosampler, pump and degas unit.
 - 7.2.1.1.2 Start Triple Quadrupole (MassHunter) software. Ensure that all systems are communicating and status lights are yellow or green.
 - 7.2.1.1.3 Load the current analysis method.
 - 7.2.1.1.4 If needed, perform routine maintenance. See Appendix D for maintenance information.
 - 7.2.1.2 Run a check tune if running an initial calibration.
 - 7.2.1.2.1 Prior to running an autotune or check tune, let the pump equilibrate for approximately 20 minutes. Check background spectra in tune. Check abundance of ions in the tune. See Section 6.6.1 for more information.
 - 7.2.1.3 Prepare the sample vials for the sequence.
 - 7.2.1.3.1 Transfer samples, batch QC, and necessary QC standards into autosampler vials.
 - 7.2.1.3.2 The IIS Spike standard is added by the autosampler program during the injection sequence. Fill the vial that holds the IIS spike solution with a fresh aliquot each day.
 - 7.2.1.3.3 Load vials for analysis onto the autosampler tray.
 - 7.2.1.4 Setting up a Worklist.
 - 7.2.1.4.1 Go to the Worklist tab to show the worklist spreadsheet.
 - 7.2.1.4.2 Enter Sample name, Sample position, Comment, Method, and Data file. Other settings in the worklist can just stay at the default setting.
 - 7.2.1.4.3 If the instrument has been idle, add at least 3 conditioning runs to the beginning of the sequence. This helps the retention times stabilize.

7.2.1.4.4 Typical ICAL sequence run:

If instrument has been idle, minumum 3 conditioning injections ICAL Standards – minimum of 5 standards for linear calibration and minimum 6 standards for quadratic calibration. (See section 5.3.2.4 for suggested concentrations.)

ICV (See section 5.3.2.6 for suggested concentration.)

7.2.1.4.5 Typical Sample sequence run:

If instrument has been idle, minumum 3 conditioning injections CCV (See Section 5.3.2.5 for suggested concentration.)

MB

LCS

LCSD

Samples (up to 12 hours from CCV run)

- 7.2.1.4.6 At the end of the sequence, add 2 solvent rinse runs.
- 7.2.1.4.7 Run the Worklist.
- 7.2.2 Process the sample results using the MassHunter Quantitative Analysis.
 - 7.2.2.1 Any samples outside of the criteria outlined in Section 6.6 (Calibration and Standardization) and Section 9.0 (Quality Control and Quality Assurance) may need to be rerun and reanalyzed.
 - 7.2.2.2 Dilute samples with concentrations exceeding the linear range to approximately the middle of the curve and reanalyze.
 - 7.2.2.3 Screening samples: Because the targets are calculated with an EIS, it may be necessary to prepare samples with a smaller initial volume for the analyte to be within calibration range without diluting out the EIS. If high concentrations are expected, it may be necessary to screen a dilution of the sample prior to sample preparation.
- 7.2.3 Calculations
 - 7.2.3.1 Qualitative Identification of Target Compounds
 - 7.2.3.1.1 Target compound identification is made by precursor and product ions as well as retention time matching. The precursor ions are mass filtered in MS1 then they enter the collision cell where the ions collide. The ions are filtered again in MS2 and then product ions are detected. This process eliminates much interference which aides in compound identification since we are looking for compounds that begin at one mass and are then broken into certain ions with a specific ratio. Sample compound and a current laboratory-generated standard must be present and compared.
 - 7.2.3.1.2 Using available software, search for each target compound in the established retention time window. Examine chromatograms and determine if a positive identification is present.

- 7.2.3.1.3 Examine baseline and peak integration to insure proper area integration. If the compound is present but not properly integrated then manually integrate the peak. See SOP 730127 Proper Manual Peak Integration.
- 7.2.3.1.4 Examine transition and all product ions for confirmation ions to further validate the compound identification.
- 7.2.3.1.5 If there is evidence of retention time shift, use relative retention to the surrogate or internal standard along with confirming ions to validate the identification.
- 7.2.3.1.6 Technical Acceptance Criteria are determined by qualitative analysis of ion retention times, transition ions (precursor and product ions), chromatography, and ion abundance ratios.
- 7.2.3.1.7 The relative retention times (RRTs) must be within ± 0.03 RRT units of the standard RRT. Use professional judgment when there is a question if 0.03 RRT units may be too broad or too narrow. Document when reporting results outside of criteria including rationale.
- 7.2.3.1.8 Verify the presence of product ions and check their corresponding ratios of the analyte in the sample. Compare product ion ratios in samples against a current laboratory-generated standard (i.e., the ion ratios from the associated calibration standard). The ion ratio acceptance criteria for this method are set at +/- 30%. The relative response ratio is calculated by dividing the qualifier ion area by the quantifier ion area.
- 7.2.3.2 Quantitative analysis of target analytes:
 - 7.2.3.2.1 When a compound has been identified, the quantification of that compound will be based on the integrated abundance from the primary product ion (also called the quantifying ion). The initial calibration (see Section 6.6.2) is used for the determination of the extract concentration.
 - 7.2.3.2.2 As this is an isotope dilution method, calculation of the on column concentration when a sample is diluted is taken into account by the response of the extracted internal standard. The EIS is added to the sample prior to extraction therefore, it is also diluted by the same factor as all other analytes. A separate dilution factor is not required in the calculation of the target analyte, 6PPD-Q (see equation in Section 7.2.3.2.3). The surrogate compound is calculated using the injected internal standard (IIS) and is not calculated in the same way as 6PPD-Q (see equation in Section 7.2.3.2.4)
 - 7.2.3.2.3 For 6PPD-Q:

$$C_{I} = \frac{(Area_{n})(M_{EIS})}{(Area_{FIS})(\overline{RF})}$$

Where: $C_I = On column Concentration (ng/mL)$

 $Area_n = The measured area of 6PPD-Q$

 $Area_{EIS} = The measured area for the EIS$

 M_{EIS} = The Concentration of the EIS added (ng/mL)

 \overline{RF} = Average response factor

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7.2.3.2.4 And for the SS analyte:

$$C_I = \frac{(Area_{SS})(M_{IIS})}{(Area_{IIS})\overline{(RF_S)}}$$

Where: $C_I = Final Concentration (ng/mL)$

 $Area_{SS}$ = The measured area of D5-6PPD-Q $Area_{IIS}$ = The measured area of 13C6-6PPD-Q M_{IIS} = The concentration of the IIS added (ng/mL)

 \overline{RF}_s = Average response factor

7.2.3.3 Calculate the concentration of each identified analyte in the sample as follows:

$$C_F = \frac{C_I(v_F)(D)}{v_I}$$

Where: $C_F = Final Concentration (ng/L)$

C_I = On Column Concentration (ng/mL) V_F = Final Volume of Extract (mL)

D = Dilution Factor (only used for surrogate)

 V_I = Initial Volume of Sample (mL)

Results are reported as nanograms/liter (ng/L).

7.2.3.4 Laboratory Control Sample (LCS) recoveries are calculated as follows:

$$LCS Recovery(\%) = \frac{MCSS}{SCA} \times 100$$

Where: MCSS = Measured Concentration of Spiked Sample

SCA = Spike Concentration Added

7.2.3.5 If a Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) pair was analyzed, calculate the Relative Percent Difference (RPD) of each compound as follows:

$$RPD = \left[\frac{|LCS-LCSD|}{(LCS+LCSD)/2} \right] \times 100$$

Where: LCS = Laboratory Control Sample Recovery

LCSD = Laboratory Control Sample Duplicate Recovery

7.2.3.6 Matrix Spike (MS) recoveries are calculated as follows:

$$MSR = \left[\frac{MCSS - MSSC}{SCA}\right] \times 100$$

Where: MCSS = Measured Concentration of Spiked Sample

MSSC = Measured Source Sample Concentration

SCA = Spike Concentration Added

MSR% = Matrix Spike Recovery %

7.2.3.7 If a Matrix Spike and Matrix Spike Duplicate (MS/MSD) pair was analyzed, calculate the RPD of each compound as follows:

$$RPD = \left[\frac{|MSR-MSDR|}{(MSR+MSDR)/2} \right] \times 100$$

Where: MSR = Matrix Spike Recovery

MSDR = Matrix Spike Duplicate Recovery

8.0 Records Management

- 8.1 Retain raw data for 7 years following reporting. The data PDF reports are stored in Element. Raw data are also stored on the instrument computer or in a designated area for 7 years.
- 8.2 Instrument and/or sample preparation logbooks are kept next to the instrument or with the Chemist performing the analysis.
 - 8.2.1 When the logbooks are full, they are given to the MEL QA Coordinator for filing and secure storage.
 - 8.2.2 Logbooks used to document instrument maintenance or routine documentation of a single piece of equipment are retained for 10 years after the retirement of the instrument/equipment.
 - 8.2.3 Logbooks used to document procedures, such as preparation/extraction, preservation, etc. not tied to specific to equipment, or that are used to document quality control of more than one piece of equipment, are retained for 10 years after submission to QAC for secure storage.
- 8.3 The LCMSMS Data Review Checklist can be found in MEL's Sharepoint page under Organics Documents Data Review. The checklist lists what reports and data should be included with the work order package.
- 8.4 MassHunter generates the following reports: Sequence Logs, Tune Reports, ICAL Reports, and Quantitation Reports.
- 8.5 Element generates the following reports: Sample Preparation Batch, Sequence Report, Review Reports, and Final Reports.
- 8.6 If necessary, the Corrective Action Form (CAF) can be found in MEL's Sharepoint page under Organics Forms.

9.0 Quality Control and Quality Assurance

- 9.1 Refer to client's QAPP for special QA/QC protocols.
- 9.2 Samples are qualified following data qualification SOP 730121 guidelines.
- 9.3 Internal Standards:
 - 9.3.1 Each sample run is spiked with the IIS to a concentration of 2 ng/mL by the instrument. The EIS is added during preparation of the samples and calibration standards.
 - 9.3.2 CCV: Reanalysis is necessary for any CCV standard in which the IIS peak area varies by more than +/- 50% from the IIS area obtained during the initial calibration.
 - 9.3.3 Samples: Reanalysis is necessary for any sample in which the IIS peak area varies by more than +/- 50% from the IIS area of the associated CCV standard. If reanalysis confirms this variance in signal, all the analytes associated with that internal standard must be qualified following data qualification SOP 730121 guidelines.
 - 9.3.3.1 Sample Dilution: Instead of reanalysis at the original LLOQ, reanalysis of the sample at a dilution may minimize the IIS failure by lessening matrix interference. Use professional judgment to decide the best way to report the results.
- 9.4 Method Blank:
 - 9.4.1 A Method Blank (MB) must be prepared with each extraction batch of 20 or fewer samples.
 - 9.4.2 The blanks must be free from contamination at a concentration at or below the LLOQ.
 - 9.4.2.1 If the MB fails to meet quality criteria, the analyst determines whether to qualify the data, reanalyze, or re-extract the samples depending on severity of contamination and project objectives. At a minimum, the reanalysis includes the MB and the affected samples.
 - 9.4.2.2 If low reporting limits are not required, the RL may be raised, per client approval.
 - 9.4.2.3 On a case by case basis, per client or supervisor approval, samples associated with a MB not meeting acceptance limits can be reported so long as they are addressed in the case narrative and qualified following data qualification SOP 730121 guidelines.
- 9.5 Laboratory Control Sample:
 - 9.5.1 Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) must be prepared with each extraction batch of 20 or fewer samples.
 - 9.5.2 The LCS/LCSD recoveries should fall within laboratory control limits which are based on statistical control charts. New analytes are set at 50%-150% recovery until control charting the limits are possible.
 - 9.5.3 The duplicate RPD should be less than or equal to 40%.
 - 9.5.4 LCS outside criteria are typically reanalyzed to confirm results. The associated samples may need to be re-extracted if hold time and extra sample volume permits.

- 9.5.5 On a case by case basis, per client or supervisor approval, samples associated with an LCS not meeting acceptance limits can be reported so long as they are addressed in the case narrative and qualified following data qualification SOP 730121 guidelines.
- 9.6 Matrix Spike:
 - 9.6.1 If requested by the client, Matrix Spike Sample and Matrix Spike Sample Duplicate (MS/MSD) are prepared with an extraction batch of 20 or fewer samples.
 - 9.6.2 The MS/MSD recoveries should fall within laboratory control limits which are based on statistical control charts. New analytes are set at 50%-150% recovery until control charting the limits are possible.
 - 9.6.3 The duplicate RPD should be less than or equal to 40%.
 - 9.6.4 MS/MSD samples are typically not re-prepared or re-analyzed unless obvious preparation or analysis errors occurred or the results are grossly outside criteria.
 - 9.6.5 For results outside of the acceptance limit, qualify the source sample analytes as estimates following data qualification SOP 730121 guidelines. All other anomalies are dealt with on a case-by-case basis and referred to the supervisor.
- 9.7 Sample Duplicate:
 - 9.7.1 A DUP is analyzed if requested by the client.
 - 9.7.2 The duplicate RPD should be less than or equal to 40%.
 - 9.7.3 DUP samples are typically not re-prepared or re-analyzed unless obvious preparation or analysis errors occurred.
 - 9.7.4 If the RPD fails due to heterogeneity or matrix interference, qualify the failing analytes in the source sample following data qualification SOP 730121 guidelines. All other anomalies are dealt with on a case-by-case basis and referred to the supervisor.
- 9.8 Surrogates:
 - 9.8.1 The EIS is used as the surrogate. The recovery limits are 20-200%.
- 9.9 Investigate samples not meeting control limits to determine the root cause of QC failure(s) by checking calculation errors, standard solution degradation, contamination, and instrument performance. If applicable, make the necessary adjustments and reanalyze the sample. If the limits are met, report results from the reanalyzed sample. If the limits are still not met, re-extract if hold time and extra sample volume permits; otherwise, qualify that sample data following data qualification SOP 730121 guidelines.
- 9.10 Lower Level of Quantitation:
 - 9.10.1 LLOOs are analyzed annually.
 - 9.10.2 See SOP 770044 Method Detection Limits and Lower Limits of Quantitation/Reporting Limits.
- 9.11 Method Detection Limits
 - 9.11.1 Perform an MDL study for all projects supporting the Clean Water Act or if needed for client specific projects as stated in its QAPP.

	9.11.2	See SOP 770044: Method Detection Limits and Lower Limits of Quantitation/Reporting Limits.
9.1	2	Initial Demonstration of Capability (IDC)
	9.12.1	See SOP: 770032 Personnel Training.
	9.12.2	IDCs are performed when:
	9.12.2.1	There are new personnel responsible for analysis or sample preparation.
	9.12.2.2	There is a major change in hardware.
	9.12.2.3	There is a major change in sample preparation.
	9.12.2.4	There is a major change to the instrument method.
	9.12.2.5	New analytes are added to the method.
	9.12.3	Blind Sample IDC
	9.12.3.1	Performed annually.
	9.12.3.2	Another chemist (not the primary chemist for the analysis) prepares an unknown spike sample and sends the concentration information to the QAC.
	9.12.3.3	The primary chemist will analyze this spike sample.
	9.12.3.4	The blind sample measured concentration should be within LCS control limits.
9.1	.3	Document the preparation of standards in Element standard preparation module.
9.1	.4	Document the preparation of samples in Element and the preparation log book.
9.1	.5	Document all instrument problems in the instrument log book.
9.1	.6	Print and store the sequence in the instrument log book.
10.	.0	Safety
10.	.1	The toxicity or carcinogenicity of each reagent used in this method has not been precisely defined; however, each chemical compound must be treated as a potential health hazard. Accordingly, exposure to these chemicals must be reduced to the lowest possible level.
10.	.2	The analysts should be familiar with the location and proper use of the fume hoods, eye washes, safety showers, and fire extinguishers. In addition, the analysts must wear protective clothing at all times, including safety glasses, goggles, or a face shield.
10.	.3	Fume hoods must be utilized whenever possible to avoid potential exposure to organic solvents.
10.	.4	Work with solvents or chemicals may be performed only when at least one other person is in the area.
10.	.5	Follow all safety guidelines outlined in the Laboratory Health and Safety Manual and Chemical Hygiene Plan.
10.	.6	Waste Management/Pollution Prevention

11.0	References
11.1	EPA SW-846 Update IV Method 8000D: Determinative Chromatographic Separations, Revision 5 March 2018
11.2	40 CFR Part 136, Appendix B, "Definition and Procedure for the Determination of Method Detection Limit", Revision 2, 8/28/17
11.3	40 CFR Part 136.6: Method modifications and analytical requirements.
11.4	40 CFR Part 136.7: Quality assurance and quality control.
11.5	Tian, et al. A Ubiquitous Tire Rubber–Derived Chemical Induces Acute Mortality in Coho Salmon. Science 2021, 371(6525), 185–189.
11.6	Quantitation of Toxic Tire Degradant 6PPD-Quinone in Surface Water, Agilent Technologies, Inc. 2021, 5994-3754EN
11.7	Agilent 6400Series QQQ LC/MS Techniques and Operation Course Number R1893A Volume I Student Manual, Data Acquisition B.02.01; Qual B.2 SP3; Quant B.03.01. 2009 Agilent Technologies, Inc.
11.8	Maintaining Your Agilent LC and LC/MS Systems. Agilent.
11.9	Manchester Environmental Laboratory Quality Assurance Manual, Washington State Department of Ecology.
11.10	Chemical Hygiene Plan, US EPA Region 10 Laboratory.
11.11	Dangerous Waste Disposal Manual, US EPA Region 10 Laboratory and Washington State Dept. of Ecology.
11.12	Laboratory Health and Safety Manual for US EPA Region 10 Laboratory and Washington Department of Ecology Laboratory.
11.13	MEL SOP 730121: Data Qualification of Organic Sample Results.
11.14	MEL SOP 730127: Proper Manual Peak Integration
11.15	MEL SOP 770044: Method Detection Limits and Lower Limits of Quantitation/Reporting Limits
11.16	MEL SOP 770032 SOP for Personnel Training

Dispose of laboratory-generated waste and waste sample in accordance with the

Manchester Laboratory Dangerous Waste Disposal Manual.

10.6.1

Appendix A: Compound List and Transitions

Table A01

Analyte	CAS	Quantitation Transition	Qualifier Transition	lon Polarity
6PPD-quinone	2754428-18-5	299.1 → 215.1	299.1 -> 241.1 299.1 -> 187.1	Positive
D5-6PPD-quinone (EIS/Surrogate)	NULL	304.1 → 220.1	304.1 -> 246.1	Positive
13C6-6PPD-Quinone (IIS)	NULL	305.1 → 221.1	305.1 -> 247.1	Positive

Note 1: This table has the current compound list for this method. Depending on demand, compounds may be added or removed. Additional compounds require further requirements (see Section 9).

Note 2: This table has the current transitions used for this analysis. Alternate transitions may be used as long as they are consistent with the ICAL used for calculations.

Appendix B: Retention Times and IS Associations

Table B01

Analyte	Retention Time	Associated IS
6PPD-quinone	7.34	D5-6PPD-quinone (EIS)
D5-6PPD-quinone (EIS/Surrogate)	7.33	13C6-6PPD-Quinone (IIS)
13C6-6PPD-Quinone (IIS)	7.34	NA

Note 1: Retention Times are approximate and can change depending on instrument conditions.

Note 2: The role of the D5-6PPD-quinone and 13C6-6PPD-Quinone may be switched. See section 5.3.1.

Appendix C: Instrument Method

Method Name: 6PPDQ_2022A.m

Method Path: C:\MassHunter\methods\CURRENT METHODS\6PPDQ_2022A.m

MS QQQ Mass Spectrometer Model G6460A Settings:

Table C01: MS Settings

Parameter	Setting
Ion Source	AJS ESI
Stop Mode	No Limit/As Pump
Time Filter	On
LC->Waste Pre Row	N/A
Tune File	C:\MassHunter\Tune\QQQ\G6460A\atunes.TUNE.XML
Stop Time (min)	No limit
Time Filter Width (min)	0.05
LC->Waste Post Row	N/A

Table C02: MS Time Segments

Index	Start Time (min)	Scan Type	Ion Mode	Div Valve	Delta EMV (+)	Store	Cycle Time (ms)	Triggered?	MRM Repeats
			ESI+						
		Dynamic	Agilent	To					
1	0.4	MRM	Jet Stream	MS	400	Yes	500	No	3

Table C03: MS Scan Segments

Cpd Name	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
6PPD-quinone	299.1	Unit/Enh (6490)	256.1	Unit/Enh (6490)	140	20	4	7.3	3	Positive
6PPD-quinone	299.1	Unit/Enh (6490)	241.1	Unit/Enh (6490)	105	32	4	7.3	3	Positive
6PPD-quinone	299.1	Unit/Enh (6490)	215.1	Unit/Enh (6490)	105	16	4	7.3	3	Positive
6PPD-quinone	299.1	Unit/Enh (6490)	187.1	Unit/Enh (6490)	105	32	4	7.3	3	Positive
6PPD-quinone	299.1	Unit/Enh (6490)	170.1	Unit/Enh (6490)	120	30	4	7.3	3	Positive
D5-6PPDQuinone	304.1	Unit/Enh (6490)	246.1	Unit/Enh (6490)	110	36	4	7.3	3	Positive
D5-6PPDQuinone	304.1	Unit/Enh (6490)	220.1	Unit/Enh (6490)	110	20	4	7.3	3	Positive
13C6-6PPDQuinone	305.1	Unit/Enh (6490)	247.1	Unit/Enh (6490)	110	36	4	7.3	3	Positive
13C6-6PPDQuinone	305.1	Unit/Enh (6490)	221.1	Unit/Enh (6490)	110	20	4	7.3	3	Positive

Table C04: MS Scan Parameters

Data Stg	Threshold
Centroid	0

Table C05: MS Source Parameters

Parameter	Value (+)	Value (-)			
Gas Temp (°C)	300	300			
Gas Flow (I/min)	10	10			
Nebulizer (psi)	40	40			
Sheath Gas Heater	375	375			
Sheath Gas Flow	11	11			
Capillary (V)	2500	0			
V Charging	0	0			

Table C06: MS Chromatograms

Chrom Type	Label	Offset	Y-Range
TIC	TIC	0	1500000

Sampler Model G1329B:

Table C07: Sampler Settings

Parameter	Setting
Auxiliary: Draw Speed	200 μL/min
Auxiliary: Eject Speed	100 μL/min
Auxiliary: Draw Position Offset	5.0 mm
Injection Mode	Standard injection
Injection Volume	5.00 µL
Enable Overlapped Injection	No
Stoptime Mode	As pump/No limit
Posttime Mode	Off
Pretreatment Step 1: Wash	Wash needle in location "Vial 92" 1 times
Pretreatment Step 2: Draw	Draw 1 µL from location "Vial 91" with default speed using default offset
Pretreatment Step 3: Wash	Wash needle in location "Vial 92" 1 times
Pretreatment Step 4: Draw	Draw 10 µL from sample with default speed using default offset
Pretreatment Step 5: Inject	Inject

Note 1: A vial of Methanol is in location "Vial 92" of the sample tray.

Note 2: A vial of the IIS solution is in location "Vial 91" of the sample tray.

Table C08: Column Comp. Settings

Parameter	Setting
Valve Position	Position 1 (Port 1 -> 2)
Left Temperature Control Mode	Temperature Set
Left Temperature	40.0 °C
Enable Analysis Left Temperature On	Yes
Enable Analysis Left Temperature Value	0.8 °C
Right Temperature Control Mode	Combined
Enable Analysis Right Temperature On	Yes
Enable Analysis Right Temperature Value	0.8 °C
Stop Time Mode	As pump/injector
Post Time Mode	Off

Binary Pump Model G1312B:

Table C09: Binary Pump Settings

Parameter	Setting	
Flow	0.400 mL/min	
Use Solvent Types	No	
Low Pressure Limit	0.00 bar	
High Pressure Limit	590.00 bar	
Maximum Flow Gradient	100.000 mL/min ²	
Automatic Stroke Calculation A	Yes	
Automatic Stroke Calculation B	Yes	
Compressibility Mode A	Compressibility Value Set	
Compressibility A	50 10e-6/bar	
Compressibility Mode B	Compressibility Value Set	
Compressibility B	115 10e-6/bar	
Stop Time Mode	Time set	
Stop Time	10.5 min	
Post Time Mode	Time set	
Post Time	4.00 min	

Table C10: Binary Pump Solvent Composition

Solvent Composition	Channel	Name 1	Selected	Used	Percent
1	А	H2O (0.1% formic)	Ch. 1	Yes	90.0 %
2	В	ACN (0.1% formic)	Ch. 1	Yes	10.0 %

Table C11: Binary Pump Timetable

Timetable	Time	Α	В	Flow	Pressure
1	0.50 min	90.0 %	10.0 %	0.400 mL/min	590.00 bar
2	5.00 min	15.0 %	85.0 %	0.400 mL/min	590.00 bar
3	10.00 min	0.0 %	100.0 %	0.400 mL/min	590.00 bar
4	10.50 min	0.0 %	100.0 %	0.400 mL/min	590.00 bar

Appendix D: Routine Maintenance

Routine Maintenance Schedule:

Daily Maintenance:

- 1. Change the needle wash solvents.
- 2. Replace IIS vial.
- 3. Check solvent eluent levels.
- 4. Check column pressure. If it has significantly changed for no reason, reload the method, check for leaks, line kinks, pump bypass valve closure, and solvent eluent levels.

Weekly:

- 1. Check and drain rough pump reservoir mist filter.
- 2. Run a check tune.

Monitor:

- 1. Rough Vac number: (1.8-2.2 torr is normal)
- 2. Slope. (1-3 is normal)
- 3. High Vac number (2.7-3.3X 10⁻⁵ torr is normal)
- 4. Collision cell gas on (3.0-6.0X 10⁻⁶ torr is normal)
- 5. Collision cell gas off

As Required:

- **1.** Clean the source and capillary inlet:
 - a. If instrument has been on, then set to standby, turn source gas and sheath gas to 0, and cool source before cleaning.
 - b. Open ESIJT source door cover, rinse and wipe down interior of the spray chamber with isopropyl alcohol or methanol.
 - c. If several analytes lose sensitivity, check capillary cover for discolor, polish the capillary cover with aluminum oxide power and then sonicate in water or a mixture of water and acetonitrile or methanol or isopropyl alcohol.

2. Solvent Eluents:

- a. If necessary, Refill or Change the eluent.
- b. Prime the pumps when eluent is refilled, changed, or the system has been idle.
 - i. Open the pump bypass valve and increase flow.
 - ii. Increase the % of the solvent bottle being primed. Allow the solvent to flow until no bubbles can be seen going through the lines.
 - iii. Decrease flow and close valve after pump is primed.
- **3.** Reboot PC.
- **4.** Check Software Center for updates.

STANDARD OPERATING PROCEDURE

for

6PPD-quinone by LCMS/MS

SOP # 4077 v0

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1.0 INTRODUCTION

6PPD-quinone is formed by the degradation of the ubiquitous tire-rubber stabilizer 6PPD (N-1,3dimethylbutyl-N'-phenyl-p-phenylenediamine). This degradation product has been shown to have toxic effects in juvenile coho salmon (Tian et al, 2021).

The present method is based on analysis using a high performance liquid chromatograph (HPLC) coupled to a triple quadrupole mass spectrometer (QQQ) equipped with an electrospray ionization source, collectively referred to as a LCMSMS system. A quadrupole consists of four parallel hyperbolic rods through which selected ions are filtered. Precursor ions are filtered through the first quadrupole before reaching a collision cell (sometimes called a second quadrupole) where they are fragmented into product ions. The fragment ions are then sent to the third quadrupole for a second filtering stage, enabling the user to isolate specific precursor to product ion transitions. In multiple reaction monitoring (MRM) mode a specific precursor ion and two or more of its productions can be monitored.

For the present method 6PPD-quinone and its isotopically labeled internal standard, D₅-6PPDquinone, are measured. A precursor ion and three of its products are monitored in positive MRM mode (Hunt et al, 2021). One ion is used as the quantifier, and the other two are used as qualifier ions. The presence and ratio of these ions (qualifier ratio), is used to confirm compound identification. Quantification is performed by comparing the response of the quantifier product ion for 6PPD-quinone to that of the isotopically labelled internal standard.

This method is based on an application note from Agilent using the same LCMSMS system: "Quantitation of Toxic Tire Degradant 6PPD-Quinone in Surface Water: Using direct injection on an Agilent 6470 triple quadrupole LC/MS

2.0 SCOPE AND APPLICATION

The present method is intended for freshwater and surface water samples, including stormwater. Although it may be applicable to other sample matrices, specific sample preparation steps for those matrices are not included here.

3.0 OTHER APPLICABLE SOPs

The SOPs for procedures which are required within this protocol but are also independent procedures are cited below:

Pipette Calibration Checks

KCEL SOP #4054

4.0 SAMPLE CONTAINERS, PRESERVATION AND STORAGE

- 1. The preferred sample container is a 250 mL amber glass bottle.
- 2. Upon receipt by the Aquatox section the samples are kept refrigerated at 4°C in the dark until further processing.

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- 3. The holding time is up to 28 days at 4°C.
- 4. Once fully prepped for LCMSMS analysis, samples should be run immediately if possible. If necessary, prepped samples may be stored at 4°C for up to 2 weeks prior to analysis.

5.0 EQUIPMENT

- 1. Agilent 1290 Infinity II LC system. Includes temperature controlled autosampler, microvacuum degasser, quaternary pump, thermostatted column compartment, column switching valve, and analytical column (Agilent InfinityLab Poroshell 120 EC-C18, 2.1x 50mm, 1.9um, p/n 699675-902, Agilent Technologies, Inc).
- 2. Agilent Technologies 6470 Triple Quadrupole Mass Spectrometer with Agilent Jet Stream Electrospray Ionization Source. Includes MassHunter Workstation Software Version B.10 .00.
- 3. Ultra pure compressed nitrogen gas for QQQ collision cell (Praxair UN1066)
- 4. Nitrogen gas from generator at 80-100 psi for QQQ source (Peak NM32LA)
- 5. Refrigerator (4°C) / Freezer (-20°C +/- 5°C)
- 6. Vortex mixer
- 7. Vacuum manifold (Supelco)

6.0 SUPPLIES

- 1. 2 mL amber glass autosampler vials with caps (Agilent 5182-0716 and 5185-5820)
- 2. Oasis HLB 6cc (200 mg) SPE cartridges (Waters, 106202)
- 3. Glass test tubes, 16 x 100 mm (Fisher 14-961-29)
- 4. Pipettors and disposable tips measuring 1-10 μL, 10-100 μL and 100-1000 μL (Eppendorf)

7.0 REAGENTS

- 1. Milli-Q water reverse osmosis water additionally filtered through a Super-Q filtration system.
- 2. Acetonitrile, HPLC grade (Acros Organics 61001-0040). Store at room temperature in flammables cabinet.
- 3. D₅-6PPD-quinone, extracted internal standard/surrogate, 100 ug/mL (HPC Standards 688151). Store at 4°C.
- 4. 6PPD-quinone standard, 100 ug/mL (HPC Standards 688152). Store at 4°C.
- 5. 6PPD-quinone second source standard, 100 ug/mL (Cambridge Isotope Laboratories, ULM-12288-S)

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- 6. Ammonium acetate (Fisher A114-50)
- 7. Methanol HPLC grade (J.T Baker 9093-03)
- 8. ESI-L low concentration tuning mix (Agilent G1969-85000). Store at 4°C.

8.0 SOLUTIONS

- 1. HPLC mobile phase A: 1 mM ammomium acetate in Milli-Q water. To prepare: add 200 uL of 5 M ammonium acetate stock solution to 1 L MilliQ, or scale appropriately for volume needed. 5 M ammonium acetate stock is prepared with 7.708 g ammonium acetate in 20 mL MilliQ water).
- 2. HPLC mobile phase B: Acetonitrile

9.0 DEFINITIONS

Standard: Solution with a known concentration of analyte. Different dilutions of the standard are used in conjunction with the Internal Standard to construct a calibration curve from which the concentration in the sample is determined.

Internal Standard (ISTD): A pure compound that is added to all standard solutions and samples in a known amount and used to measure the relative response of the other method analytes that are components of the same solution. In this case, the internal standard is an extracted internal standard, added at the beginning of sample preparation and taken through all extraction steps.

Surrogate: A compound with properties very similar to those of the target analyte which is unlikely to be present naturally in the sample. The surrogate is added at the beginning of sample preparation and taken through all extraction steps.

Initial Calibration Verification Standard (ICV): Also called a Quality Control Standard (QCS) A standard of the target analyte obtained from a second source and prepared separately from the calibration standards.

Continuing Calibration Verificaton Standard (CCV): Also called a Continuing Calibration Check (CCC). A calibrator (usually mid-point) run at established frequency during a run. If no standard curve is run, then a CCV must also be run at the beginning of the run.

Method Blank (MB): MilliQ water processed exactly as a sample. The method blank is used to determine if the method analytes of other interferences are present in the laboratory environment, the reagents, or the apparatus.

Spike Blank (SB): MilliQ water spiked with a known amount of 6PPD-quinone and processed exactly as a sample. The spike blank is used to verify method performance for accuracy.

Matrix Spike (MS): Sample spiked with a known amount of 6PPD-quinone and processed exactly as a sample. The purpose of the matrix spike is to determine whether the matrix contributes bias to the analytical results.

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<u>Matrix Spike Duplicate (MSD)</u>: a duplicate of the sample used to prepare the Matrix Spike, spiked and analyzed identically to the Matrix Spike. The Matrix Spike Duplicate is used to assess the method precision when the method analytes are rarely found at concentrations greater than the MDL.

<u>Relative Percent Difference (RPD)</u>: This calculation is based on the MS and MSD and provides information on the method precision: $RPD = ([MS-MSD]/((MS+MSD)/2)) \times 100$.

<u>Relative Standard Deviation (RSD)</u>: The standard deviation of three or more results divided by the mean of the results. See the QA Manual for more information.

<u>Laboratory Duplicate (LD)</u>: Duplicate of a sample, processed exactly as the sample. The Laboratory Duplicate is used to assess method precision when the analyte is expected to be found at concentrations above the MDL. An RPD can also be calculated for the sample and LD following the same equation as for the MS/MSD RPD (substituting Sample and LD for MS and MSD).

Method Detection Limit (MDL): The minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Determined as directed in 40 CFR 136 Appendix B, revision 2. See the QA Manual Appendix E for more information.

<u>Lower Limit of Quantitation (LLOQ)</u>: The lowest point of quantitation, in this case, the lowest concentration in the calibration curve. See the QA Manual Appendix E for more information.

<u>Precursor Ion</u>: An ion that can be identified by its m/z value, prior to fragmentation in the collision cell

<u>Product Ion</u>: An ion that can be identified by its *m*/z value, following fragmentation in the collision cell

Qualifier Ion Ratio: Expected Qualifier Ion response as percentage of Quantifier Ion.

LIMS Prep Date: Date/time the sample is prepped for analysis.

LIMS Analysis Date: Date/time of a LC/MSMS run.

<u>Batch</u>: A set of no more than 20 samples of the same matrix, prepared and processed together using the same procedures and reagents.

10.0 PROCEDURE

<u>Note</u>: 6PPD-quinone in environmental samples and standards may be toxic. Use adequate precautions, including gloves, lab coat and eye-protection when handling.

10.1 Standard Preparation

Stock standards. Standard comes as a 100 ug/mL solution in acetonitrile. Store at 4°C for up to one year.

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Primary standard. Prepare a 1000 ng/mL solution of the 6PPD-quinone standard by adding 10 ul of stock standard to 990 uL acetonitrile. Store in 2 mL amber glass vial at 4°C for up to one year.

Calibration standards. Prepare at minimum 6 calibration levels using the primary standard and methanol. Add internal standard/surrogate to each calibrator to a concentration of 5 ng/mL. Suggested calibration standard concentrations are 0.01, 0.05, 0.1, 0.5, 1, 5 ng/mL, with 10 ng/mL included for stormwater runoff samples.

Stock internal standard/surrogate. The internal standard comes as a 100 ug/mL solution in acetonitrile. Store at 4°C for up to one year.

Primary Internal standard (ISTD)/Surrogate. Prepare a working internal standard of 1000 ng/mL D₅-6PPD-quinone by adding 10 uL internal standard stock to 990 uL acetonitrile. Add 5 uL of this ISTD to 995 uL calibrator for a final ISTD concentration of 5 ng/mL.

Initial calibration verification (ICV) standard – second source. The second source also comes as 100 ug/mL in acetonitrile. Prepare a 1000 ng/mL working standard by adding 10 uL of the tock to 990 uL acetonitrile. Prepare desired calibration level using methanol.

10.2 Sample Preparation Using Solid Phase Extraction (SPE):

- 10.2.1 Measure desired volume of sample into a glass beaker. 50 mL is the preferred volume.
- 10.2.2 For the sample designated for matrix spike and matrix spike duplicate, prepare two additional beakers.
- 10.2.3 For the sample designated for a lab duplicate, prepare one additional beaker.
- 10.2.4 Use the same volume of MilliQ water to prepare method blank and spike blank.
- 10.2.5 Spike the spike blank, matrix spike, and matrix spike duplicate with 10 ul of the 6PPDq primary standard for a final concentration of 0.2 ng/mL.
- 10.2.6 Add internal standard/surrogate to ALL samples in a batch, including quality control (QC). Add 50 uL of the primary ISTD stock to 50 mL sample/QC volume. This will yield a SPE extract concentration of 5 ng/mL.
- 10.2.7 Place the required number of SPE cartridges (Oasis HLB 6cc 200 mg) in the vacuum manifold ports. Block any empty ports with stoppers.
- 10.2.8 Condition cartridges with 2x10 mL methanol and then 2x10 mL MilliQ water. Do not let the cartridges become dry after the conditioning.
- 10.2.9 Pour a sample into the cartridge, slowly drawning down under weak vacuum, repeating until all sample has passed through the cartridge. Do not let the cartridge run dry while adding the sample.
- 10.2.10Rinse sample container with 10 ml of MilliQ water and filter this through the SPE cartridge. Repeat once.
- 10.2.11Dry cartridge under vacuum for 5 minutes.
- 10.2.12Place labeled glass test tubes in manifold to collect eluent.
- 10.2.136PPD-quinone is eluted from the solid phase with 10 mL of 100% methanol.

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- 10.2.14Verify that volume in each collection tube is 10 mL. Add additional methanol to bring the volume to 10 mL if needed.
- 10.2.15Vortex and pipet 1 mL of extract into a 2 mL glass autosampler vials and analyze.
- 10.2.16If the sample cannot be analyzed immediately, it should be stored in the refrigerator at 4°C up to 2 weeks if necessary.

10.3 QC Sample Preparation

Five QC samples are prepared routinely with each batch of samples and carried through all the extraction steps:

QC sample preparation for 6PPD-quinone

QC Sample	LIMS Name	Prepared in	Concentration (ng/mL)
Method Blank	MB	MilliQ water	0
Spike Blank	SB	MilliQ water	0.2
Matrix Spike	MS	Sample matrix	0.2
Matrix Spike Duplicate	MSD	Sample matrix	0.2
Laboratory Duplicate	LD	Sample matrix	variable

10.4 MassHunter acquisition method

10.4.1. Acquisition Method (6ppdqSURR)

A. Sampler

11.50	<u> </u>
Injection Mode	Injection with needle wash
Injection Volume	10 μL
Stoptime	As pump/No limit
Posttime	1.5 min
Draw Speed	200 μL/min
Eject Speed	400 μL/min
Draw Position Offset	0.0 mm

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B. Quatarnary Pump

<u> b. Quatarn</u>	<u>lary Fullip</u>
Flow	0.6 mL/min
Solvent Composition: A	H ₂ O with ammonium acetate
Solvent Composition: B	Acetonitrile
Low Pressure Limit	0.00 bar
High Pressure Limit	800.00 bar
Stoptime	5.7 min
Posttime	1.5 min
Automatic Stroke Calculation A	Yes
Automatic Stroke Calculation B	Yes
Compressibility A	100 x 10 ⁻⁶ /bar
Compressibility B	115 x 10 ⁻⁶ /bar
Maximum Flow Gradient	100.000 mL/min/min

Timetable

	Time (min)	A (%)	B (%)	Flow (mL/min)	Max. Pressure Limit (bar)		
1	0.0	70	30	0.6	800		
2	0.5	70	30	0.6	800		
3	4.7	30	70	0.6	800		
4	4.8	0	100	0.6	800		

C. Column Compartment

Temperature	40.0°C
Enable Analysis	When temperature is within ± 0.50 °C
Stoptime	As pump/injector
Posttime	1.5 min

D. QQQ

Tune File	atunes.Tune.xml
Stop Time	No Limit/As Pump
Ion Source	AJS ESI
Time filtering	Peak width 0.07 min

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Time Segments

Index	Start Time (min)	Scan Type	Div Valve	Delta EMV (+)	Delta EMV (-)	Store
1	0	MRM	To Waste	0	0	No
2	3.5	MRM	To MS	600	0	Yes
3	5	MRM	To Waste	0	0	No

Time Segment 2, Scan Segments

Compound Name	ISTD	Precursor lon	MS1 Res	Product lon	MS2 Res	Dwell	Frag- mentor	Collision Energy	Cell Accel Voltage	Polarity
6PPDq		299.2	Unit	241.1	Unit	100	105	32	4	Positive
6PPDq		299.2	Unit	215.1	Unit	100	105	16	5	Positive
6PPDq		299.2	Unit	187.1	Unit	100	105	32	5	Positive
D5-6PPDq	yes	304.2	Unit	246.1	Unit	100	110	36	4	Positive
D5-6PPDq	yes	304.2	Unit	220.1	Unit	100	110	20	4	Positive
D5-6PPDq	yes	304.2	Unit	192.1	Unit	100	110	36	5	Positive

Source Parameters

Gas Temp	300°C
Gas Flow	10 L/min
Nebulizer	40 psi
Sheath gas temp	375°C
Sheath gas flow	11 L/min
Capillary voltage	Positive 2500 V
Nozzle voltage	500V

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10.5 Calibration

10.5.1 Initial Calibration

The method is initially calibrated at a minimum of six non-zero concentrations to build a calibration curve. If high levels of 6PPD-quinone are expected, the curve may be extended. Internal standard calibration using an extracted internal standard/surrogate is applied to this method. A typical calibration curve contains the following concentrations: 0.01, 0.05, 0.1, 0.5, 1, 5 ng/mL (see Section 10.1). An acceptable calibration curve will have a correlation coefficient of no less than 0.99 and each calibration point must be within 20% of the target concentration when compared to the calibration curve. A quadratic curve fit including (but not forcing) the origin and a 1/x weighting is used. The 6PPD-quinone transition of 299.1>241.1 is used for quantification.

10.5.2 Initial Calibration Verification

A second source calibration verification standard (ICV) is analyzed after the initial calibration, and with each new lot of the primary standard. The results must be within +/- 15% of the target concentration. If this is not met, the calibration verification is reanalyzed. If it still fails to pass, the primary standard is remade and measured as described above until the verification run passes, or the batch of standard is determined to be faulty and new standard is ordered.

10.5.3 Continuing Calibration Verification

For each instrument run, a continuing calibration verification standard (CCV) at mid-concentration can be analyzed in place of the full calibration curve as long as the recovery of 6PPD-quinone is within +/- 20% of the target concentration. The calibration verification standard is re-analyzed after every 10 samples and at the end of the run. Its recovery must be within +/- 20% of the target concentration; otherwise, the analysis is stopped, and corrective action, such as recalibration of the instrument, is taken to meet the acceptance criteria. A calibration blank is also analyzed at the start of each instrument run to verify that the system background is clean. The calibration blank must be <MDL. If it is not, steps must be taken to determine what is causing the interference, and it must be addressed before samples can be processed.

10.6 Retention Time Window

Retention time windows are established once the instrument method has been developed. In MassHunter Quantitative Analysis, Outlier Setup Tasks, Retention Time settings are used to define the range of acceptable retention times for the peak. Using percent (rather than minutes) allows for easy updating of retention times as these might slightly shift over time. The default range of +/- 5% is appropriate for the current method. Under current conditions retention times (in minutes) are as follows:

6PPD-quinone: 4.517 D₅-6PPD-quinone: 4.492

10.7 Qualifier Ion Ratio

Qualifier ion ratios are established during method development. This ratio of the qualifier ion response as a percentage of quantifier ion response is called "relative response" in the

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MassHunter software. Under current conditions the relative response for method analytes are as follows:

6PPD-quinone: 299.2 > 215.1, 138.0; 299.2 > 187.1, 111.1.

D5-6PPD-quinone: 304.1> 216.1, 278.7; 304.1>192.1, 235.4

Acceptable deviation from this value, termed "uncertainty" in MassHunter, is set at 30%.

10.8 Sample Analysis

A. Prepare Instrument

- 1. Turn on temperature control for sample compartment.
- 2. Note pressures for nitrogen cylinder and nitrogen generator in daily maintenance log.
- 3. Clean QQQ source with 50% isopropyl/water.
- 4. Launch MassHunter Acquisition software.
- 5. If performing autotune or checktune, refer to Section 11.1.
- 6. Check/fill mobile phase reservoirs as needed and update volume of mobile phases.
- 7. Select method for MS2 scan background check at 50% B (e.g. Background6ppdq.m).
- 8. Turn on system components (autosampler, pump, column compartment, QQQ). In the pump menu (right click on pump icon to display), select "prepare pump" from the drop down menu, then click the "purge" option to purge the lines of bottles for Solvent A (50%) and Solvent B (50%) for 2-3 minutes at 3 mL/min.
- 9. After purge program finishes, run 70% A and 30% B at 0.6 mL/min to stabilize.
- 10. Select 6PPDq method (6ppdqISTDSURR.m) and run worklist.

B. Prepare and run Worklist

- 1. Open an existing Worklist to use as template and Save As with current date name (e.g. yymmddppdqsurr.wkl).
- 2. Open Worklist, Runtime Parameters and add new data directory (e.g. yymmddppdqsurr).
- 3. Update all fields including the path for autotsaving to the I drive (I:\InstrumentData\Agilent LC-MS\Data\yymmddppdqsurr) and save.
- 4. Load autosampler according to order specified in Worklist. Note: samples in the tray on the left are designated P1, tray on the right by P2; followed by letter (A-F) indicating row and number (1-11) indicating vial position in row. For example, the vial in the first position on the left would be P1-A1, and the last position in the left hand tray would be P1-F11. First position in right hand tray: P2-A1, last position P2-F11.
- 5. Run Worklist.
- 6. Make appropriate notes in the instrument's daily maintenance log (Appendix A).

C. Analyze Data and Report

- 1. Launch QQQ Quantitation.
- 2. Create new batch. Name batch as yymmddppdqsurr.bin.
- 3. Add samples to the batch (all samples in yymmddppdgsurr directory).
- 4. Open Method from existing batch, select prior batch.
- 5. Exit editor apply method to batch.
- 6. Analyze batch and save.

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- 7. In Method edit window, update/average RT and qualifier ratio.
- 8. Exit editor apply method to batch.
- 9. Analyze batch and save.
- 10. Report generate batch report using the custom report template 6PPDQrev.m.
- 11. Export data to Excel using the export command in MassHunter and save in the LCMS interface folder on the lab's instrument drive (I:\InstrumentData\Agilent LC-MS\Interface\). File must be named with just the WG# so it will be recognized by the interface. Be sure samples are named only with L# (samples) or WG# (QC samples).

11.0 QUALITY CONTROL

11.1 QQQ maintenance and mass calibration

The autotune calibration is performed at least once every two months and after preventative maintenance, any major change to the instrument, or if a checktune fails. A checktune is performed when running an initial calibration using the positive polarity. Checktune requirements are set in the check tune report by the manufacturer. Acceptable results are displayed in green, failed parameters are flagged in yellow. If a checktune fails in more than 10 parameters, or if the abundance of the highest mass is below 15000, verify tune mix volume is sufficient and visually inspect to confirm nebulizer spray is steady and conical. Rerun the checktune. If checktune fails again, run an autotune.

- 1. Check calibrant level
- 2. Go to Tuning context, Autotune tab, check Positive mode
- 3. With LC off or To Waste, start Autotune or Checktune

Optionally, the instrument's performance can be visualized beforehand by going to Manual tab, LC to Waste, MS2 profile or MS2 scan, Calibrant delivery checked \rightarrow Acquire.

Electronic copies of all tune results (autotunes and checktunes) are automatically saved in the Tunes folder MassHunter\Tunes\QQQ\6470A\date.

11.2 Calibration QC

The acceptance limits for the initial calibration and continuing calibration verifications are listed in Section 10.5.

11.3 Initial Demonstration of Capability (IDC)

An IDC study is needed when a new method is established, when a new instrument is brought online, after major instrument maintenance, or when a new analyst starts using the method. The following need to be completed prior to analyzing any field samples:

- 11.3.1 Demonstrate low system background by analyzing the MB immediately following the highest calibration standard. This MB must be <MDL.
- 11.3.2 Demonstrate acceptable precision by analyzing 7 replicates of the SB. The RPD of the replicates must be within 20%.

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11.3.3 Demonstrate acceptable accuracy by analyzing 7 replicates of the SB (may be the same as those used in 11.3.2). The average recovery must be +/- 30% of the true value.

11.4 Routine QC Samples Frequency and Limits

The following table lists the QC samples to be analyzed with each preparation batch and their acceptance limits:

QC Sample	Required Frequency	Acceptance Limits*
Method Blank	1 per batch of 20 or fewer samples	<mdl< td=""></mdl<>
Spike Blank	1 per batch of 20 or fewer samples	50-150% recovery
Matrix Spike	1 per batch of 20 or fewer samples	50-150% recovery
Matrix Spike duplicate	1 per batch of 20 or fewer samples	50-150% recovery and ≤
		45% RPD
Lab duplicate	1 per batch of 20 or fewer samples	≤ 40% RPD

^{*}The acceptance limits will be updated once enough data has been generated for control charting determination of method-specific limits.

In addition to the discrete QC samples, the response of the extracted internal standard (ISTD)/Surrogate is monitored. This response in each sample must be 20-200% of the average response of the ISTD/Surrogate in the calibrators from the calibration curve used in quantifying that batch.

12.0 RECORDKEEPING, REPORTING AND DATA MANAGEMENT

12.1 LIMS data entry and reporting

- 1. Create a workgroup (WG) in LIMS:
 - Add samples and QC samples.
- 2. Load data via Excel interface:
 - Open Excel AQT Data Entry.
 - Select Assay, AQ6PPDQ and enter WG number, preparation and run dates/times, and concentration factor.
 - An excel spreadsheet will open with all the fields populated. The interface will alert you if any samples or QC are missing. The concentration factor needs to be changed from 5 to 1 for the Continuing Calibration Check since this standard check does not go through SPE. Verify data looks correct. Send Data to LIMS using the tab at the top of the page.
 - A copy of this spreadsheet is saved on the instrument drive under InstrumentData\Agilent LC-MS\Interface\Sent2Lims.
- 3. LIMS QC and reporting:
 - In LIMS select Sample Data from the options at the top of the screen. Select Process Queue from the drop down menu and type "QC" in the blank.
 - Select the QC samples by checking the box at the left. Run QC. LIMS will calculate % recoveries and RPDs where applicable.

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- From the Reports tab at the top of the screen choose Lab Review Report. Save the Lab Review Report as PDF for Docusign.
- From the Reports tab choose QC Report. Save the QC Report as PDF for Docusign.
- The Surrogate report needs to be opened separately from the lab's Reports folder. When QC Calc is performed in LIMS, a surrogate report file is created in the Report folder with the WG number as the file name. Open this file in the Excel interface and format using AQT formatting option. Save this file and include in the Docusign packet.
- Approve and move workgroup in LIMS after Docusign peer review of data package.

All test data, procedures and notes made during testing are entered into worksheets, organized by preparation and analysis batches and referenced with a WG number for LIMS. Note that all chromatograms for every sample/calibrator/QCsample are stored on the hard drive of the instrument computer - D:\MassHunter\Data\YYMMDDppdqsurr and on the lab's network drive - I:\InstrumentData\Agilent LC-MS\Data\YYMMDD6ppdqsurr.

Electronic data packages include the following: QC summary, sample log sheet, SPE log sheet, MassHunter batch table, MassHunter calibration curve, LIMS Lab Review Report, LIMS QC Report, LIMS surrogate report, and custom MassHunter report with chromatograms. The data packets undergo an electronic QA review by another analyst and the unit supervisor using Docusign. While the policy for storage of electronic records is being developed, all records are kept in the secure location according to King County records management requirements on the Aqua Toxicology section of the Common drive: K:\aquatox\Docusign\Completed\6PPDqsigned.

13.0 SAFETY AND HAZARDOUS WASTE

6PPD-quinone in environmental samples and standards may be toxic. Use adequate personal protection equipment, such as a lab coat, gloves, and safety glasses.

Used autosampler vials, disposable pipets and pipet tips are discarded into the solid waste. Used mobile phase is collected in a sealed 5 gal container equipped with an air filter, that is later transferred to a disposable container and disposed as hazardous liquid waste. This is tracked daily in a notebook kept by the instrument and those daily records are transferred monthly to a multitab Excel spreadsheet on the Common drive in the lab-wide hazardous waste disposal stream: K:\safety\Hazardous Waste Program\ Disposal\YYYY\ disp data. The waste associated with this SOP would be recorded under the tab "AQT HPLC Liquid Waste".

14.0 TRAINING

This method is intended to be used by operators familiar with the general concepts and procedures used for LCMSMS analysis, including basic chemistry and lab skills such as making solutions. Training will involve the trainee reading the SOP and related references, and watching the full method as demonstration by a trained analyst. The trainee will then work through the

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method with the assistance of the trained analyst until they are comfortable with all aspects of the method. The trainee will also complete a full IDC study which satisfies all requirements listed in Section 11.3 before they can run samples independently. Once the trainee has accomplished this, they will sign a docusign form attesting to the completion of training. This form will be signed by the analyst who oversaw the training and by the AQT Supervisor. The signed docusign form will be kept on the Common drive under aquatox\training records.

15.0 REFERENCES

Hunt K, Hindle R, Anumol T. Quantitation of toxin tire degradant 6PPD-quinine in surface water using direct injection on an Agilent 6470 triple quadrupole LC/MS, Agilent Application Note, July 13, 2021.

Tian et al, 2021. A ubiquitous tire rubber-derived chemical induces acute mortatility in coho salmon, *Science*, 371(6525): 185-189.

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APPENDIX A QQQ Maintenance Checklist - Daily

DATE			
Degasser	Check status		
Rough Pump	Check oil level		
	Rough vacuum		
	Quiet cover fan		
Turbo Pump	High vacuum		
Liquid Nitrogen	Pressure		
Collision Cell	Nitrogen (PSI)		
Source	Cleaning		
	Check nebulizer spray		
	Inspect nebulizer tip		
	Chamber current (ESI or MMI) > 0.25 uA		
	Capillary current (ESI or MMI) > 20 nA		
Mobile Phase/Pump	Prepare mobile phases		
	Set solvent levels		
	Check/empty waste		
	Prime pump		
	Column pressure (@ equil) mainpass		
	Column pressure (@ equil) bypass		
Autosampler	Flush pump solvent level		
	Flush pump prime		
	Reset		
Tuning	Check calibrant level		
	New calibrant (if low)		
	Checktune		
	Autotune		
	Tune EMV		
MS2 Scan	Background check		
System	Suitability test mix		
	Carryover check		
PC	Defragment hard drive		
	Reboot		
Initials			

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APPENDIX B

2023 initial MDL study for 6ppdquinone

All MDL samples were spiked to 2X the estimated MDL.

Estimated MDL for this method is 0.01 ng/mL in extract, 0.002 ng/mL final. MDL spike = 0.02 ng/mL in extract, 0.004 ng/mL final.

6ppd-c	conc	(ng/	ml [°]	١
oppu-u	COLIC	เมหา		,

	- 1-11	(6//	
date	extract	final	method blank
11/3/2023	0.0247	0.0049	<mdl< td=""></mdl<>
	0.0254	0.0051	<mdl< td=""></mdl<>
	0.0266	0.0052	<mdl< td=""></mdl<>
11/6/2023	0.0251	0.0050	<mdl< td=""></mdl<>
	0.0253	0.0051	<mdl< td=""></mdl<>
11/7/2023	0.0214	0.0043	<mdl< td=""></mdl<>
	0.0186	0.0037	<mdl< td=""></mdl<>
	0.0200	0.0040	<mdl< td=""></mdl<>
S	0.002953	0.000541	4
calc MDL	0.008852	0.001622	

Calculated MDL based on extract is 0.0089 ng/mL (close to estimate of 0.01 ng/mL). Calculated MDL based on final value is 0.0016 ng/mL (close to estimate of 0.002 ng/mL).

calc MDL = t * S t = 2.998 for 8 samples S = standard deviation

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Certificate Of Completion

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Status: Completed

Envelope Originator: Arina Podnozova

401 5TH AVE

SEATTLE, WA 98104 apodnozova@kingcounty.gov

IP Address: 64.207.219.73

Record Tracking

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Security Appliance Status: Connected

Storage Appliance Status: Connected

Holder: Arina Podnozova

apodnozova@kingcounty.gov

Pool: FedRamp

Signatures: 3

Initials: 0

Pool: King County-Dept of Natural Resources &

Parks-Water & Land Resources-Environmental Lab

Location: DocuSign

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Signed: 12/5/2023 1:30:52 PM

Timestamp

Location: DocuSign

Signer Events

Elizabeth Frame

elizabeth.frame@kingcounty.gov King County Environmental Laboratory

Security Level: Email, Account Authentication

(None)

Signature

-55664BFF157F4EE

Signature Adoption: Pre-selected Style

DocuSigned by: Elizabeth Frame

Using IP Address: 198.49.222.20

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Francis Sweeney

francis.sweeney@kingcounty.gov

Lab Supervisor

King County Environmental Laboratory

Security Level: Email, Account Authentication

(None)

DocuSigned by:

Francis Sweeney

Signature Adoption: Pre-selected Style

Using IP Address: 146.129.145.143

Sent: 12/5/2023 1:30:54 PM Viewed: 12/5/2023 1:32:15 PM Signed: 12/5/2023 1:32:27 PM

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Arina Podnozova

apodnozova@kingcounty.gov KCEL Quality Assurance Officer King County Environmental Lab

Security Level: Email, Account Authentication

(None)

anna Podnozova

Signature Adoption: Pre-selected Style Using IP Address: 198.49.222.20

Sent: 12/5/2023 1:32:29 PM Viewed: 12/5/2023 1:35:12 PM Signed: 12/5/2023 1:35:18 PM

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In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/5/2023 1:28:56 PM
Certified Delivered	Security Checked	12/5/2023 1:35:12 PM
Signing Complete	Security Checked	12/5/2023 1:35:18 PM
Completed	Security Checked	12/5/2023 1:35:18 PM
Payment Events	Status	Timestamps

